WHOLESALE FOOD DISTRIBUTION FACILITIES for PHILADELPHIA, PA.

Agricultural Marketing Service
U.S. Department of Agriculture
Washington, D.C.

Marketing Research Report No. 201

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PREFACE

This study of wholesale food marketing in Philadelphia was made at the request of the Greater Philadelphia Movement, a civic nonprofit organization which has recognized great social and economic advantages in a modern wholesale food distribution center. The purposes of the study were to ascertain the inadequacies of present marketing facilities and handling methods and to determine the kinds of marketing facilities that would be needed for the proper distribution of food at the lowest possible cost and with the least amount of effort, while at the same time maintaining the quality of the products.

This report is the fourth in a series of studies made during the past 20 years on wholesale food distribution in Philadelphia, in which the Department of Agriculture has participated. The previous publications are:

1. The Philadelphia Wholesale Fruit and Vegetable Market—A Study of Its Organization, Facilities, and Practices, December 1936.
2. Information on Choosing a Site for the Development of a Complete Wholesale Produce Market in Philadelphia, November 1939.
3. Wholesale Produce Market Facilities for Philadelphia, Pa., October 1951.

This study of the facilities for handling the seven major food commodities at wholesale in Philadelphia is a part of a broad program of research to reduce costs of marketing farm products.

Because this project required detailed studies of the distribution of seven major commodity groups, various organizations had charge of certain aspects of the study. Certain phases of the information on fruits, vegetables, and seafoods were based on material collected by Wayne A. Lee, professor of marketing, and William M. Carroll, research assistant, Pennsylvania State University, which they prepared in mimeographed form. James A. Mixon, frozen food consultant of James A. Mixon and Company, Washington, D. C., was responsible for the segment regarding frozen foods.

Others in charge of specific phases were the following members of the Transportation and Facilities Branch, United States Department of Agriculture: Harry G. Clowes, agricultural economist, butter and cheese; John C. Bouma, marketing specialist, dry groceries; George E. Turner, agricultural economist, meats and meat products, assisted by Heber Rice, Jr., industrial engineer, formerly with the Branch; Norman G. Paulhus, agricultural economist, also formerly with the Branch, poultry and eggs; A. B. Lowstuter, architectural engineer, preparation of the layout for the food center and of estimates of construction costs; Catharine A. Perry, model maker, preparation of the model for the layout; Clayton F. Brasington, industrial engineer, preparation of the layouts for the suggested wholesale food stores and assistance with the layout of the food center; and Hazel N. Vermeer, agricultural marketing specialist, for consolidation of all of the material and preparation of this report.

Special acknowledgment is made to local officials of food organizations; trade associations; wholesalers of fresh fruits and vegetables, poultry and eggs, seafoods, meats, butter and cheese, dry groceries, and frozen foods; officials of the Pennsylvania, Baltimore & Ohio, and Reading Railroads; members of the trucking industry; retail grocers; banking, real estate, engineering, and architectural firms; city officials; and members of the Greater Philadelphia Movement. Appreciation also is extended to Morris Fruchtbaum, architect, of Philadelphia, for assistance with the layouts of the proposed wholesale meat stores; and to Kenneth B. Sherman, John P. Capus, and R. S. Smith, local representatives of the Agricultural Marketing Service, United States Department of Agriculture, at Philadelphia, for furnishing statistical information on various commodities.

The information contained in this report was presented orally at a public meeting in Philadelphia on October 27, 1954, and since that date has been used extensively by the Greater Philadelphia Movement, officials of Food Distribution Center, and various engineers, architects, and financial institutions in the development of plans for the new wholesale food distribution center.

March 1958

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SUMMARY

In 1954, an organization called the Greater Philadelphia Movement requested the United States Department of Agriculture to make a study to determine the adequacy of facilities in Philadelphia for distributing the seven major food commodities at wholesale. These commodities are fruits and vegetables, poultry and eggs, seafoods, meats and meat products, butter and cheese, dry groceries, and frozen foods. They are handled by 491 independent wholesalers, 5 chainstore organizations, 2 stockyards, 6 national meat packers, 2 railroad produce terminals, and 8 cold storage warehouses. About 159,100 carlot equivalents of these food products, with a wholesale value of nearly 1 billion dollars, moved through these wholesale food facilities in 1953.

About two-thirds of the facilities are concentrated in a small crowded area at the eastern edge of the city, in and around the Dock and Callowhill Streets markets on the Delaware River. Other types of businesses also became established there. As a result, needed expansions in wholesale food handling facilities in later years had to be made in scattered locations.

Facilities in the area itself are old, the buildings being several stories high, without rear entrances and direct rail connections. Many lack adequate refrigeration. Sanitation practices are scarce. There are no established business hours. Traffic congestion is acute.

Wholesalers operating under these undesirable conditions are paying large bills that could be reduced considerably or eliminated in a modern food distribution center. Some of these costs are for carting produce from railroad yards to stores; for moving food supplies into, within, and out of stores; and for losses from spoilage and deterioration. Even after allowing for larger rentals in a modern food distribution center, and after deductions for amortization of the investment, taxes, and operating expenses, annual savings in 5 selected items of operating costs for 340 independent wholesalers who should be interested in moving to the new food center in the initial stage of the development would be about $46 per carlot equivalent. In 1953, these dealers handled a total of 68,530 carlot equivalents.

The type of food center making these savings possible would be one in which all kinds of foods are unloaded from railroad cars and trucks directly into buildings, using labor-saving equipment. The buildings would provide space for both refrigerated and common storage and for processing and packing. Streets would be wide enough to permit free movement of traffic, even when trucks are backed up to store platforms, and parking areas would provide space for about 1,800 vehicles.

The food center would be planned for all types of wholesale food handlers—independents, chainstore organizations, packer-branch houses, processors, and manufacturers' branch houses. Development would be in stages, following a master plan in which separate sections are set aside for the handlers of each major group of food products, with ample space for expansion and for other firms to locate later. Each section would contain its own parking areas and railroad facilities. The buildings, with few exceptions, would be one-story, rectangular, warehouse-type buildings, with covered platforms. Design would be suitable for several types of users so that they could be modified, with little expense, to meet changes in the food industry. Large firms might occupy an entire building, but smaller firms would be grouped within buildings. No facilities would be built that have not been previously leased to a responsible firm for a rental adequate to cover all costs.

Office space would be provided in a separate administration building or on a second floor over store buildings centrally located in the food center. Restaurants and public restrooms also would be provided. Other facilities not to be overlooked are market news and inspection offices, telegraph services, a branch bank, barber shop, and perhaps sleeping accommodations.

A new food center for Philadelphia can be developed economically only by making a new start in a new location. The site with the best possibilities is a tract containing about 400 acres in the southeastern part of the city. This tract is the nearest available site to the retail outlets that the food center would serve, as well as the most convenient to major highways and rail service. Public utilities already reach a portion of the site.

An analysis of the needs of the 340 independent wholesalers who might be expected to move into the food center at the beginning revealed that for 310 of them row-type buildings containing several standard size store units would be most suitable. These dealers would require a total of 362 units, in 21 buildings, containing about 1¼ million square feet of floor space. Excluding the frozen food handlers, the floor area in the proposed plan is 28 percent less than in the buildings now occupied by the dealers.

The other 30 dealers would need detached stores of varying sizes and designs. However, it is anticipated that the composite needs of the 30 firms would be for slightly more floor area than is planned for the occupants of the multiple row-type buildings. A refrigerated building for frozen food handling and storage, a container shed, and three restaurants are included in the initial plan.

These facilities would require a total investment of about 38 million dollars. This sum includes the cost of purchasing the site, putting it into condition to build, and constructing food handling facilities. It covers the cost of rail connections and paving of parking areas and the areas around buildings, but it does not include the cost of public streets, water mains, and sewers. When all sections in the food center are constructed and the food center is complete, the total investment in it is expected to be about 100 million dollars.

To simplify the management of a food distribution center, the Food Distribution Center, a corporation to which the site is being transferred by the city on a stage-by-stage basis, and which is responsible for planning, developing, financing, and operating the facilities constructed on the site, might consider the desirability of leaving as much of the responsibility for management as possible to individuals or groups of wholesalers. For instance, the fruit, vegetable, poultry, egg, and seafood dealers, now operating primarily in the Dock and Callowhill district, might form one or more corporations to build or lease and operate the section of the market which they would use. Similar organizations might be formed by other trade groups. However, the number and composition of these corporations cannot be determined until negotiations with the tenants begin. Large corporations occupying entire buildings might deal directly with Food Distribution Center.

The total revenue required to meet the debt service, taxes, and operating costs is estimated at about 4 million dollars annually. Prorated among the various facilities, the annual rentals that would have to be charged to bring in sufficient revenue to meet these costs would range from $1.11 to $1.60 per square foot for space in multiple-store buildings, with the exception of the frozen food units, and from $1.29 to $1.60 per square foot for space in detached store buildings. Rental rates on space in the frozen food stores would have to be somewhat higher than the above. A rental rate of $2.05 per square foot should be adequate.

The 340 food handlers would save about 3 million dollars annually through reductions in the cost of cartage, porterage, handling within buildings, and spoilage and deterioration, after deducting all costs of amortizing and operating the facilities. Savings of about 1.5 million dollars would be shared by buyers and sellers alike through elimination of traffic delays.

Many other benefits could be expected. Wholesalers would benefit through reductions in time required for operations. Buyers could obtain supplies more quickly, in better condition, and at lower cost. Farmers would benefit from improvement in the operation of price-making forces. Railroads would be able to deliver directly to wholesale houses. Truckers would operate more easily. Employees would have better working conditions. Consumers would obtain higher quality foods at somewhat lower prices. And the city would benefit through the redevelopment of certain areas, increased tax returns, fewer traffic problems, and easier enforcement of sanitation and fire regulations.

The United States Department of Agriculture will continue to give assistance until the center is constructed and successfully operating.

City wholesale food markets have been under considerable pressure during the past quarter of a century to expand and modernize their facilities and improve their efficiency in handling food products. Increased per capita consumption of many products and population growth have brought tremendous increases in the volume handled and made improved facilities for food handling a necessity.

To meet present-day needs city wholesale food markets must have: (1) adequate and efficient facilities, well located to receive and distribute food supplies with dispatch and at a reasonable cost; (2) a market organization that fosters the efficient exchange of commodities both within the market and to outside points; and (3) an adequate basis of marketing information to facilitate price making and trading, including systems of price quotation and inspection services.

To determine the adequacy of Philadelphia's wholesale food markets for seven major commodity groups—fresh fruits and vegetables, poultry and eggs, seafoods, meats and meat products, butter and cheese, dry groceries, and frozen foods—information was obtained from wholesalers who handle these foods; buyers who patronize the markets; truckers hauling to and from them; railroad officials; and representatives of local, State, and Federal governments. The data thus obtained were analyzed, the inadequacies of present facilities were determined, and the kinds and amount of facilities needed were ascertained. This report sets forth the principal findings and recommendations.

INTRODUCTION

IMPORTANCE OF PHILADELPHIA AS A WHOLESALE FOOD MARKETING CENTER

Philadelphia, the Nation's third largest city, is a major center for the wholesale distribution of food. It is the main source of supply for nearly 4 million people living in the metropolitan area, and sends considerable quantities into the nearby densely populated areas along the eastern seaboard. In addition, some foods are distributed regularly from Philadelphia to places as far south as Miami and New Orleans, west to Chicago, and north to Portland, Maine.

It is estimated that during 1953 the equivalent of 159,100 carloads of food products, with a wholesale value of nearly 1 billion dollars, moved through the wholesale food marketing facilities in the city. This volume amounts to an average of 436 carlots per day for each of the 365 days of the year. If these supplies were all received by rail, the train bringing them to Philadelphia each day would be 4 miles long.

These foods came from the 48 States, Alaska, Hawaii, and many foreign countries, including Italy, Holland, Argentina, New Zealand, Switzerland, Brazil, Norway, Mexico, Guatemala, Honduras, Ecuador, Cuba, and Canada. Fresh fruit and vegetable supplies originated in 44 States, the most important of which were California, Florida, New Jersey, New York, and Pennsylvania. Relatively large quantities of poultry and eggs were received from Delaware, Maryland, Virginia, Pennsylvania, Minnesota, Iowa, and Canada. Seafoods were brought in primarily from the northeastern portion of the United States and from Labrador and Canada. Meats were received from major packers and slaughterers located in many States, including Illinois, Indiana and Iowa. Livestock for local slaughter was received from areas as far as Indiana, Iowa, Texas, Georgia, and Florida. Butter originated primarily from Iowa, New York, Minnesota, Illinois, Wisconsin, and Pennsylvania, and cheese mostly from Wisconsin, New York, Illinois, and Pennsylvania.

Adequate information was not obtained on the States supplying dry groceries, but it is likely that dry grocery warehouses contain items from most of the 48 States as well as many foreign countries. Frozen foods came from many States as far as the West Coast and the Deep South. Thus, the Philadelphia markets are of great importance to producers of farm products in practically all States and many foreign countries as well as to consumers in the Philadelphia metropolitan area and nearby areas in Pennsylvania and New Jersey.

Three great railroads—the Pennsylvania, the Baltimore & Ohio, and the Reading—serve Philadelphia. A network of Federal and State highways and expressways connect Philadelphia wholesale food markets with producing areas and food markets to the north, south, east, and west. Good piers on the Delaware River, easily reached from the Atlantic Ocean, make Philadelphia accessible to food shipments from distant points throughout the world. One of the country's major airports provides facilities for receiving food shipments by airplane, should this method of transporting food become important at some future date.

RECEIPT AND DISTRIBUTION OF FOODS

Of the estimated 159,100 carlot equivalents of foods arriving on the wholesale markets in Philadelphia during 1953, about 45 percent (72,085 carlots) were received by rail, and 55 percent (87,015 carlot equivalents) by motortruck. Included in the truck receipts were 2,210 carlot equivalents that arrived by boat and were trucked into the wholesale markets. Table 1 shows the direct receipts by rail and motortruck, by type of commodity handled.

The ratio of rail to motortruck receipts varied considerably among commodity groups, ranging from a ratio of 2 to 98 percent for the seafood group to 48 to 52 percent for the fresh fruit and vegetable group. The proportion of supplies arriving by rail has shown a steady decline over the last two decades. In 1931, slightly more than two-thirds of the total fruit and vegetable receipts arrived in Philadelphia by rail, and by 1949 motortruck receipts exceeded rail receipts.

The methods of marketing poultry and eggs have changed considerably during the last 10 years. Live poultry receipts have declined about 48 percent, or 18.3 million pounds, while dressed poultry receipts have increased about 40 percent, or 19.0 million pounds. Practically all live poultry and shell eggs were received by motortruck in 1953; but about 24 percent, or 385 carlot equivalents, of dressed poultry was received by rail.

In addition to the volume of frozen foods received on the Philadelphia markets (table 1), frozen food packers shipped in 2,700 carlot equivalents for storage in public cold storage warehouses for redistribution to manufacturers and to localities outside the Philadelphia area. This volume, however, is not considered, in this report, to be a part of the wholesale frozen food business.

About 73 percent, or 116,180 carlot equivalents,

of the total receipts of foods received on the Philadelphia wholesale markets during 1953 was distributed to retail stores, hotels, institutions, restaurants, and other wholesalers within the metropolitan area. The balance, 42,920 carlot equivalents, went outside the area, mostly to cities and towns within 100 miles of the city. Table 2 shows the distribution within and outside the metropolitan area by type of commodity handled. Some supplies were shipped to widely scattered destinations throughout the eastern half of the United States. All supplies moving to outlets within the metropolitan area and most of those distributed outside the area were transported by truck. The proportion of commodities distributed within the metropolitan area ranged from 60 percent for the seafood group to 91 percent for the poultry and egg group.

TABLE 1.—*Estimated direct receipts of food supplies, by type of commodity and method of transportation, Philadelphia, Pa., 1953*

Type of commodity	Rail		Motortruck		Total	
	Carlot equivalents	Percent of total	Carlot equivalents	Percent of total	Carlot equivalents	Percent of total
	Number	*Percent*	*Number*	*Percent*	*Number*	*Percent*
Fresh fruits and vegetables	31, 765	48	34, 950	52	66, 715	100
Poultry and eggs	395	7	5, 565	93	5, 960	100
Seafoods	[1] 25	2	[1] 1, 225	98	[1] 1, 250	100
Meats	[2] 24, 680	67	[3] 12, 145	33	[4] 36, 825	100
Butter and cheese	1, 770	75	580	25	2, 350	100
Dry groceries	11, 050	28	28, 950	72	40, 000	100
Frozen foods	2, 400	40	3, 600	60	6, 000	100
Total or average	72, 085	45	[5] 87, 015	55	159, 100	100

[1] Does not include the volume received by chainstore organizations.
[2] Includes 6,740 carlot equivalents (carcass meat weight) of livestock received by rail by local slaughterers.
[3] Includes 3,010 carlot equivalents (carcass meat weight) of livestock received by motortruck by local slaughterers.
[4] Includes 9,750 carlot equivalents (carcass meat weight) of livestock received by rail and motortruck by local slaughterers.
[5] Includes 2,210 carlot equivalents received by boat and trucked to wholesalers' stores.

TABLE 2.—*Estimated distribution of food supplies within and outside the metropolitan area, by type of commodity, Philadelphia, Pa., 1953*

Type of commodity	Within the area		Outside the area		Total	
	Carlot equivalents	Percent of total	Carlot equivalents	Percent of total	Carlot equivalents	Percent of total
	Number	*Percent*	*Number*	*Percent*	*Number*	*Percent*
Fresh fruits and vegetables	45, 715	69	21, 000	31	66, 715	100
Poultry and eggs	5, 435	91	525	9	5, 960	100
Seafoods	750	60	500	40	1, 250	100
Meats	26, 000	71	10, 825	29	36, 825	100
Butter and cheese	1, 495	64	855	36	2, 350	100
Dry groceries	31, 690	79	8, 310	21	40, 000	100
Frozen foods	5, 095	85	905	15	6, 000	100
Total or average	116, 180	73	42, 920	27	159, 100	100

VOLUME OF RECEIPTS BY TYPE OF HANDLER

The wholesale food business of Philadelphia is carried on by 491 independent wholesalers, 5 chainstore organizations with 9 warehouses, 6 national meat packers with 9 branch houses, 8 cold storage warehouses, and 2 stockyards. The majority of these handlers conduct their business in 4 wholesale markets serving Philadelphia and its trade territory: (1) the Dock Street Market, (2) the Callowhill Street Market, (3) the Baltimore & Ohio-Reading Produce Terminal, and (4) the Pennsylvania Railroad Produce Terminal.

For purposes of this report, the Callowhill and Dock Streets markets are considered one market area and will be referred to throughout the report as the "Dock and Callowhill Streets market district." These two markets are about two-

thirds of a mile apart, and much of the area between them is devoted to the wholesale handling of food. This market district is a comparatively small and compact "L-shaped" area at the eastern edge of the city. It lies between Spring Garden Street on the north; Pine Street on the South; Delaware Avenue on the east; and Ninth Street (between Spring Garden and Vine Streets) and Third Street (between Pine and Vine Streets) on the west. Within this district are 313 independent wholesalers, 5 packer branch houses, and 3 cold storage warehouses.

The two railroad produce terminals are less than a third of a mile apart, and about 2 miles from the Dock and Callowhill Streets market district. The Baltimore & Ohio-Reading Produce Terminal is located between South Delaware and Weccacoe Avenues, and the Pennsylvania Railroad Terminal is in the vicinity of Oregon and South Delaware Avenues. Seventeen independent fruit and vegetable wholesalers conduct their entire businesses at these terminals, while 23 dealers with facilities in the market district also receive carlots at the terminals.

The other 161 independent wholesalers, 4 packer branch houses, 9 chainstore warehouses, 5 cold storage warehouses, and 2 stockyards are in various other locations throughout the city. Figure 1 shows the locations of the wholesale food facilities, as well as the Dock and Callowhill Streets market district and the railroad produce terminals.

As shown below, the 491 independent wholesalers handle 7 major types of commodities. To avoid duplication, some wholesalers dealing in more than one type are classified according to the major product handled.

Type of commodity	*Number of independent wholesalers*
Fresh fruits and vegetables	168
Poultry and eggs	48
Seafoods	28
Meats	140
Butter and cheese	23
Dry groceries	40
Frozen foods	44
Total	491

The chainstore organizations handle all types of foods. National meat packers deal in meats and meat products, or handle meats in combination with butter, cheese, eggs, and poultry. The railroad produce terminals are primarily markets for fruits and vegetables, but frequently other food products are unloaded from their team tracks. The cold storage warehouses store large quantities of food products, and several frozen food wholesalers conduct their businesses direct from these warehouses. The stockyards are used largely by slaughterers for holding livestock.

Many additional wholesalers, handling specialty items such as coffee, rice, sugar, peanuts, and flour, are not covered in this report.

FRESH FRUITS AND VEGETABLES

The wholesale fresh fruit and vegetable business in Philadelphia is carried on by 168 independent wholesalers and 5 chainstore organizations. Of the 168 independent wholesalers, 151 are located in the Dock and Callowhill Streets market district. The other 17 dealers are carlot receivers who operate exclusively at the terminals. These wholesalers received direct a total of 66,715 carlot equivalents in 1953—31,765 by rail and 34,950 by truck (table 3).

TABLE 3.—*Estimated direct receipts of fruits and vegetables, by type of handler and method of transportation, Philadelphia, Pa., 1953*

Number and type of handlers	Rail	Motor-truck	Total
	Carlots	*Carlot equivalents*	*Carlot equivalents*
151 independent wholesalers in the Dock and Callowhill Streets market district [1]	0	21, 250	21, 250
Carlot receivers and auctions at produce terminals	25, 000	0	25, 000
5 chainstore organizations	6, 765	13, 700	20, 465
Total	31, 765	34, 950	66, 715

[1] These dealers received 7,400 carlots through the produce terminals. The produce then had to be trucked to the stores owing to lack of rail connections. This volume is in addition to the direct truck receipts.

Chainstore organizations are a major factor in the fruit and vegetable wholesale business. In addition to the 20,465 carlots they received direct in 1953, they obtained about 6,000 carlots from independent wholesalers in the Dock and Callowhill Streets market district, and about 4,000 from the produce terminals—a total of 30,465 carlots, or about 45 percent of the total direct receipts.

Based on the type of services performed, the 168 independent wholesalers may be classified into 3 types: (1) 143 handling several commodities or a general line of fruits and vegetables, (2) 22 specializing in prepackaging fruits and vegetables, and (3) 3 handling bananas only.

Business hours of the fruit and vegetable wholesalers in the Dock and Callowhill Streets market district are from 6 p. m. to 12 noon, or 18 hours daily Monday through Friday. The heaviest trading period occurs between 5 a. m. and 9 a. m. A fruit and vegetable auction operates at each railroad terminal on alternate days, beginning at 8 a. m. and continuing until all the products are sold. Private sales also are made at one terminal. The independent dealers there open at 5 a. m. in the summer and 6:30 a. m. in the winter, and operate Monday through Friday.

About 95 percent of the volume handled by independent wholesalers in 1953 was sold to buyers coming to the market for supplies.

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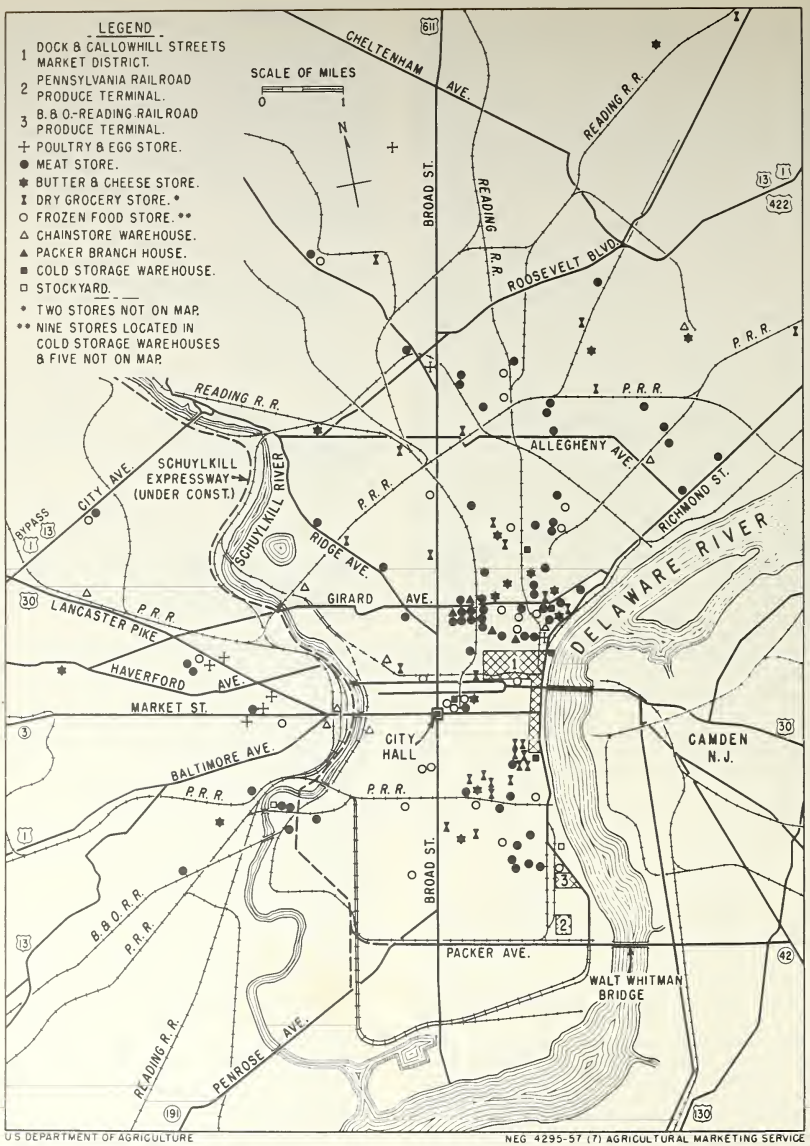

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Figure 1.—Map of Philadelphia, Pa., showing the location of facilities for the wholesale distribution of foods, 1954.

POULTRY AND EGGS

The wholesale poultry and egg business is handled by 48 independent wholesalers, the 5 chainstore organizations, and 5 national meat packers. Forty independent wholesalers are located in the Dock and Callowhill Streets market district, while the remaining 8 are in scattered locations. These handlers in 1953 received 5,960 carlot equivalents of poultry and eggs—395 by rail and 5,565 by truck (table 4).

TABLE 4.—*Estimated direct receipts of poultry and eggs, by type of handler and method of transportation, Philadelphia, Pa., 1953*

Number and type of handlers	Rail	Motor-truck	Total
	Carlots	*Carlot equivalents*	*Carlot equivalents*
48 independent wholesalers	125	3,725	3,850
5 chainstore organizations and 5 national meat packers	270	1,840	2,110
Total	395	5,565	5,960

The independent wholesalers conduct their businesses from individual stores with the exception of several dealers who distribute frozen eggs. Supplies of frozen eggs are placed in public cold storage warehouses, and usually are distributed directly from these warehouses to the food processor.

Poultry and egg wholesalers have no regulated business hours. Generally, most houses are open before 6 a. m. and remain open until 3 p. m. daily except Wednesdays and Sundays, on which days little or no business is conducted.

Only about 10 percent of the poultry and eggs handled in 1953 was sold to buyers coming to the market. Most of the business was done by telephone, and deliveries made in trucks owned or rented by the wholesalers.

SEAFOODS

The wholesale seafood business is conducted by 28 independent wholesalers, all of whom are located in the Dock and Callowhill Streets market district, and by the 5 chainstore organizations. The volume handled by the independent wholesalers in 1953 was estimated at 50 million pounds, or 1,250 carlot equivalents—25 by rail and 1,225 by truck. Information was not obtained on the volume of seafoods handled in 1953 by the chainstore organizations.

Trading hours are from 6 a. m. to 12 noon Monday through Friday. A major portion of the business is handled by telephone and through salesmen, and deliveries are made in trucks owned or rented by the wholesalers. The remainder is sold to buyers coming to the market for supplies.

MEATS

The wholesale meat business is transacted by 140 independent wholesalers, the 5 chainstore organizations, and the 6 national meat packers. Seventy-three independent wholesalers are located in the market district, while the remaining 67 are in scattered locations. The meat handlers in 1953 had direct receipts of 36,825 carlot equivalents—24,680 by rail and 12,145 by truck (table 5).

Based on their trading practices and marketing services performed, the independent wholesalers may be classified into 5 types: (1) 32 processors, (2) 18 boners, (3) 39 hotel suppliers, (4) 37 general wholesalers, and (5) 14 slaughterers. There is considerable overlapping in the services performed by these various types of wholesalers. Generally, the operations of slaughterers are vast and complicated. In addition to slaughtering live animals, they may process, bone, and sell meats at wholesale.

TABLE 5.—*Estimated direct receipts of meats, by type of handler and method of transportation, Philadelphia, Pa., 1953*

Number and type of handlers	Rail	Motor-truck	Total
	Carlots	*Carlot equivalents*	*Carlot equivalents*
140 independent wholesalers [1]	11,790	9,875	21,665
5 chain store organizations and 6 national meat packers	12,890	2,270	15,160
Total	24,680	12,145	36,825

[1] Includes processors, boners, hotel suppliers, general wholesalers, and slaughterers.

Local slaughterers in 1953 accounted for 9,750 equivalent carlots (carcass meat weight), or 27 percent of the total direct receipts, while the other 4 groups of independent wholesalers received 11,915 equivalent carlots, or 32 percent. Receipts of the chainstore organizations and the national meat packers accounted for the remaining 15,160 carlots, or 41 percent.

Owing to the complicated nature of the wholesale meat business, the intramarket movement is heavy. In 1953, it amounted to about 8,010 carlot equivalents. Hotel suppliers generally depend on local wholesalers or packer houses for their supplies. Processors obtain a large part of their volume from boners, and occasionally boners obtain supplies from local slaughterers.

No specific business hours apply to all meat wholesalers. Most of them are open 8 hours daily except Sundays. Several larger wholesalers maintain night crews or have an early morning shift for assembling orders for delivery.

Only 15 percent of the meats distributed by

independent wholesalers in 1953 went to buyers coming to the market for supplies, while 85 percent was delivered in trucks owned or leased by the wholesalers.

The buyers who pick up their supplies consist largely of truck jobbers. A jobber serves from 15 to 50 retail stores on a route and makes deliveries to them 2 or 3 times a week. He calls each store on his route in the late afternoon or early morning and obtains the order. He then pools the orders, and during the morning shops for his supplies.

BUTTER AND CHEESE

The butter and cheese wholesale business is carried on by 23 independent wholesalers, 5 chainstore organizations, and 5 national meat packers. Only 8 independent wholesalers are located in the market district, while 15 are scattered throughout the city. At the time of the survey many of them recently had relocated in suburban areas to take advantage of lower rents and other savings in operating costs. Two wholesalers conduct their businesses from cold storage warehouses. Others operate in individual stores.

The total direct receipts of all wholesale handlers in 1953 were estimated at 2,350 carlot equivalents—1,770 by rail and 580 by truck (table 6).

TABLE 6.—*Estimated direct receipts of butter and cheese, by type of handler and method of transportation, Philadelphia, Pa., 1953*

Number and type of handlers	Rail	Motor-truck	Total
	Carlots	*Carlot equivalents*	*Carlot equivalents*
23 independent wholesalers	1, 255	370	1, 625
5 chainstore organizations and 5 national meat packers	515	210	725
Total	1, 770	580	2, 350

Butter and cheese wholesalers do not have regulated business hours. Usually they open around 7 or 8 a. m. and remain open 8 hours daily except Sundays.

About 75 percent of the volume handled by wholesalers was distributed in trucks owned or rented by them, while the remaining 25 percent was sold to buyers coming to the market for their supplies.

DRY GROCERIES

The wholesale dry grocery business is handled by 40 independent wholesalers and 5 chainstore organizations. Ten independent wholesalers are located in the market district, and 30 are scattered at other locations.

Dry grocery independent wholesalers supply nonaffiliated retail grocers, hotels, restaurants, and institutions. Many of them handle only dry groceries, but several of the larger firms combine meats, frozen foods, fruits, and vegetables with their dry grocery business. Among the independent wholesalers are 7 voluntary sponsors for affiliated groups of retailers, and 4 retailer-owned cooperatives, servicing only retailers having capital investment in the cooperative.

As shown in table 7, a total of 40,000 equivalent carlots were received by all dry grocery wholesalers in 1953—11,050 by rail and 28,950 by truck.

TABLE 7.—*Estimated direct receipts of dry groceries, by type of handler and method of transportation, Philadelphia, Pa., 1953*

Number and type of handlers	Rail	Motor-truck	Total
	Carlots	*Carlot equivalents*	*Carlot equivalents*
40 independent wholesalers	4, 210	12, 990	17, 200
5 chainstore organizations	6, 840	15, 960	22, 800
Total	11, 050	[1] 28, 950	40, 000

[1] Includes 2,210 carlot equivalents received by boat and trucked to wholesalers' stores.

Generally, dry grocery wholesalers conduct their business from 8 a. m. to 5 p. m. daily except Sundays.

About 98 percent of the volume received by the independent wholesalers in 1953 was delivered in trucks owned or rented by them. Only 2 percent was sold to buyers who came to the market for their supplies.

FROZEN FOODS

The wholesale frozen food business is conducted by 44 independent wholesalers and 5 chainstore organizations. These wholesalers generally are scattered throughout the metropolitan area. Only three are located in the market district. Those serving the institutional trade tend to locate in the downtown areas near restaurants and hotels, while those serving the retail trade locate away from the downtown areas. Nine independent wholesalers conduct their businesses from cold storage warehouses, and 35 from individual stores. Two chainstore organizations also operate their frozen food departments from cold storage warehouses. Thus, the eight public cold storage warehouses have an important role in the marketing of frozen foods.

Frozen food handlers in 1953 received a total of 6,000 carlot equivalents—2,400 by rail and 3,600 by truck (table 8). Of this volume, 4,800 carlots were received at the public cold storage warehouses, and 1,200 carlots at wholesalers' stores.

TABLE 8.—*Estimated direct receipts of frozen foods, by type of handler and method of transportation, Philadelphia, Pa., 1953*

Number and type of handlers	Rail	Motor-truck	Total
	Carlots	*Carlot equivalents*	*Carlot equivalents*
44 independent wholesalers	1, 200	1, 700	2, 900
5 chainstore organizations	1, 200	1, 900	3, 100
Total	2, 400	3, 600	6, 000

The independent wholesalers may be classified into 3 groups: (1) 12 wholesalers servicing the retail trade, (2) 14 wholesalers serving the institutional trade, and (3) 18 processors. Wholesalers who serve the retail trade carry a line of products in each major frozen food category—vegetables, fruits, juices, prepared foods, poultry, seafoods, meats, and pet foods. Wholesalers serving the institutional trade specialize in a particular item or a combination of items, and may combine fresh food lines with their frozen food lines. Some wholesalers serving the institutional trade also serve the retail trade. Processors prepare and freeze fresh foods, and most of them freeze precooked foods as well. They generally specialize in only 1 or 2 lines of frozen foods.

The major portion of the frozen foods sold by independent wholesalers in 1953 was delivered in trucks owned or rented by them. Wholesalers operating from the public cold storage warehouses received and stored their supplies there, and assembled and dispatched orders from the warehouses. Wholesalers in individual stores received the bulk of their supplies at these warehouses, and withdrew supplies to their stores for assembling and dispatching orders to retail outlets. Deliveries were made from 1 to 4 times a week, depending on the amount of freezer storage in the retail outlets.

FACILITIES USED IN THE WHOLESALE DISTRIBUTION OF FOODS

Since the conditions within an area affect all wholesale handlers to some degree regardless of the type of commodity handled, the facilities used in food wholesaling in Philadelphia are described by areas rather than by commodity groups. The four areas are, the Dock and Callowhill Streets markets, the Baltimore & Ohio–Reading Produce Terminal, the Pennsylvania Railroad Produce Terminal, and the remaining areas outside these three.

FACILITIES IN THE DOCK AND CALLOWHILL STREETS MARKET DISTRICT

In the early days a farmers' market grew up at the foot of Market Street (then High Street) beside the Delaware River, because incoming food supplies converged at this spot and could be more easily unloaded and sold there. As the city grew, the volume of business grew. The farmers' market was pushed downriver to Dock Street and upriver to Callowhill Street, and wholesalers took over the location on Market Street. The meat wholesaling business followed Callowhill Street west a short distance and finally centered around Eighth and Noble Streets. By 1870, the present pattern of wholesale food distribution was rather firmly set. Other businesses had located near this focal transportation point, and as a result walled in the wholesale food facilities so that expansion was difficult.[1] Thus, any additional facilities that were needed were built in scattered locations throughout the city.

The 1954 survey revealed that the wholesale food business in the market district is being handled by 313 independent wholesalers, 5 packer branch houses, and 3 cold storage warehouses. Of the 313 independent wholesalers, 151 handle fruits and vegetables, 40 poultry and eggs, 28 seafoods, 73 meats, 8 butter and cheese, 10 dry groceries, and 3 frozen foods.

Many of the streets in the market district are narrow, some being only 30 feet wide. Dock Street, a short street on which many wholesalers are located, varies in width from about 70 to 100 feet. It is frequently a solid mass of motor vehicles. Figure 2 shows a typical scene on Dock Street during business hours. Since none of the wholesale stores on Dock Street has rail connections, all rail receipts sold there are carted from the railroad terminals or team tracks.

Railroad tracks run along Delaware Avenue, a 2-way thoroughfare about 100 feet wide. Rail cars and trucks carrying supplies to and from the area are intermingled with nonmarket traffic. Rail cars are unloaded into some stores from team tracks that are about 25 to 35 feet from store entrances. Portable meat rails, which sometimes are used for unloading meats, are set up from the stores to the rail cars, thus blocking traffic. Parking areas in the market district are practically nonexistent.

Sidewalks are cluttered with many food items, sometimes stacked but many times dumped or tumbled, along with debris of broken boxes, chicken coops, and egg crates. Figure 3 shows a familiar sidewalk scene in this area.

[1] For historical background of the Dock and Callowhill Streets market district see "The New Food Distribution Center," published October 27, 1954, by the Greater Philadelphia Movement, Philadelphia, Pa.

BN-4791

Figure 2.—Traffic congestion on Dock Street.

Many buildings used in food wholesaling are over a hundred years old. Usually they are 3 or 4 stories high, and lack proper elevator facilities for moving products between floors. The elevators often are too small and have too low a load capacity for the volume of business that is moved between floors. Most buildings lack front or rear platforms. The platforms that have been constructed are either too high or too low for the efficient loading and unloading of food supplies. In very few cases do the stores have rear entrances. As a result receiving and loading-out operations must be performed through one door. Figure 4 shows some buildings used by fruit and vegetable wholesalers on Dock Street, while figure 5 shows how foods are unloaded from the truck bed to a hand truck on the sidewalk.

The buildings contain little aisle space, and many lack adequate refrigerated facilities for handling large quantities of perishable foods. Many have wooden floors and lack automatic sprinkler systems. As a result the fire hazard is great, and insurance rates are high. The floors are structurally weak and have a low storage capacity. Many facilities have no public toilets and few washroom and restroom facilities for employees.

Some wholesalers have to conduct their operations in two or more buildings. Other handlers have renovated or rebuilt their facilities within the last few years, improving their operating efficiency. In many cases, however, the original design of the buildings was such that the objective could not be accomplished. A few wholesalers have built modern store buildings that permit a relatively high degree of operating efficiency. In only a few instances is parking space provided for customers. However, traffic congestion is a major problem confronting all wholesalers in this area regardless of the type of store building they occupy.

BN-4580

Figure 3.—A familiar sidewalk scene in the Dock and Callowhill Streets market district.

BALTIMORE AND OHIO–READING PRODUCE TERMINAL

The facilities of the Baltimore & Ohio-Reading Produce Terminal (fig. 6) were completed and put into operation in 1927. Located between Delaware and Weccacoe Avenues, the terminal is bounded by Jackson Street on the north and Ritner Street on the south. It covers 23 acres of land, and consists of 2 large buildings and a number of team tracks. Storage yards north of the buildings cover at least a block.

The buildings, running east and west, are long and narrow. The one to the south, known as the auction building, is 1,000 feet long and 90 feet wide, with concrete platforms 8 feet wide along each side; it has a capacity of 150 cars. It is 2 stories high for 136 feet at the east end and 1 story high for the remaining 864 feet. Except for offices of the railroad and the auction company printing plant, the entire first floor is available for the display and handling of produce sold at auction. The second floor contains the offices of the auction company and auction sales rooms. Several house tracks run parallel to the building. On the south side of the building is a paved driveway connecting Delaware and Weccacoe Avenues.

Parallel to the auction building and 68 feet north of it is the second building, 900 feet long and 90 feet wide, with concrete platforms 8 feet wide along each side. For 195 feet on the east end it is 8 stories high, the upper 7 of which are refrigerated and provide 1,300,000 cubic feet of refrigerated space. For the remaining 705 feet it is one story high. This building is also served by several house tracks, and on the north side is a paved driveway connecting Delaware and Weccacoe Avenues.

South of these buildings is a team-track yard. The tracks are arranged in pairs, with a platform and shelter provided for each pair. The platforms are used for the inspection and sampling of cars. Between the pairs of team tracks are paved driveways extending from Delaware to Weccacoe Avenues. The entire terminal is lighted by floodlights mounted on poles at convenient points on the buildings, and it is enclosed by an iron fence.

BN-4581

Figure 4.—Some buildings used by fruit and vegetable wholesalers on Dock Street.

PENNSYLVANIA RAILROAD PRODUCE TERMINAL

The Pennsylvania Railroad Produce Terminal also was completed and put into operation in 1927 (fig. 6). Located less than one-third of a mile south of the Baltimore & Ohio-Reading Produce Terminal, it occupies 41 acres south of Oregon Avenue and about 820 feet west of Delaware Avenue. The terminal consists of 3 buildings, each 800 feet long and 110 feet wide, and a number of team tracks.

The buildings, running north and south, have platforms 8 feet wide on each side. The one on the east side, known as the auction building or building "A," is 2 stories high at the north end and 1 story high at the south end. At the north end the first floor contains a restaurant, waiting room, washroom, etc. The remainder of the first floor is used for displaying and handling produce sold at auction. The second floor contains auction sales rooms, a restaurant, telegraph office, and telephone facilities.

Building "B," commonly known as the private sale building, is one story high except for a few feet at the north end, which the offices of the railroad occupy. The remainder of the building is used for the display, private sale, and handling of fruits and vegetables. This area is divided into two rooms. The first, toward the north end, occupies less than one-third of the floor space and is known as the "fruit room." The other, occupying more than half the entire building, is known as the "vegetable room."

Building "C" contains a cold storage warehouse at the north end, which is 250 feet long, 110 feet wide, and 8 stories high. The remaining 550 feet at the south end was constructed for use as a private sales room. All floors of the refrigerated warehouse except the first are equipped for cold storage purposes, and provide a total of 2,000,000 cubic feet of refrigerated and ventilated space. The first floor contains office space, a machinery room, and a receiving room for transferring perishable freight from railroad cars and trucks to the upper floors of the warehouse. In addition, there is a basement under the warehouse, which is used for dry storage.

Each building is served by house tracks on both sides, and between the buildings are paved drive-

BN-4582

Figure 5.—Unloading baskets of fresh produce from the truck bed to the sidewalk.

BN-4790

Figure 6.—The Baltimore and Ohio–Reading Produce Terminal (foreground) and the Pennsylvania Railroad Produce Terminal, Philadelphia, Pa.

ways. West of the buildings is the team-track yard, with the tracks arranged in pairs. For each pair there is a covered platform used for inspection and sampling purposes. Between the pairs of team tracks are paved driveways. The entire terminal is lighted by floodlights.

OTHER WHOLESALE FACILITIES

Although many wholesale handlers are located in the vicinity of the three market areas, many are scattered widely throughout the city. According to the 1954 survey, 161 independent wholesalers, 4 packer branch houses, 5 cold storage warehouses, 9 chainstore warehouses, and 2 stockyards operate outside these areas. The 161 independent wholesalers include 8 poultry and egg dealers, 67 meat dealers, 15 butter and cheese dealers, 30 dry grocery dealers, and 41 frozen food dealers.

Generally, wholesale handlers of all types located away from the congested downtown areas do not have any serious traffic problems. Others in the highly commercial areas are not as seriously affected by traffic congestion as the dealers in the market district; nevertheless their problem is serious enough to make their operations difficult.

The condition of the buildings occupied by the various types of wholesale handlers outside the market district varies considerably. Most dealers on the outskirts of the city occupy new and modern one-story structures with direct rail connections; wide platforms at truck-bed level; front and rear entrances; and sufficient refrigerated, dry storage, and temperature-controlled space for their operations—features which permit a high degree of efficiency in the utilization of labor and equipment. Others, commonly in the highly commercial downtown areas, occupy facilities similar to the outmoded, multiple-story structures typical of the market district. They lack rail connections and platforms. All incoming and outgoing food supplies must be moved through the front entrance. Free aisle space for the flow of supplies through the buildings is at a premium, and elevators are inadequate for the volume that must be moved from one floor to another. Then there is the intermediate group of facilities consisting of those that have been remodeled. Some of the buildings have been improved by the addition of platforms, by installation of refrigeration and other equipment, and in some cases by modifying the layout of the building in an attempt to bring about a smoother flow of food supplies or some other needed changes.

OWNERSHIP OF THESE FACILITIES

Information regarding the number of wholesalers owning or renting the buildings they occupy was obtained for only one group of food handlers—the independent wholesalers. The facilities and handling methods of this group are in the greatest need of improvement.

Of the 491 independent wholesalers, 221 who handled about 51,100 carlot equivalents in 1953 own the buildings in which they operate. The 17 fruit and vegetable carlot receivers operating on the produce terminals do not pay rent for the privilege of operating there. The remaining 253, with a volume in 1953 of 30,800 carlot equivalents, rent their buildings. Thus, of the 474 independent wholesalers who either own or rent their buildings, 47 percent are owners, and they handled 62 percent of the total volume of business transacted by this group in 1953. Table 9 shows the number of independent wholesalers owning and renting buildings and their estimated volume of business by type of commodity.

AMOUNT OF FLOOR SPACE IN THESE BUILDINGS

The total amount of floor space in buildings occupied by the 474 independent wholesalers who own or rent their buildings is about 4,602,000 square feet—the equivalent of 105 acres. Table 10 shows the amount of space on first floors separate from other floors, by type of commodity handled. For the commodity groups on which complete information was available, about half of the total space is first-floor space. The remaining space is in basements and on upper floors. Some buildings have as many as six floors. Upper floors cannot be used to the best advantage in a wholesale food distribution operation. About 15 percent of the space is wasted because of its inaccessibility. Some space in basements and on upper floors, although in use, cannot be used

TABLE 9.—*Number of independent wholesalers owning and renting buildings and their estimated volume of business, by type of commodity, Philadelphia, Pa., 1953* [1]

Type of commodity	Wholesalers owning buildings		Wholesalers renting buildings		All wholesalers	
	Number	Carlot equivalents handled	Number	Carlot equivalents handled	Number	Carlot equivalents handled
Fresh fruits and vegetables	23	5, 730	128	22, 920	[2] 151	[3] 28, 650
Poultry and eggs	36	3, 240	12	610	48	3, 850
Seafoods	6	185	22	1, 065	28	1, 250
Meats	95	23, 220	45	3, 205	140	[1] 26, 425
Butter and cheese	16	1, 185	7	440	23	1, 625
Dry groceries	31	15, 990	9	1, 210	40	17, 200
Frozen foods	14	1, 550	30	1, 350	44	2, 900
Total	221	51, 100	253	30, 800	474	81, 900

[1] The volume of business handled is based on direct receipts for all commodity groups except meats, the intramarket movement of which among some types of independent wholesalers (slaughterers, boners, and processors) was 4,760 carlot equivalents.

[2] 17 carlot receivers who operate exclusively on the produce terminals are not included.

[3] This volume includes 7,400 carlots trucked from the produce terminals to stores of independent wholesalers who do not have rail connections.

TABLE 10.—*Estimated amount of floor space in buildings occupied by 474 independent wholesalers, by type of commodity, Philadelphia, Pa., 1953*

Type of commodity	Number of wholesalers	First-floor space [1]		Upper floors and basement [2]		Total space	
		All wholesalers	Average per wholesaler	All wholesalers	Average per wholesaler	All wholesalers	Average per wholesaler
	Number	*Square feet*	*Square feet*	*Square feet*	*Square feet*	*Square feet*	*Square feet*
Fresh fruits and vegetables	[3] 151	270, 000	1, 788	100, 000	662	370, 000	2, 450
Poultry and eggs	48	63, 100	1, 315	153, 900	3, 206	217, 000	4, 521
Seafoods	28	[4]		[4]		60, 000	2, 143
Meats	140	835, 700	5, 969	1, 202, 300	8, 588	2, 038, 000	14, 557
Butter and cheese	23	110, 000	4, 783	130, 000	5, 652	240, 000	10, 435
Dry groceries	40	884, 000	22, 100	583, 000	14, 575	1, 467, 000	36, 675
Frozen foods	44	[4]		[4]		210, 000	4, 773
Total or average	474	[4]		[4]		4, 602, 000	9, 709

[1] Includes sidewalk space used for piling or displaying foods.

[2] Upper-floor space is on second, third, fourth, fifth, and sixth floors.

[3] The 17 carlot receivers operating on the produce terminals are not included.

[4] Data incomplete.

effectively because of irregular shapes of areas, low ceilings, weak or uneven floors, inadequacy of elevators, and the cost of moving products from one floor to another. These remote areas are more commonly used for dry storage. However, in some cases very essential operations are performed there, such as egg candling, poultry dressing, and butter printing and packaging.

An evaluation of the adequacy of the facilities being used by each of the 474 independent wholesalers indicates that 332 are operating under such conditions that they might have an economic justification for moving into a new facility. The others had adequate facilities and are not likely to be interested in moving at this time. Table 11 shows the amount of space occupied by those firms that appear to have some reason for being interested in new facilities.

Estimates of the amount of space in packer branch houses and chainstore warehouses were not obtained. However, the survey disclosed that eight of these firms might be interested in new facilities. Thus, a total of 340 wholesalers could be expected to move to new facilities.

The railroad produce terminals, not including the space used by cold storage warehouses, contain more than 400,000 square feet of space, only part of which is used for the handling of foods.

In addition, space used by many allied food dealers, such as wholesalers of coffee, spices, candy, and beverages, as well as that used by manufacturers' branch houses and restaurant commissaries was not estimated.

TABLE 11.—*Estimated amount of space in buildings occupied by 332 independent wholesalers who have economic justification for moving into new facilities, by type of commodity, Philadelphia, Pa., 1953*

Type of commodity	Number of wholesalers	Total space [1]	
		All wholesalers	Average per wholesaler
	Number	*Square feet*	*Square feet*
Fresh fruits and vegetables	[2] 116	370,000	2,450
Poultry and eggs	37	206,000	5,568
Seafoods	28	60,000	2,143
Meats	87	704,000	8,092
Butter and cheese	14	68,250	4,875
Dry groceries	28	843,850	30,138
Frozen foods	22	[3]	
Total or average	332	[4] 2,252,100	

[1] Includes sidewalk space used for piling or displaying foods.

[2] 35 of the 151 fresh fruit and vegetable dealers stated that they would retire or go out of business if the market were relocated. It is assumed that the remaining 116 dealers or new dealers would absorb their business, and therefore would occupy floor area equivalent to the amount of space occupied by the 151 dealers.

[3] Data not comparable.

[4] Does not include space used by frozen food wholesalers.

PRINCIPAL INADEQUACIES OF FACILITIES AND OPERATIONS

The analysis of wholesale food handling facilities in Philadelphia revealed that many wholesalers are operating in facilities that make operating costs excessive and prevent efficient handling of food. The inadequacies do not apply equally to every wholesaler, but they are prevalent among handlers of all types of commodities covered in the survey. The most important failings of the food handling system can be grouped into six categories: (1) Inadequate buildings, (2) lack of direct rail connections, (3) traffic congestion, (4) split operations, (5) unregulated operating hours, and (6) inadequate sanitation.

INADEQUATE BUILDINGS

Many wholesalers are using multistory structures of antiquated design with inadequate aisle space, poorly located elevators, structurally weak floors, no front or rear loading platforms, and little mechanical handling equipment. A large number of dealers do not have sufficient space to accommodate the volume of foods they are handling. Refrigeration facilities are often inadequate, and high spoilage occurs. In many instances a single entrance serves for both receiving and loading out, impeding the flow of supplies. Many stores can be reached only by moving products manually over sidewalks, and up and down congested streets.

LACK OF DIRECT RAIL CONNECTIONS

Many dealers occupy facilities that lack rail connections. Food shipped in by rail must be carted from the tracks to the stores for distances varying from a few hundred feet to several miles. This cartage is costly. It could be greatly reduced if all stores occupied by wholesalers who receive products by rail had rail spurs to their buildings.

TRAFFIC CONGESTION

Traffic congestion in and around the Dock and Callowhill Streets market district has been acute for many years. Trucks are often delayed in reaching the wholesale houses, buyers cannot find parking space, and hundreds have discontinued visiting the wholesalers' stores because of the impossible traffic situation. These condi-

tions greatly increase the cost of handling food, and result in deterioration of products. Under present circumstances little can be done to improve traffic congestion within the area.

SPLIT OPERATIONS

The scattering of the wholesale business over the city makes buying and selling difficult and costly. Even within one commodity group, such as fresh fruits and vegetables, rail receipts are handled in two different areas, while most of the supplies arriving by truck are unloaded at a market district about 2 miles away. Buyers must go to many areas in search of the products they need because few wholesalers carry a complete line. It is not unusual for a buyer to require the better part of a day to obtain his supplies.

Split operations not only are costly to buyers but also increase the operating costs of wholesalers, many of whom must operate in two or more facilities, keeping a staff in each place. Intramarket movement is costly. With products handled in several distinct areas within the city, it is difficult for either buyers or sellers to obtain accurate information on prices and supplies, and the whole situation discourages rather than attracts the buyers.

UNREGULATED OPERATING HOURS

Hours for buying and selling are not well regulated. For the most part each wholesaler fixes his own work day although many attempt to adhere to an 8-hour schedule. The exception is the Dock and Callowhill Streets market area, where operating hours in the fresh fruit and vegetable stores are from 6 p. m. until 12 noon, or 18 hours daily. Under such conditions labor cannot operate efficiently. Large groups of casual workers who loiter in the area on the chance of a few hours' employment create a social and economic problem for the city. The lack of coordination among areas in establishing scheduled hours of selling makes it impossible for buyers to arrive at the market when a full selection of the best produce is available. Prolonged selling hours also tend to produce wide price fluctuations during the day for some types of products.

INADEQUATE SANITATION

Many buildings in the Dock and Callowhill Streets area are without hot or cold water for proper cleaning. Public toilet facilities and washrooms are lacking. Streets are often littered with decaying food. Stacks of food items piled high on sidewalks are exposed to the weather, dust, and germs.

SOME MARKETING COSTS IN THE PRESENT FACILITIES

The deficiencies of the present distribution system in Philadelphia make food wholesaling an expensive business to operate. Because of the inadequacies many distribution costs are high. Some of them which can be measured with reasonable accuracy are: (1) cartage; (2) porterage; (3) handling within buildings; (4) spoilage, deterioration, breakage, and shrinkage; and (5) rentals. It should be emphasized that these costs are not the total cost of marketing food supplies, but are only some of the measurable marketing costs that would be affected by the development of a new food center.

The discussions of these costs which follow are based on the volume of business handled by wholesalers who are operating under such conditions that they should be interested in moving to a new food center. These include 340 wholesalers, who handled 68,530 carlots of food supplies in 1953 (table 12).

TABLE 12.—*Volume handled by 340 wholesalers for whom selected marketing costs are estimated, by type of commodity, Philadelphia, Pa., 1953*

Type of commodity	Number of wholesalers	Carlot equivalents handled
Fresh fruits and vegetables	116	28, 650
Poultry and eggs	37	[1] 3, 840
Seafoods	28	1, 250
Meats and meat products	92	[2] 18, 000
Butter and cheese	16	1, 600
Dry groceries	29	11, 830
Frozen foods	22	3, 360
Total	340	68, 530

[1] Includes 430 carlot equivalents of poultry and eggs handled by 5 meat packers.
[2] Includes 3,500 carlot equivalents of intramarket movement.

CARTAGE TO WHOLESALE STORES

The term "cartage," as used in this report, includes the unloading of products from a railroad car onto a motortruck at the team track, transporting the load to the wholesaler's store, and unloading it into the store at the first-floor level. It may also include the loading of a truck at one wholesaler's store, transporting it to another wholesaler's store, and unloading it onto the sidewalk or store platform or into the store at the first-floor level, but it does not include the carting of products from the wholesale establishment to retail store or other outlets.

It was estimated that in 1953 cartage, as thus defined, was incurred on 17,765 carlot equivalents of the 7 types of commodities studied at a total

cost of $1,194,368, or an average of $67.25 per car (table 13).

TABLE 13.—*Estimated cost of cartage incurred by 340 wholesalers, by type of commodity, Philadelphia, Pa., 1953*

Type of commodity	Volume incurring cartage	Average cost per carlot	Total cost
	Carlot equivalents	*Dollars*	*Dollars*
Fresh fruits and vegetables	7, 400	83. 90	620, 860
Poultry and eggs	0	0	
Seafoods	25	50. 00	1, 250
Meats and meat products	[1] 6, 000	50. 00	300, 000
Butter and cheese	1, 200	60. 00	72, 000
Dry groceries	1, 530	60. 70	92, 871
Frozen foods	1, 610	66. 70	107, 387
Total or average	17, 765	67. 25	1, 194, 368

[1] Includes 3,500 carlot equivalents of intramarket movement and 2,500 carlots carted from team tracks to stores.

PORTERAGE

The term "porterage" applies to the unloading of supplies from a truck or rail car onto the platform or first floor of a wholesale store, and loading out supplies from the first floor or platform of a wholesale store onto a truck for hauling them away. This cost does not cover any volume on which cartage cost may have included the porterage.

It was estimated that in 1953 porterage was incurred on the 68,530 carlot equivalents, some of which incurred such costs more than once, at a total cost of $1,902,432, or an average of $15.29 per carlot handled (table 14).

EXCESSIVE HANDLING WITHIN BUILDINGS

"Handling within buildings" covers all the moving of commodities within stores from the point at which they are first put down to a point from which they are loaded onto a truck for hauling away. The cost of excessive handling within buildings is the cost incurred from the extra handling resulting from poorly designed, inadequate, and inefficient internal arrangements, such as moving commodities between floors, frequently in elevators of inadequate size; moving them from one point to another; out-of-line and cross-flow of commodities; working the product in makeshift work space; and using hand labor for many operations that could be performed in less time with mechanical equipment. The cost of excessive handling per carlot varies widely by commodities and by type of facilities used. The individuals conducting the survey in Philadelphia, with the aid of the wholesalers whose operations were being studied, arrived at estimates of the cost of excess handling from such causes as the ones listed above (table 15).

TABLE 14.—*Estimated cost of porterage incurred by 340 wholesalers, by type of commodity, Philadelphia, Pa., 1953*

Type of commodity	Volume incurring porterage	Average cost per carlot handled [1]	Total cost
	Carlot equivalents	*Dollars*	*Dollars*
Fresh fruits and vegetables	49, 900	15. 30	763, 470
Poultry and eggs	7, 680	22. 70	174, 336
Seafoods	2, 475	15. 00	37, 125
Meats and meat products	33, 500	12. 50	418, 750
Butter and cheese	2, 000	15. 90	31, 800
Dry groceries	22, 130	13. 90	307, 607
Frozen foods	[2] 6, 720	25. 20	169, 344
Total or average	124, 405	15. 29	1, 902, 432

[1] Each carlot of products passing through a merchant's store is handled twice, both at unloading and loading. These figures are the average porterage cost for inbound and outbound operations.

[2] The 1,610 carlots on which cartage cost was incurred are included. These carlots were unloaded from railroad cars into public cold storage warehouses and were later moved to the stores of wholesalers as needed.

TABLE 15.—*Estimated cost of excessive handling within buildings of 340 wholesalers, by type of commodity, Philadelphia, Pa., 1953*

Type of commodity	Volume handled	Average cost per carlot	Total cost
	Carlot equivalents	*Dollars*	*Dollars*
Fresh fruits and vegetables	28, 650	5. 00	143, 250
Poultry and eggs	3, 840	3. 00	11, 520
Seafoods	1, 250	4. 00	5, 000
Meats and meat products	18, 000	15. 00	270, 000
Butter and cheese	1, 600	10. 00	16, 000
Dry groceries	11, 830	30. 00	354, 900
Frozen foods	3, 360	40. 00	134, 400
Total or average	68, 530	13. 64	935, 070

SPOILAGE, DETERIORATION, BREAKAGE, AND SHRINKAGE

Spoilage, deterioration, breakage, and shrinkage losses are calculated for only four types of commodities—fruits and vegetables, poultry and eggs, seafoods, and meats. Such losses for other types of commodities studied were insignificant.

The total losses suffered by the 340 wholesalers from these causes on 51,740 carlot equivalents in 1953 were estimated to be $3,456,294 (table 16).

TABLE 16.—*Estimated losses from spoilage, deterioration, breakage, and shrinkage, by type of commodity, for 340 wholesalers, Philadelphia, Pa., 1953*

Type of commodity	Volume handled	Total wholesale value	Rate of loss	Total loss
	Carlot equivalents	*Dollars*	*Percent*	*Dollars*
Fresh fruits and vegetables	28, 650	[1] 55, 867, 500	2	1, 117, 350
Poultry and eggs	3, 840	[2] 27, 318, 400	1	273, 184
Seafoods	1, 250	[3] 20, 000, 000	1	200, 000
Meats and meat products	18, 000	[4] 186, 576, 000	1	1, 865, 760
Butter and cheese [5]				
Dry groceries [5]				
Frozen foods [5]				
Total or average	51, 740	289, 761, 900	1. 2	3, 456, 294

[1] Figured on the basis of an average wholesale value of $1,950 per carlot equivalent.

[2] Figured on the basis of an average wholesale value for eggs of $16.20 per case, 400 cases per carlot, or a total of $6,480 per carlot for 1,390 carlots; live poultry, 29 cents a pound, 16,000 pounds per carlot, or a total of $4,640 per carlot for 1,130 carlots; and dressed poultry, 33 cents a pound, 30,000 pounds per carlot, or a total of $9,900 per carlot for 1,320 carlots.

[3] Figured on the basis of an average wholesale value of 40 cents per pound, 40,000 pounds per carlot, or a total value of $16,000 per carlot.

[4] Figured on the basis of an average wholesale value of 43 cents per pound, 24,000 pounds per carlot, or a total value of $10,320 per carlot.

[5] Losses were insignificant.

These estimates are based on the best judgment of the wholesalers themselves and of the specialists who conducted the study.

RENTALS

The total rental value of facilities owned or rented by the 332 independent wholesalers in 1953 is estimated at $1,837,000 (table 17). Estimates of rental values on the facilities owned and occupied by a total of eight packer branch houses, national dairy product handlers, and chainstore organizations were not available.

TABLE 17.—*Estimated rental value of facilities occupied by 332 independent wholesalers, by type of commodity, Philadelphia, Pa., 1953*

Type of commodity	Number of wholesalers	Total rental value
Fresh fruits and vegetables	116	$490, 000
Poultry and eggs	37	78, 200
Seafoods	28	79, 000
Meats and meat products	87	540, 000
Butter and cheese	14	64, 300
Dry groceries	28	395, 000
Frozen foods	22	190, 500
Total	332	1, 837, 000

SUMMARY OF SELECTED MARKETING COSTS AFFECTED BY FACILITIES USED

The total measurable marketing costs in 1953 that would be greatly affected by improvements in marketing facilities for those wholesalers who should be interested in better facilities are estimated at more than 9 million dollars for all types of commodities handled (table 18).

OTHER MARKETING COSTS

Many other marketing costs that cannot be measured so readily would be affected by the development of a new food center. One of the largest costs is the loss of time incurred by local and out-of-town buyers and sellers traveling through heavy traffic to and from the market places. Delays, particularly in the old market districts, often are in excess of an hour. When these vehicles finally reach the market establishment, there is additional delay in finding parking space. Information obtained from various sources shows that the cost of operating a truck with only one man on it is about $9 per hour. If it is assumed that 1,000 trucks are involved daily in these delays of an average of 1 hour per vehicle, or 2,000 trucks for an average of one-half hour (which are conservative figures), on the basis of a 5-day work week the cost in loss of time incurred by these vehicles amounts to nearly 2½ million dollars annually.

Another costly item to buyers and sellers is the cost of doing business in scattered facilities. Buyers frequently have to go to two or more places to obtain the products they need. Many times they travel several miles before they are able to complete their purchases, and sellers sometimes have to go to more than one place before they can complete their sales. Some wholesalers who must carry on their businesses in two or more places must keep sales forces at all their establishments. Thus, the total costs

to these groups due to scattered facilities runs into a large sum.

The long selling hours in an unregulated market are time-consuming for buyers, sellers, and employees. Buyers do not know what time of day to be at the markets to obtain the best selection of merchandise.

Because of the existing conditions in the present facilities buyers and sellers cannot obtain accurate information on prices and supplies. This lack of knowledge results in wide fluctuations in prices for certain commodities at any given time. Farmers, wholesalers, retailers, and consumers all pay the cost of inadequate price-making forces.

The city itself also bears some costs resulting from the inefficiencies of the present wholesale distribution system. The costs incurred in connection with the maintenance of streets in the heavily congested traffic areas, policing in and around the market areas, and enforcing sanitation measures and fire regulations are sizable sums.

In addition, another important cost that cannot be determined but which must not be overlooked is the amount of business lost by the Philadelphia wholesalers because of these conditions.

TABLE 18.—*Summary of selected marketing costs that would be affected by the development of a new food center for 340 wholesalers, by type of commodity, Philadelphia, Pa., 1953*

Type of commodity	Cartage	Porterage	Cost of excessive handling within buildings [1]	Loss from spoilage, deterioration, shrinkage, or breakage	Rentals [2]	Total
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Fresh fruits and vegetables	620, 860	763, 470	143, 250	1, 117, 350	490, 000	3, 134, 930
Poultry and eggs	0	174, 336	11, 520	273, 184	78, 200	537, 240
Seafoods	1, 250	37, 125	5, 000	200, 000	79, 000	322, 375
Meats and meat products	300, 000	418, 750	270, 000	1, 865, 760	540, 000	3, 394, 510
Butter and cheese	72, 000	31, 800	16, 000	[3]	64, 300	184, 100
Dry groceries	92, 871	307, 607	354, 900	[3]	395, 000	1, 150, 378
Frozen foods	107, 387	169, 344	134, 400	[3]	190, 500	601, 631
Total	1, 194, 368	1, 902, 432	935, 070	3, 456, 294	1, 837, 000	9, 325, 164

[1] These figures represent the costs of only what was considered to be excessive handling within buildings—not the total cost of handling within buildings.

[2] Rental values of buildings occupied by 8 wholesale handling organizations were not available; these figures apply to a total of 332 independent wholesalers.

[3] These losses were insignificant.

NEED FOR A MODERN FOOD DISTRIBUTION CENTER

Wholesale food markets, unlike many other types of businesses, tend to settle down in one area. As stated previously, trading in the Dock and Callowhill Streets market district began as early as 1693, and has been carried on there almost continuously for over 260 years. The area is obsolete as a place to receive and distribute food supplies with the efficiency and at the reasonable cost required by the present marketing system. The majority of the facilities were built to meet the needs of another age. The distribution of agricultural commodities has changed from direct sales from producer to consumer to sales through wholesalers and retailers. The population of the city and surrounding area has increased manyfold. Railroads and trucks have been invented. Eating habits have undergone great change. With few exceptions, these tremendous changes have not been accompanied by comparable expansion of the wholesale distributing facilities.

Some wholesale distributors have attempted to solve their problems by building new stores outside the market area, but these are mostly firms that take orders and deliver and those who own their retail outlets. For the majority of the food handlers such individual action is not the answer.

Philadelphia needs a new wholesale food center in which all types of foods may be unloaded from railroad cars and trucks directly into efficient buildings, constructed to meet modern needs. These buildings should be designed to permit the use of proper handling equipment for moving products into, within, and out of them. They should be large enough for a dealer to handle all his supplies in one building, with space for both refrigerated and common storage and for any necessary processing. Buildings should have front and rear entrances so that rail receipts can be unloaded on one side and truck receipts on the other. Streets between the buildings should be wide so that trucks can back up to the platforms and still leave sufficient room in the center for traffic to move freely. The new food center

should have parking areas for thousands of trucks and automobiles.

In such a center buyers should be able to obtain quickly the complete line of foods handled in retail grocery stores. Independent retailers who must obtain their products from the central market place are especially in need of a more efficient source of supply. From such a center arterial streets should radiate to all parts of the city and the surrounding territory. Offices, banks, restaurants, and other facilities needed by the food industry should be provided.

In planning a food center, provision should be made for independent wholesalers of all types of foods, chainstore warehouses, packer branch houses, processors, manufacturers' branch houses, and all other segments of the wholesale food industry that may desire to locate in it. Here these firms could operate with utmost efficiency. Railroads and trucks could serve the food industry with greater ease and less expense. Out-of-town buyers in the fast-growing surrounding area would find Philadelphia a desirable place to buy food instead of a market to be avoided. The provision of such a center would ease or solve a number of the problems facing the city government involving traffic, sanitation, fire regulation, and law violations. The kind of food district needed can be provided only by concerted action. It can be developed economically only by making a new start, in a new location where there is sufficient land for immediate needs and also for expansion in the years ahead. It is desirable to have a location easily accessible to all types of buyers, one that can be served by all types of transportation used in bringing food supplies to the warehouses, and one in which the cost of the land is not excessive.

There are many reasons why some food wholesalers need to be located adjacent to one another in a food center. Such an arrangement makes it easier for buyers to obtain a complete line of food; facilitates transactions among wholesalers; makes it possible for distributors to split cars; and makes it easier to provide facilities used by all types of dealers, such as public warehouses, parking areas, railroad service, and general office buildings for serving businesses having contacts with food distributors.

In spite of the great need for a complete wholesale food distribution center in Philadelphia, certain factors may tend to retard its development. First, some wholesalers are interested in a new market only if a substantial portion of the wholesale food business within their own commodity group can be brought together into it. Second, some wholesalers in practically all types of businesses are located in new or comparatively new and modern facilities. To them, the advantages of moving into a food center would be few. Third, a large number of wholesalers who own their facilities are reluctant to dispose of their property, in spite of its inadequacies.

The first factor is much more important in some commodity groups than in others. To illustrate, fresh fruit and vegetable handlers tend to centralize their activities because most of their sales are made to buyers who come to the market. To relocate only a portion of them in a modern food center would further split the operations, and undoubtedly would create a bad situation from a price-making standpoint and make it necessary for buyers to go to still another area. To a lesser degree, a similar situation would exist in the poultry and egg and seafood businesses. The success of the frozen food business in the food center would depend to great extent on the group movement of a large number of wholesalers at one time. However, food wholesalers who have an order-delivery type of business can move individually or in small groups.

Meat wholesalers tend to cling together. However, several operators scattered throughout the city, particularly in the processing and slaughtering groups, have shown that they can operate independently of the major portion of the market. Therefore, a further split in the meat business would not affect it as adversely as a split in the operations of fruit and vegetable wholesalers. There are indications that some meat handlers in the Dock and Callowhill Streets market district expect to relocate anyway. Consequently, the development of a food center may provide the opportunity to centralize the meat industry eventually. The butter and cheese and the dry grocery wholesalers are scattered widely throughout the city. Thus, it would be easy for individual firms to move into a new area when they need new facilities.

Wholesalers of all kinds are continually renovating old facilities or building new ones. These wholesalers hardly can be expected to be in a position to move into a new area simultaneously. Some wholesalers, while grasping the significance of the development of a new food center, have adopted a "wait-and-see" attitude. Thus, their ultimate decision, as well as that of many other large firms in allied businesses, probably would be determined by what a proposed food distribution center would offer them.

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Five principles basic to the development of plans for a new food distribution center are: (1) suitability of design of buildings, (2) proper arrangement or grouping of facilities, (3) completeness for both present needs and possible future expansion, (4) location, and (5) cost.

The kind and amount of facilities planned for initial construction in the food center are based on the estimated volume of business handled by the 340 wholesalers who are operating under such conditions that they should be interested in moving to the food center. As stated previously, these 340 wholesalers handled about 68,530 carlot equivalents of food supplies in 1953. Their operations are such that it is desirable to provide two types of buildings for them: (1) multiple-store units, in which stores for several firms are contained in one building, and (2) detached buildings, each containing space for only one wholesaler. In general, wholesalers with fairly large volumes of business and those requiring special features are placed in detached buildings. Table 19 shows the number of wholesalers who would occupy the two types of facilities and their estimated volume of business.

The number of wholesalers and the volume of business that actually would go into the food distribution center should be determined by the number of responsible wholesalers who would lease or construct buildings in it. Therefore, the number of facilities actually constructed may vary from the number on which this plan is based.

In the sections below describing the stores proposed for wholesalers handling various types of commodities, certain store specifications are repeated in order to make each section complete. Illustrations are given for the purpose of showing possible arrangements in which some wholesalers are currently interested. However, there is a great deal yet to be known about what are the most suitable internal arrangements of standard store units for handling the various commodity groups. Wholesalers themselves have varying thoughts on the matter. Each wholesaler, therefore, should develop a layout to fit his own personal needs.

FRUIT AND VEGETABLE STORES

The fruit and vegetable wholesalers would require 120 multiple-store units to handle the 1953 volume of 28,650 carlots. This volume represents the volume of the 151 wholesalers in the Dock and Callowhill Streets market district. Detached buildings are not recommended for any of the fruit and vegetable wholesalers.

In the proposed plan the 120 store units are provided in 6 buildings, each containing 20 units. Each unit is 22½ feet wide, 60 feet deep, and 18 feet high from the main floor to the ceiling. A 24-foot covered platform at the front and a 12-foot covered platform at the rear make the overall depth 96 feet (fig. 7). Thus, the dimensions of each building are 96 by 450 feet. The roof over the front platform extends beyond the platform for protection during loading and unloading. It may be desirable to provide a 15-foot platform at the rear rather than a 12-foot one. This would increase the depth of the building by 3 feet. In some markets the greater platform width facilitates 2-way traffic along the platform. Slight deviation in the width and depth of the store units would not be objectionable if preferred by the tenants.

TABLE 19.—*Number of wholesalers who might initially occupy multiple-store units and detached stores in a new food distribution center and their estimated volume of business, by type of commodity, Philadelphia, Pa.*[1]

Type of Commodity	Multiple-store units		Detached buildings		Total	
	Number of wholesalers	Carlot equivalents handled	Number of wholesalers	Carlot equivalents handled	Number of wholesalers	Carlot equivalents handled
Fresh fruits and vegetables	116	[2] 28, 650	0	0	116	[2] 28, 650
Poultry and eggs	37	3, 410	[3] 5	430	37	3, 840
Seafoods	28	1, 250	0	0	28	1, 250
Meats	70	7, 500	22	10, 500	92	18, 000
Butter and cheese	14	950	[3] 7	650	16	1, 600
Dry groceries	23	3, 510	6	8, 320	29	11, 830
Frozen foods	22	3, 360	0	0	22	3, 360
Total	310	48, 630	30	19, 900	340	68, 530

[1] Volume of business is based on that handled by the 340 wholesalers in 1953.

[2] This volume represents the volume of the 151 fruit and vegetable wholesalers in the Dock and Callowhill Streets market district although facilities are planned for only 116 handlers. The other 35 dealers stated they would retire or go out of business if the market were relocated.

[3] Five wholesalers within these groups are meat dealers who also handle poultry and eggs or butter and cheese.

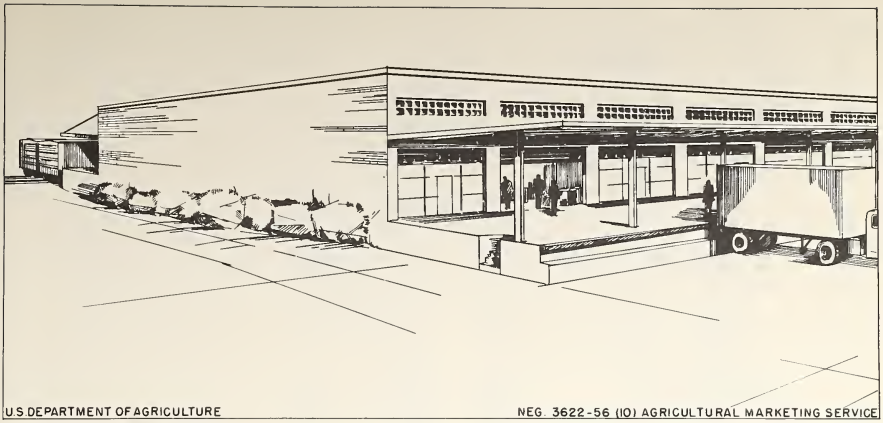

Figure 7.—A design for the proposed wholesale fruit and vegetable buildings.

The design provides continuous platforms and floors on the same level. The front platforms are at truck-bed height, or about 45 inches high, while the rear platforms are at refrigerator car-floor level, or about 55 inches high. A wooden bumper 6 inches by 8 inches should be bolted to the top edge of the front platforms to protect them from damage by trucks backing up to them. A continuous step 22 inches high along the front platform accommodates small trucks and pedestrians. Front door openings are 18 to 20 feet wide, and rear door openings, 8 feet. A floor plan for this type of store is shown in figure 8.

Individual wholesalers may wish to lease two or more units as required for their operations, so removable partitions with as few posts as possible should be used. All units in the plan contain mezzanine offices 15 feet deep by 22½ feet wide. These offices are at the rear of the store, with windows at the front, to provide a view of the sales floor without occupying valuable space on the main floor. To allow for the construction of mezzanine offices, and to provide adequate space underneath for walk-in coolers or ripening rooms, the height of the ceiling should be 18 feet above the main floor. All floors and platforms on the first-floor level should be concrete with a nonskid surface. Because of variations in the requirements of individual wholesalers, each should equip his store with the necessary refrigeration.

Each store unit of the above dimensions contains 1,350 square feet of first-floor enclosed space, 337½ square feet of mezzanine space, and 810 square feet of platform space, or a total of 2,497½ square feet. The 120 units for the fruit and vegetable wholesalers provide 162,000 square feet of first-floor enclosed space, 40,500 square feet of mezzanine space, and 97,200 square feet of platform space, or a total of 299,700 square feet. This amount of space is 19 percent less than the 370,000 square feet now used by the 151 dealers, much of which is badly laid out and therefore cannot be used efficiently, but with the present volume of business would provide one unit for each 238 carloads handled per year.

Store units of the same design are suggested for all types of fruit and vegetable wholesalers. For certain specialized types of fruit and vegetable businesses, however, the layout should be modified. Figure 9 shows a layout for the handling of bananas in standard units.[2] This layout, covering three units, is planned for a volume of 300 carlots annually. It is based upon a 6-day ripening period, and contains 6 paneled ripening rooms 10 feet 11 inches wide by 27 feet 11 inches long and 8 feet high. The capacity of each room is about 365 stems, or 1 carlot equivalent. Ripening rooms cover about one-half the total enclosed first-floor area, while the other half is planned for the cutting, packaging, and shipping operations. As a general rule, this ratio makes possible the best flow of the produce through the units. The suggested layout permits the unloading of bananas from the rail car directly into the ripening rooms, and a straight-line flow from the ripening rooms directly to the cutting, packing, and shipping room, with comparatively short distances between operations. Space above the ripening rooms can be used for offices and the storage of cartons and other items.

When the space requirements of the tenants in the fruit and vegetable section are known, consideration might be given to grouping into one

[2] No data are available on layouts for tomato repackers operating in standard units. However, a study is underway of methods, equipment, and facilities for handling tomatoes.

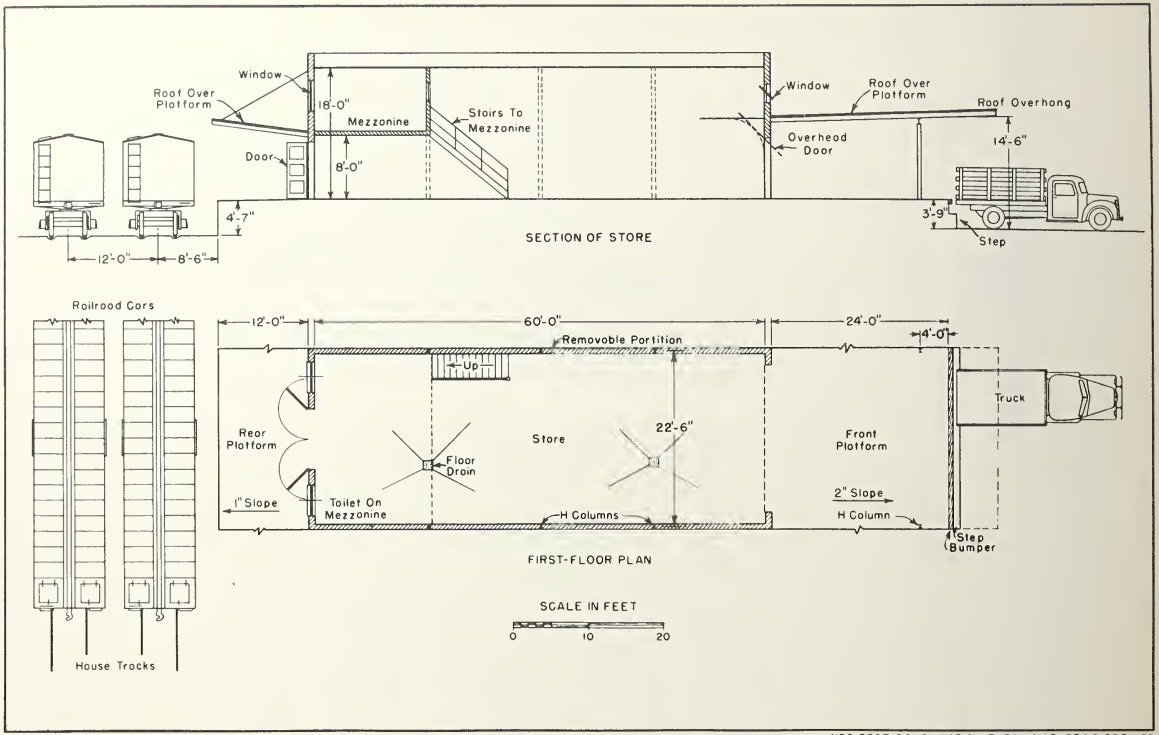

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Figure 8.—Possible floor plan for a wholesale fruit and vegetable store.

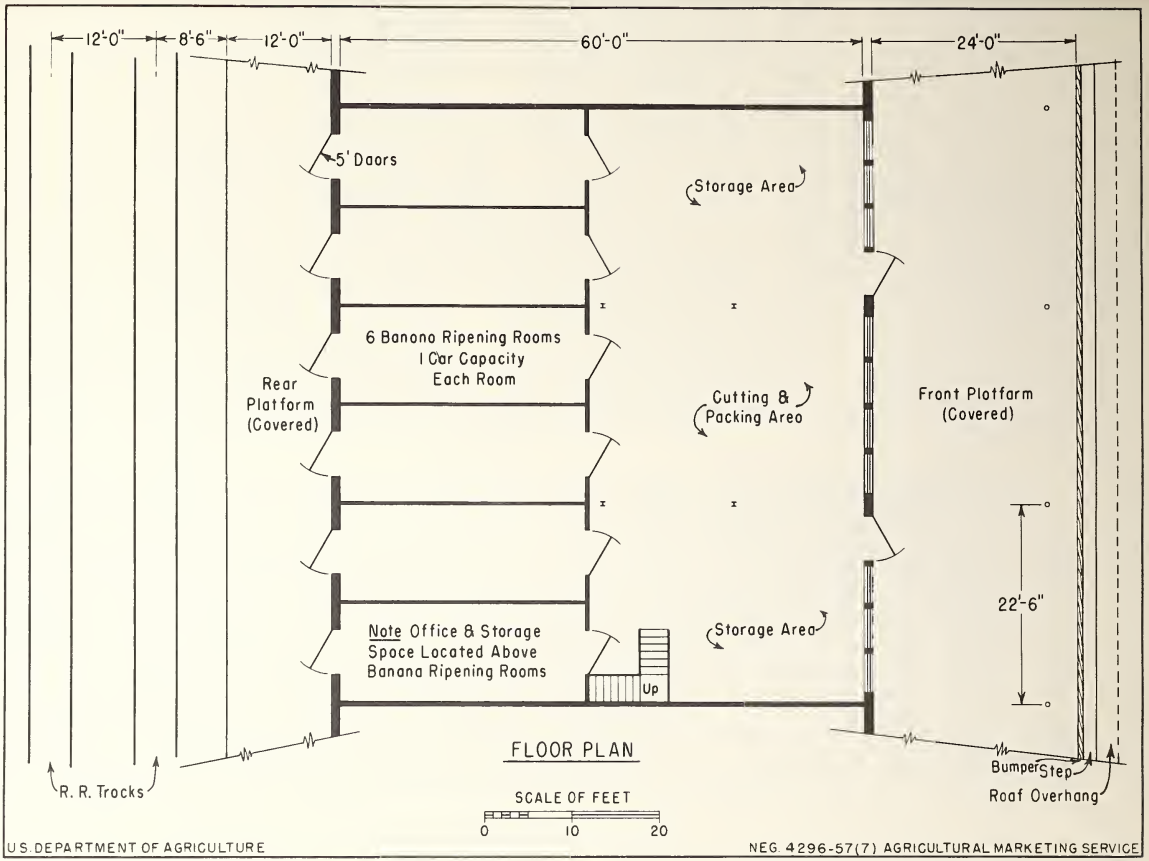

Figure 9.—Possible layout, covering three standard store units, for the handling of bananas.

building the banana wholesalers, prepackagers, and other dealers who may do various kinds of processing.

POULTRY AND EGG STORES

Thirty-five multiple-store units are proposed for the 37 poultry and egg wholesalers—20 units in one building for live-poultry dealers and 15 in another building for dressed-poultry and egg dealers. Since the buildings for these two types of operators are the same, the space for one can easily be adapted for the other. These dealers handled 3,410 carlots in 1953. In addition, 430 carlots were handled by 5 meat packers, for whom detached buildings are recommended.

Each unit in the multiple-store buildings is 22½ feet wide, 70 feet deep, and 18 feet high from the main floor to the ceiling. A 14-foot covered platform with roof overhang at the front and a 12-foot covered platform at the rear give an overall depth of 96 feet. Thus, the dimensions of the live-poultry buildings are 96 feet by 450 feet, and those of the dressed-poultry and egg building 96 feet by 337½ feet. It would be desirable to have the poultry and egg stores a little wider than shown here, but this width is proposed to hold down the cost per unit and to make the store units interchangeable with those of other nearby operators. This interchangeability is of some importance in view of the decline in the volume of live poultry moving to city wholesale markets.

The design for these stores provides continuous platforms and floors on the same level. Since the poultry and egg wholesalers do not receive any appreciable amount of their supplies by rail, both front and rear platforms are 45 inches high for receiving and shipping by motortruck. Both platforms are protected from damage by trucks by bolting a bumper 6 inches by 8 inches to the top edge of the platforms. A continuous step 22 inches high is provided along the front platform to accommodate small trucks and pedestrians. Door openings at the front are 6 feet wide, and at the rear two 8-foot doors for each unit give as much ventilation as possible in the poultry processing operation and facilitate the receiving and shipping operations. The floor plan for this type of store is shown in figure 10.

Removable partitions are used between units so that individual dealers may lease two or more units as required for their volume of business. All units in the plan contain mezzanine offices 15 feet deep by 22½ feet wide. These offices are at the rear of the store, with windows at the front, to provide a view of the sales floor. To allow for mezzanine offices and adequate space underneath for storing products, the ceiling is placed 18 feet above the main floor. All floors and platforms on the first-floor level should be concrete with a nonskid surface. The wholesalers should provide special equipment, such as cooler and freezer space, poultry dressing equipment, scales, etc., to meet their individual needs.

Each store unit contains 1,575 square feet of first-floor enclosed space, 337½ square feet of mezzanine space, and 585 square feet of platform space, or a total of 2,497½ square feet per unit. The 35 units for the 37 wholesalers provide 55,125 square feet of first-floor space, 11,812½ square feet of mezzanine space, and 20,475 square feet of platform space, or a total of 87,412½ square feet. The amount of space used by the 37 dealers at present is 206,000 square feet—almost 2½ times the amount of space recommended—but much of the present space cannot be used efficiently.

SEAFOOD STORES

Twenty units in one building are suggested for the 28 seafood wholesalers, who handled 1,250 carlots in 1953. None of these dealers need a detached store.

Store units planned for the seafood dealers are identical with those suggested for the fruit and vegetable wholesalers, with the exception that the rear platforms as well as the front platforms are 45 inches high since most of the seafoods arrive by truck (fig. 8). Dealers will presumably provide any specialized equipment that they need. The 20 units contain 27,000 square feet of enclosed first-floor space, 6,750 square feet of mezzanine space, and 16,200 square feet of platform space, or a total of 49,950 square feet. The amount of space now used by them is 60,000 square feet, some of which is wasted.

MEAT STORES

Ninety-five multiple-store units are suggested for 70 meat wholesalers who handled approximately 7,500 carlots in 1953, and 22 detached buildings for 22 wholesalers who handled about 10,500 carlots. Multiple-store units are primarily for boners, hotel suppliers, and the smaller general wholesalers. The detached buildings are for processors or larger wholesale firms handling several meat products, sometimes in combination with other foods.

In the proposed plan the 95 multiple-store units are provided in 5 buildings—4 of 20 units each and 1 of 15 units. These buildings have one and a half stories (fig. 11). The main floor of each unit is 25 feet wide, 60 feet deep, and 11 feet high from the floor to the ceiling. A 14-foot covered platform with overhanging roof at the front and a 12-foot covered platform at the rear make the overall depth 86 feet. The half-story second-floor level is 25 feet wide, 40 feet deep, and 8 feet high from the floor to the ceiling, all of which is enclosed space.

Some consideration should be given before the final plans are drawn up to putting in a full second-floor level instead of only a half story, which would add about 5 percent to the cost of construction.

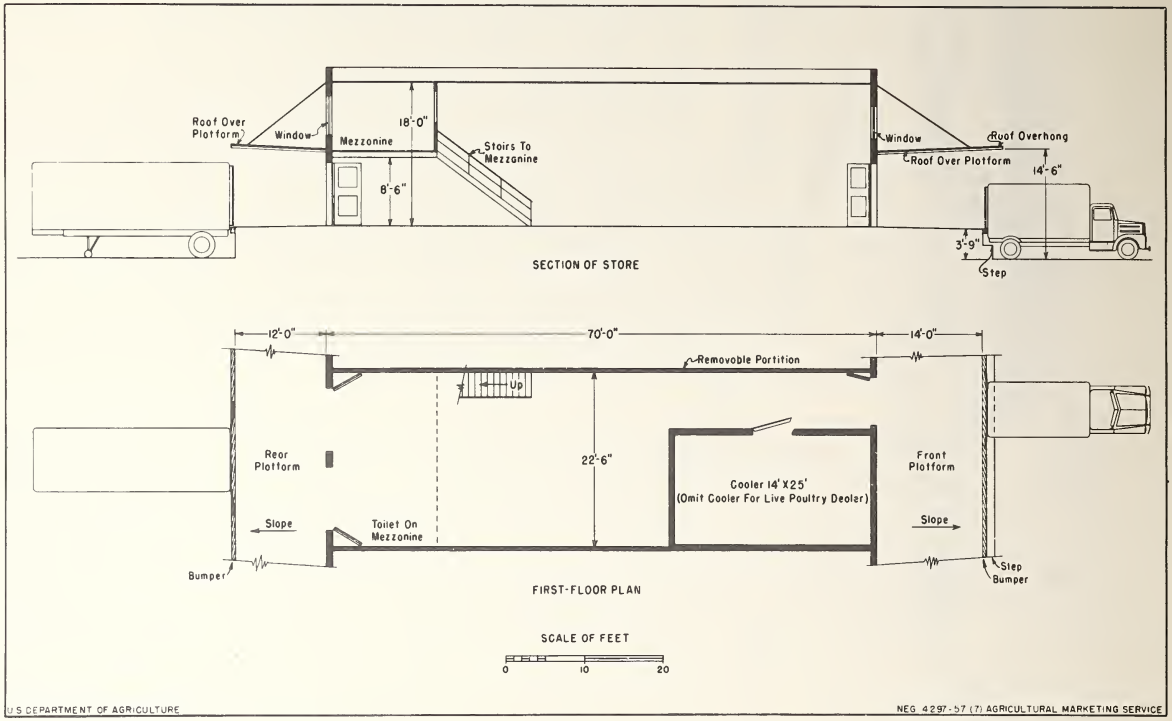

Figure 10.—Possible floor plan for a wholesale poultry and egg store.

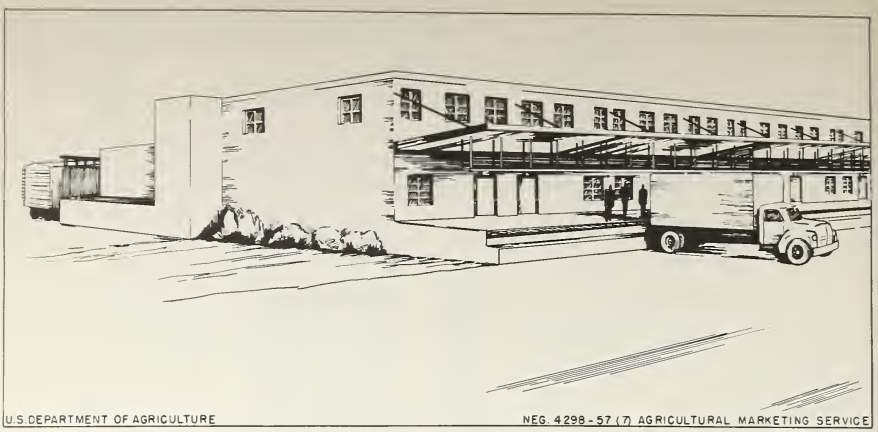

Figure 11.—A design for the proposed wholesale meat buildings.

Trends in the form in which food is marketed are constantly changing, and a building of this type would be more adaptable. Dealers would not need all of the space on a full second floor at the beginning, but part of it could be used for storage or other purposes. In the event that a full second floor is built, the building should be constructed in such a way that the ceiling and floor between the 2 levels could be knocked out, making a 1-story building with a ceiling height of 20 feet. For this type of convertibility, the meat rails should be supported from the walls rather than hung from the ceiling. Thus, meat stores could be easily adapted to palletized operations should there be a large increase in the marketing of meats in packaged form.

Freight elevators 10 feet wide by 10 feet deep are provided at both ends of each building to carry supplies to the upper level. The dimensions of the 4 buildings with 20 units each, therefore, are 86 feet by 520 feet. Although this length is the greatest proposed for any building in the food center, it should not interfere with the proper flow of traffic. The dimensions of the building with 15 units are 86 feet by 395 feet.

The plan provides continuous platforms and floors on the same level. The front platforms are at truck-bed level, or about 45 inches high, while the rear platforms are at refrigerator car-floor level, or about 55 inches high. A wooden bumper 6 by 8 inches should be bolted to the top edge of the front platforms to protect them from damage by trucks. A continuous step 22 inches high is provided at the front platforms. Door openings at both the front and rear are 5 feet wide.

Two meat rails should be constructed along the full length of both the front and rear platforms, with crossovers at each store, thereby making it possible to unload meat at any point on the platforms and to roll it into the stores. These rails also provide an excellent method for transporting meats among wholesalers within the building.

Major requirements of meat wholesalers besides meat rails are refrigeration facilities, hot and cold water, and steam. Because of variations in their requirements, individual wholesalers should provide their own refrigerated rooms and equipment. However, each building should be built to meet requirements of the Public Health Administration, the Federal Meat Inspection Service, State and city sanitation departments, and city building codes. Each unit operating under Federal meat inspection will need to provide office space for the Federal inspector either in the unit or in the office building. Special requirements of the Federal Meat Inspection Service regarding employees' locker and toilet rooms, floor drainage, hot and cold water hose connections, and a collapsible type retaining compartment for holding retained carcasses and produce in coolers must be met. It is suggested that working drawings for the meat facilities be approved by the Meat Inspection Division of the Agricultural Research Service, United States Department of Agriculture, before construction is undertaken. It is suggested that a central steam plant for each building be located in the basement underneath one unit near the center of the building. Basements are not recommended for any other units.

The first floor of the store units is planned for meat handling operations. All floors and platforms on this level should be built of concrete with a nonskid surface. The second-floor space is to be used primarily for dry storage, refrigeration equipment, offices, locker rooms, and toilets. The second floor also should include a 7-foot

freight corridor along the length of the building so that products for dry storage can be moved into any unit from the elevators. Partitions should be the removable type so that several units could be combined.

Each unit of the above dimensions contains 1,500 square feet of enclosed first-floor space, 1,000 square feet of enclosed second-floor space, and 650 square feet of platform space, or a total area of 3,150 square feet. Thus, the 95 units proposed for the meat wholesalers contain 142,500 square feet of enclosed first-floor space, 95,000 square feet of enclosed second-floor space, and 61,750 square feet of platform space, or a total of 299,250 square feet. This is 26 percent less than the 406,000 square feet now occupied by the 70 dealers, much of which is wasted because the buildings are poorly designed.

Possible layouts for general wholesalers, boning establishments, and hotel supply businesses occupying standard units are shown in figure 12. All three layouts permit a direct flow of meat through the store with a minimum of handling. These sketches are merely intended to show how different types of meat dealers can make use of the proposed standard store unit by varying the internal arrangement to suit their own particular need.

The layout for a general wholesaler (No. 1 on fig. 12) has a cooler 44 feet by 24 feet by 11 feet high, which includes a freezer 8 by 9 feet. The maximum capacity of the cooler is about 260 quarters.[3] However, the working capacity is about 205 quarters. The shipping room is 17 by 8 feet 6 inches, and the first-floor shipping office is 13 by 6 feet.

The layout of the boning establishment (No. 2 on fig. 12) has a cooler 30 feet 6 inches by 24 feet by 11 feet high, with a capacity of about 132 quarters of beef which includes a freezer 13 feet by 8 feet; a workroom 24 feet by 13 feet; a shipping room 17 feet by 8 feet 6 inches; and a first-floor shipping office 13 feet by 6 feet.

The layout of the hotel supply house (No. 3 on fig. 12) has a cooler 15 feet by 24 feet by 11 feet high, with a capacity of about 52 quarters of beef; a freezer 22 feet by 8 feet; a workroom 22 feet 6 inches by 15 feet; a shipping room 14 feet 6 inches by 17 feet 6 inches; and a first-floor shipping office 13 feet by 6 feet.

The typical second-floor plan shown might vary slightly in locker space requirements for different types of stores; however, it is suggested that the general arrangement shown on figure 12 be used. The second-floor office is the main office, while the first-floor office space is used only as a control point in the shipping operation. The main office is 12 feet by 17 feet; the corridor, 4 feet 6 inches wide; the locker room, 8 feet by 10 feet, containing 14 lockers; 2 toilets, 6 feet by 4 feet; a store room, 11 feet by 13 feet; a compressor room, 11 feet by 6 feet; and the freight corridor, 7 feet wide.

The design of the 22 detached buildings suggested for the 22 processors or larger wholesalers should be developed by the individual firms that would occupy them. However, these structures should conform to all codes and the master plan.

BUTTER AND CHEESE STORES

Thirty multiple-store units are proposed for butter and cheese wholesalers who handled about 950 carlots in 1953, and 2 detached buildings for 2 wholesalers whose volume, combined with the volume of butter and cheese handled by 5 meat dealers who would operate in detached buildings in a new food center, totaled 650 carlots. The multiple-store units are for smaller wholesalers who in many instances also cure, process, and package cheese; these operations require a large amount of space. The detached buildings are primarily for larger wholesalers whose operations may include some types of packaging or processing. Plans have been made sufficiently flexible to provide for unusual situations and to meet the needs of most butter and cheese wholesalers.

In the proposed plan the 30 multiple-store units are in 2 buildings of 15 units each. These buildings are one and a half stories. Each unit is 25 feet wide, 70 feet deep, and 18 feet high from the main floor to the ceiling at the front, and 14 feet high at the rear. A 14-foot covered platform at the front with roof overhang and a 12-foot covered platform at the rear give an overall depth of 96 feet. Thus, the dimensions of each building are 96 by 375 feet.

As in the case of the meat stores, some consideration should be given before the final plans are made to putting in a full second-floor level to make the building more adaptable to changing trends in the food industry. This modification would make additional space available for curing and processing operations, but would raise the construction cost about 5 percent. At the time of the survey several wholesalers indicated their desire for more space.

The design provides continuous platforms and floors on the same level. The front platforms are at truck-bed level, or about 45 inches high, and the rear platforms at refrigerator car-floor level, or about 55 inches high. A wooden bumper 6 by 8 inches should be bolted to the top edge of the front platforms to protect them from damage by trucks. A continuous step 22 inches high runs along the front platform to accommodate small trucks and pedestrians. Both front and rear door openings are 6 feet wide.

Major requirements of wholesale butter and cheese stores are refrigeration and dry-storage facilities, temperature-controlled rooms for curing cheese, and sufficient shipping and order concentration space to handle the normal daily business. Second-floor office space 15 feet by 25 feet is

[3] The capacity of the meat rails is calculated on the basis of 1 foot of rail per quarter of beef. The assumed weight of a quarter of beef is 150 pounds.

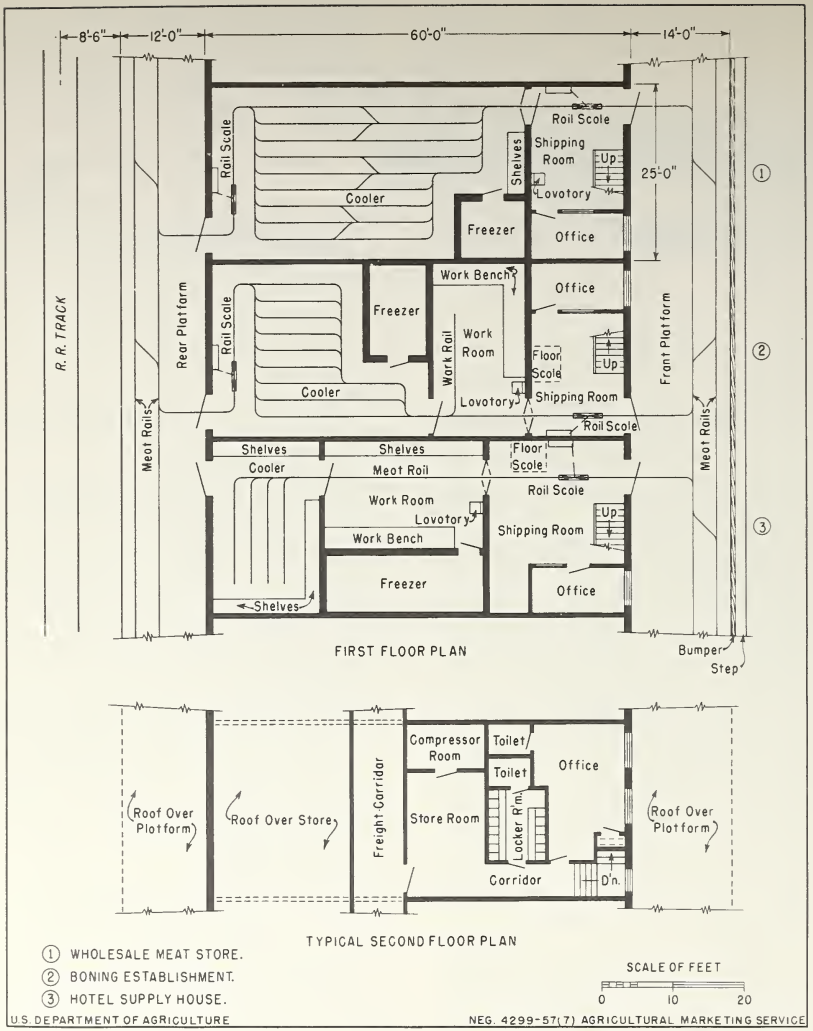

Figure 12.—Possible floor plans for a general meat wholesaler, boning establishment, and hotel supply wholesale store.

placed at the front of the store units, because this point is closer to the shipping operations which take place at the front and does not interfere with space at the rear for temperature-controlled and refrigerated rooms. Because of variations in their requirements for such rooms individual wholesalers should provide for their own needs.

Buildings should be constructed to meet requirements of the Public Health Administration, the Federal Inspection Service, State and city sanitation departments, and city building codes. All floors and platforms should be constructed of concrete with nonskid surfaces. The inside walls of rooms in which butter and cheese are handled

should be covered with a light-colored, glazed ceramic-tile finishing; and ceilings should be covered with a hard, light-colored, waterproof smooth coating to prevent mold accumulation.

Each unit as described above contains 1,750 square feet of first-floor enclosed space, 375 square feet of second-floor space, and 650 square feet of platform space, or a total of 2,775 square feet. The 30 units proposed for the butter and cheese wholesalers contain 52,500 square feet of enclosed first-floor space, 11,250 square feet of second-floor space, and 19,500 square feet of platform space, or a total of 83,250 square feet. The 14 dealers for whom this space is planned now occupy 68,250 square feet of space. The increase of 15,000 square feet, or 22 percent, is needed because of the inadequacy of space presently used for the various operations these dealers desire to carry on.

A suggested layout for a wholesale butter and cheese store in a standard unit is shown in figure 13. The cooler room is 25 feet by 54 feet by 14 feet high, with a capacity of about 4 carlots. The dry-storage and shipping room is 25 feet by 15 feet by 9 feet high. The second floor containing offices and toilets is 25 feet by 15 feet. This layout provides for a straight flow of products through the store, with a minimum of handling and back-tracking.

The design and layout of the two detached buildings should be the responsibility of the individual firms that would occupy them, but should meet all codes and conform to the master plan of the food center.

DRY GROCERY STORES

Forty multiple-store units are planned for 23 dry grocery wholesalers who handled about 3,510 carlots in 1953, and 6 detached buildings for 6 wholesalers who handled about 8,320 carlots. The multiple-store units are primarily for dealers whose space requirements are less than 20,000 square feet; detached buildings are for wholesalers who require more than 20,000 square feet.

In the proposed plan the 40 multiple-store units are provided in 4 buildings of 10 units each. Each unit is 50 feet wide, 100 feet deep, and 18 feet high from the main floor to the ceiling, with a 14-foot covered platform at the front and rear. The roof over the front platform extends beyond the edge of the platform. The dimensions of each building, therefore, are 128 feet by 500 feet.

The design of the buildings provides continuous platforms and floors on the same level. The front platforms are at truck-bed level, or 45 inches high, and the rear platforms at boxcar-floor level, also 45 inches high. Front platforms should be protected from damage by trucks by bolting a wooden bumper 6 inches by 8 inches to the top edge. A step 22 inches high is provided at the front platform for pedestrians and small trucks. Both front and rear door openings are 10 feet wide. Figure 14 shows a floor plan for a wholesale dry grocery store.

To make it possible for individual wholesalers to lease two or more units, removable partitions should be used. All units in the plan contain mezzanine offices 15 feet deep by 50 feet wide, located at the front of the store near the order filling operations, thus freeing the rear of the unit for storage. To allow for their construction and provide adequate space for storage, the height of the ceiling is 18 feet. All floors and platforms on the first-floor level should be concrete with a nonskid surface.

Each store unit of the above dimensions contains 5,000 square feet of first-floor enclosed space, 750 square feet of mezzanine space, and 1,400 square feet of platform space, or a total of 7,150 square feet. The 40 units suggested for the 23 wholesalers provide 200,000 square feet of first-floor enclosed space, 30,000 square feet of mezzanine space, and 56,000 of platform space, or a total of 286,000 square feet. Since the 23 dealers now occupy 427,250 square feet, the amount of space proposed for them represents a decrease of 33 percent; however, much of their space is used inefficiently owing to poor building design.

The six wholesalers each of whose needs would exceed 20,000 square feet of space should design a plan of the structures they would occupy. Their buildings should conform to all codes and standards established by the food center authorities.

FROZEN FOOD STORES AND FREEZER STORAGE

It is suggested that one building contain the facilities needed by 22 frozen food wholesalers who handled 3,360 carlots in 1953, as well as general freezer storage for users of space in the food center. In the proposed plan the overall dimensions of this building are 800 feet by 340 feet, and 18 feet high from the main floor to the ceiling. Front and rear covered platforms along the length of the building are 20 feet deep. The front platform is at truck-bed level, or 45 inches high, and the rear platform is at refrigerator car-floor level, or 55 inches high. A wooden bumper 6 inches by 8 inches should be bolted to the top edge of the front platform to protect it from damage by trucks. At each end of the front platform and at the center of the building, there should be steps for pedestrians. All floors and platforms on the first-floor level should be made of concrete with a nonskid surface.

A covered unrefrigerated passageway, 52 feet wide, connects the front and rear platforms at the center of the building, thus dividing the building into two parts (fig. 15). This passageway is to be used for some of the receiving and loading-out operations of the general storage areas. Dispatching offices at both the front and rear entrances of the passageway are for the purpose of

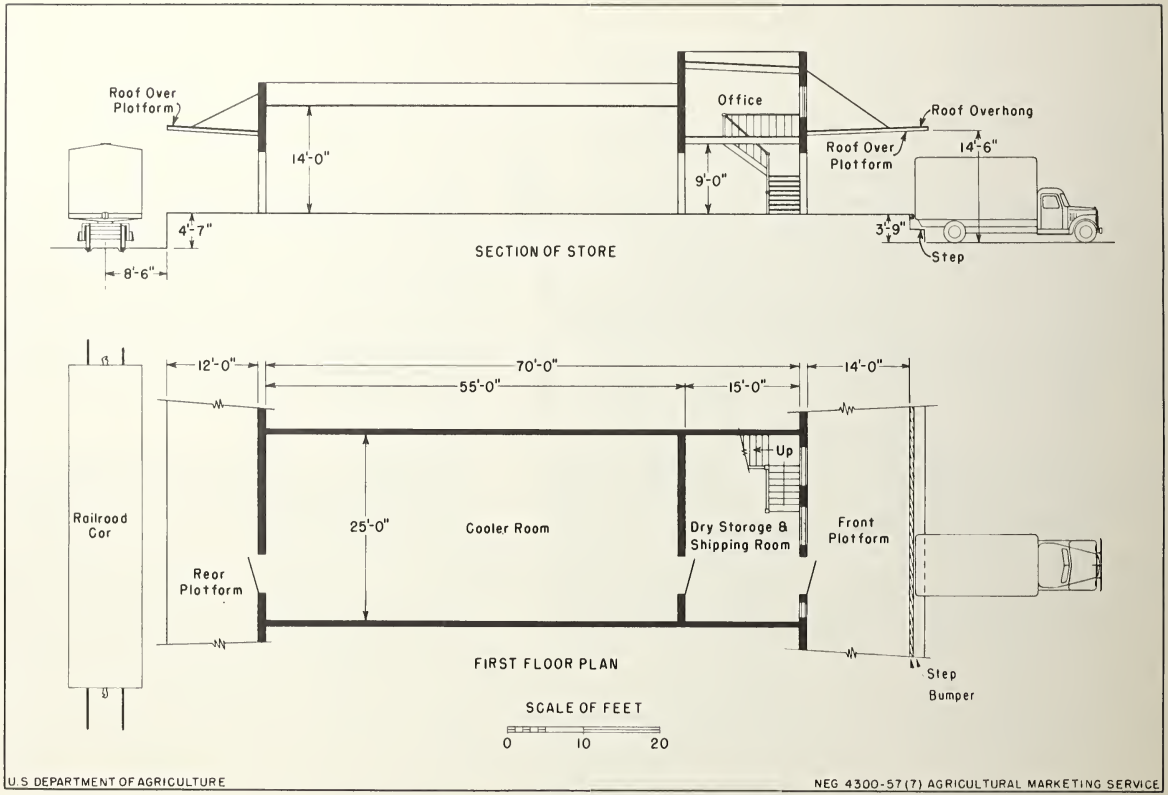

Figure 13.—Possible floor plan for a wholesale butter and cheese store.

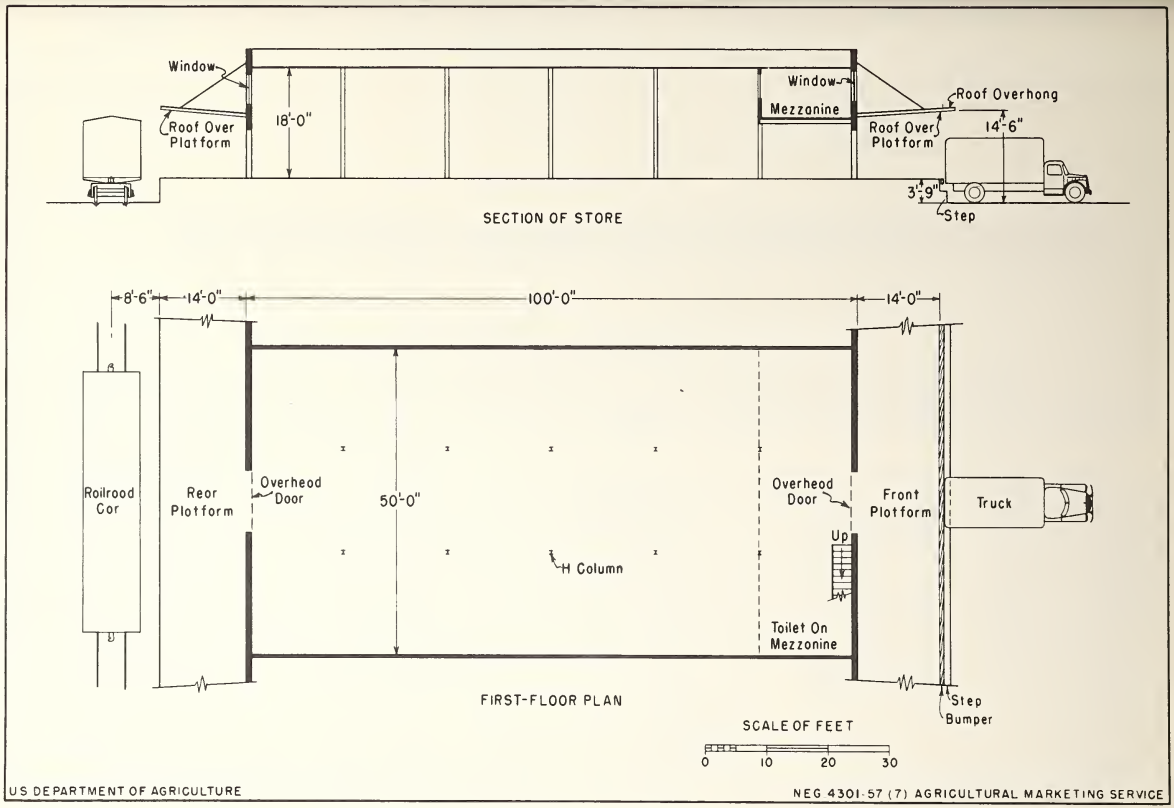

Figure 14.—Possible floor plan for a wholesale dry grocery store.

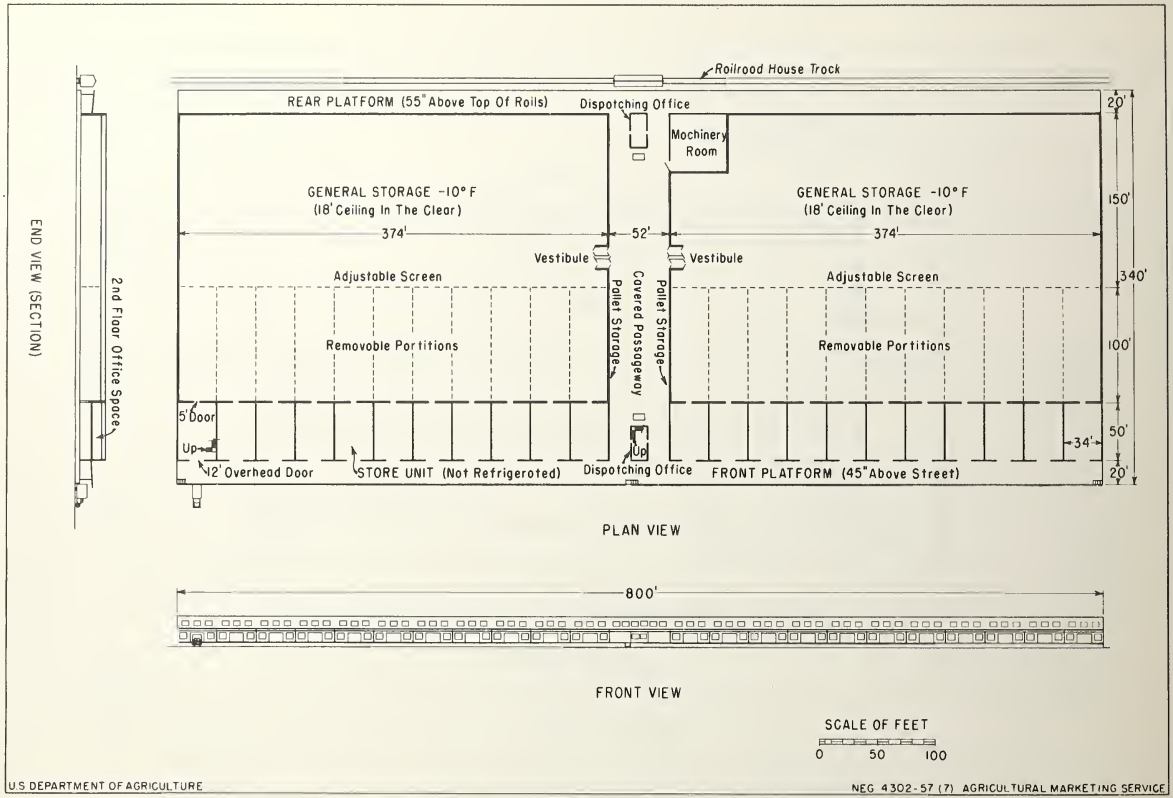

Figure 15.—Possible layout for a wholesale frozen food building.

checking the receipts and shipments of frozen foods from general storage. Empty pallets may be stacked along the walls of the passageway.

A vestibule on each side of the passageway gives access to a general storage freezer in each of the two sections of the building. Thus, each section is divided longitudinally into two parts. The part to the rear is designated for the general storage of frozen foods; the refrigeration machinery is placed in a rear corner. The front section is divided into a total of 22 multiple-store units for wholesalers.

Each general storage area is 374 feet long, 150 feet wide, and 18 feet high, or a total for the two areas of 112,200 square feet or 2,019,600 cubic feet, including the machinery room.

Front-door openings to the 22 multiple-store units are 12 feet wide, and rear-door openings 5 feet wide. Each unit is 34 feet wide and 150 feet deep. The front 50 feet of each unit is unrefrigerated space, and the remaining 100 feet freezer space. The agency constructing this building would be expected to provide refrigeration equipment for the entire building, but the individuals operating in the building would be expected to provide all other needed equipment.

Each unit contains 5,100 square feet of first-floor space—1,700 square feet unrefrigerated and 3,400 square feet refrigerated. A second-floor office is located above the unrefrigerated space, providing space 34 feet wide by 50 feet deep, or 1,700 square feet. In addition, platform space for each unit totals 680 square feet. Thus, the total floor space per unit is 7,480 square feet. The 22 store units provide 112,200 square feet of first-floor enclosed space (37,400 square feet unrefrigerated and 74,800 square feet refrigerated), 37,400 square feet of second-floor office space, and 14,960 square feet of platform space—a total of 164,560 square feet.

In addition to the second-floor space shown above for the 22 wholesalers, 2,600 square feet is available over the covered passageway for use by the building management and employees for office space, restrooms, and storage.

The total floor area provided in the frozen food building is 312,000 square feet, divided between general and multiple-store areas as follows:

	Square feet in general area	*Square feet in multiple-store area*	*Total*
Refrigerated [1]	112, 200	74, 800	187, 000
Unrefrigerated [2]	35, 240	89, 760	125, 000
Total	147, 440	164, 560	312, 000

[1] Includes the refrigeration machinery room.

[2] Includes 16,000 square feet in rear platform, 16,640 square feet in covered passageway connecting the front and rear platforms, and 2,600 square feet on second floor over the covered passageway.

TOTAL AMOUNT OF FLOOR SPACE IN MULTIPLE-STORE UNITS

The 21 multiple-store buildings in the proposed plan, in which 7 major groups of commodities would be handled, contain 362 store units for 310 independent wholesalers, providing 1,270,122 square feet of floor space. In table 20 may be found a comparison, for 6 of the 7 commodity groups, of the amount of space provided in the multiple-store units with the amount of space in buildings now occupied by the independent wholesalers who would be located in these store units. It is not possible to show this comparison for the frozen food wholesalers because of the wide variations in the facilities from which they operate at the present time.

TABLE 20.—*Floor space presently occupied by 288 independent wholesalers compared with space provided for them in proposed multiple-store buildings, by type of commodity, Philadelphia, Pa.*[1]

Type of commodity	Number of wholesalers	Amount of floor space			Increase or decrease in proposed floor space	
		Present buildings	Proposed multiple-store buildings		Amount	Percentage
			Number of units	Total space		
	Number	*Square feet*	*Number*	*Square feet*	*Square feet*	*Percent*
Fresh fruits and vegetables	116	370, 000	120	299, 700	−70, 300	−19. 0
Poultry and eggs	37	206, 000	35	87, 412	−118, 588	−57. 6
Seafoods	28	60, 000	20	49, 950	−10, 050	−16. 8
Meats	70	406, 000	95	299, 250	−106, 750	−26. 3
Butter and cheese	14	68, 250	30	83, 250	+15, 000	+22. 0
Dry groceries	23	427, 250	40	286, 000	−141, 250	−33. 1
Total	288	1, 537, 500	340	1, 105, 562	−431, 938	−28. 1

[1] 22 frozen food wholesalers are excluded. Because of the wide variations in the kinds and types of facilities they use, the data are not comparable. The total space provided for them in the proposed food center is 164,560 square feet.

For the 6 commodity groups for which the comparisons are made, the space provided for 288 independent wholesalers in the proposed multiple-store units is 1,105,562 square feet, as compared with 1,537,500 square feet in their present buildings. Thus, the proposed facilities contain 28 percent less space.

RAIL CONNECTIONS TO STORES

Direct rail connections must be provided to each building occupied by dealers who receive food products by rail. The number of tracks needed will vary according to the volume of rail receipts. In the proposed plan double tracks are provided to the rear platform of the fruit and vegetable store buildings. No provision for tracks is made for the seafood and poultry and egg buildings, since most of their receipts arrive by motortruck. The layout, however, should be planned in such a way that rail connections could be extended to these facilities. Where rows of buildings for other groups are separated by tracks alone, three sets of tracks are placed. Otherwise, double tracks are provided.

Wherever feasible, the streets at the rear of the stores should be paved between and level with the top of the rails so that the rear platforms could be used in loading or unloading trucks when the tracks are not occupied by rail cars, and to make it easier to keep these areas clean.

STREETS AND PARKING AREAS

The major streets in the food center should be paved to carry heavy traffic and facilitate proper drainage away from the buildings. All parking at the buildings should be at right angles to the loading platforms. Where two rows of buildings face the same street and center parking is planned, the streets should be 160 to 190 feet wide to permit the parking of trucks at right angles on each side of the street, center parking, and sufficient space for the flow of traffic. Other streets may vary from 60 to 100 feet, depending on their use and the traffic load. For instance, in some cases it will be necessary to provide angle parking for cars and trucks, while in others only sufficient space to handle traffic will be needed.

Convenient parking spaces should be provided near the stores for vehicles that are not actually being loaded or unloaded. Such parking areas would be used for the parking of trucks bringing in supplies that are not ready to unload, buyers' cars and trucks coming to the food center for supplies that are not ready to load, and cars of employees in the food center. The parking areas should be as near the buildings as possible but should not block market streets or loading areas. They should be marked off to permit orderly parking and to conserve space. Although there are no definite figures to serve as a basis for determining the number of parking spaces that would be needed, it is suggested that parking space for about 1,800 vehicles should be provided in addition to the spaces along store platforms.

OTHER FACILITIES AND SERVICES

It is likely that many firms now occupying office space in the vicinity of the Dock and Callowhill Streets market district would desire to have offices in the new food center area. Such firms would include brokers, carlot receivers, national food processors and canners, telegraph companies, transportation lines, and market news and inspection agencies. In addition, space would be needed for a branch bank, barber shop, restaurant, public restrooms, the food center management, and an auditorium for group meetings. This space could be provided by adding a second floor over some of the store buildings or in an administration building, preferably in a central location. Since the income from the rentals of the space in the building should be sufficient to amortize the investment in it and pay all operating expenses, and since no study has been made to determine how large a building would be needed, estimates of construction costs are not included in this report.

In addition to the restaurant in the administration building, several other restaurants should be provided. In the proposed plan two are placed in the multiple-store buildings for fruit and vegetable wholesalers by adding a standard store unit to each of two buildings. Another is provided in the meat wholesaling section.

Public restrooms should be provided at various points throughout the food center area in addition to those in the administration building. They could be in basements under the restaurants in the fruit and vegetable section and in the meat section.

Provision also should be made for sleeping and resting facilities for truckers and others doing business in the food center, and for a container supply house.

SPACE FOR EXPANSION AND ALLIED INDUSTRIES

A considerable amount of land should be acquired at the outset so that more stores of the type initially constructed may be added and to provide space for other types of facilities, such as service wholesale warehouses, cold storage warehouses, chainstore warehouses, packer branch houses, food processing plants, and specialty wholesalers. In other cities that have built wholesale markets, many types of wholesale food handlers have gravitated to the market area over a period of time. Therefore, sufficient land must be set aside if Philadelphia is to have a central, unified wholesale food center adequate for future needs.

ARRANGEMENT OF PROPOSED FACILITIES IN THE FOOD DISTRIBUTION CENTER

Figure 16 shows a possible layout of the facilities suggested in the preceding chapter for a food distribution center in Philadelphia on a 388-acre tract. Figure 17 shows a scale model of these facilities. **Although this layout may be modified to meet any requirements that might develop during construction, the principles set forth should be adhered to.**

Separate sections of the market area have been set aside for each major type of commodity. The number of buildings shown is that described in the previous chapter, and an expansion area is shown for additional buildings that may be needed at some future time. Each section has its own parking areas. By grouping the handlers of the various types of food in this manner, the operations of both buyers and sellers will be facilitated.

The fruit and vegetable section of the food center has been placed as close as possible to the railroad produce terminals and team tracks near the site because the handlers of these commodities make principal use of such facilities. All the fresh fruit and vegetable business must be conducted in as compact an area as possible. The poultry and egg and seafood dealers are placed near the fruit and vegetable section, since they are now located near such firms.

Moving westward on the layout, the next section is the meat section, in which some dressed poultry and eggs likewise will be handled. To facilitate the switching of railroad cars, it might be advantageous to place at the south end of the buildings firms specializing in carcass meat. Across a street from the meat stores the facilities for handling frozen foods and dairy products are placed. This layout groups near the center of the area all those firms which make extensive use of refrigeration and which may desire to obtain their refrigeration from the public refrigerated warehouse in the frozen-food building. At the western end of the site dry grocery wholesalers have been placed adjacent to the space for allied industries, such as handlers of coffee, tea, candy, beverages; manufacturers' branch houses; and restaurant commissaries. Insofar as possible types of businesses making a large proportion of their sales to buyers visiting the market have been placed adjacent to one another, while those whose business consists almost entirely of taking orders and delivering have been placed at the other end of the site.

Firms having business transactions with operators throughout the food center may be housed in space above store units. However, in the event that an administration building is preferable, one has been placed north of Packer Avenue in the service area. It is expected that all types of service activity for the food center would be grouped in this area, including such facilities as banks, restaurants, motel, garage and service station, parking area, facilities for firms selling supplies to food wholesalers, and the like. Locating these facilities here makes it unnecessary to place railroad tracks across Packer Avenue. This area is the first one reached as the food center is approached. Therefore, it is considered to be a reasonably central location, especially since the railroad produce terminals really would be a part of the proposed food center even though they would operate under different ownership.

The layout has been drawn up in such a way that the facilities initially constructed will form a compact unit, and that the expansion of each segment can be accomplished without destroying the compactness of existing facilities. To the extent possible, initial facilities have been placed north of Pattison Avenue, leaving the area south of it for future development. The buildings have been laid out so that they can be served by rail with a minimum of curves in the railroad tracks, and the streets have been designed to minimize traffic problems. Furthermore, the food center is located so that little nonmarket traffic will move through it.

Space is provided on this layout for the wholesaling of all kinds of products that are normally sold in a retail grocery store. Hence there would be no need for the retail food dealers to visit another area to get a complete line. All the services necessary for the conduct of the wholesale food business have been incorporated into the plan.

Not all the facilities outlined can be developed at the same time. The creation of a large food distribution center is an operation that will require several years. In the case of wholesalers of commodities such as fruits and vegetables which are sold largely to buyers who visit the market area, substantially all the wholesalers will have to be relocated at the same time. Other types of food wholesalers who take orders and deliver most of their sales can locate in the food center one or a few at a time as the individual firms may need new facilities. In view of this gradual development of the project, it is very important that a master plan be adopted at the outset so that the first buildings constructed will not interfere with the subsequent development of the area.

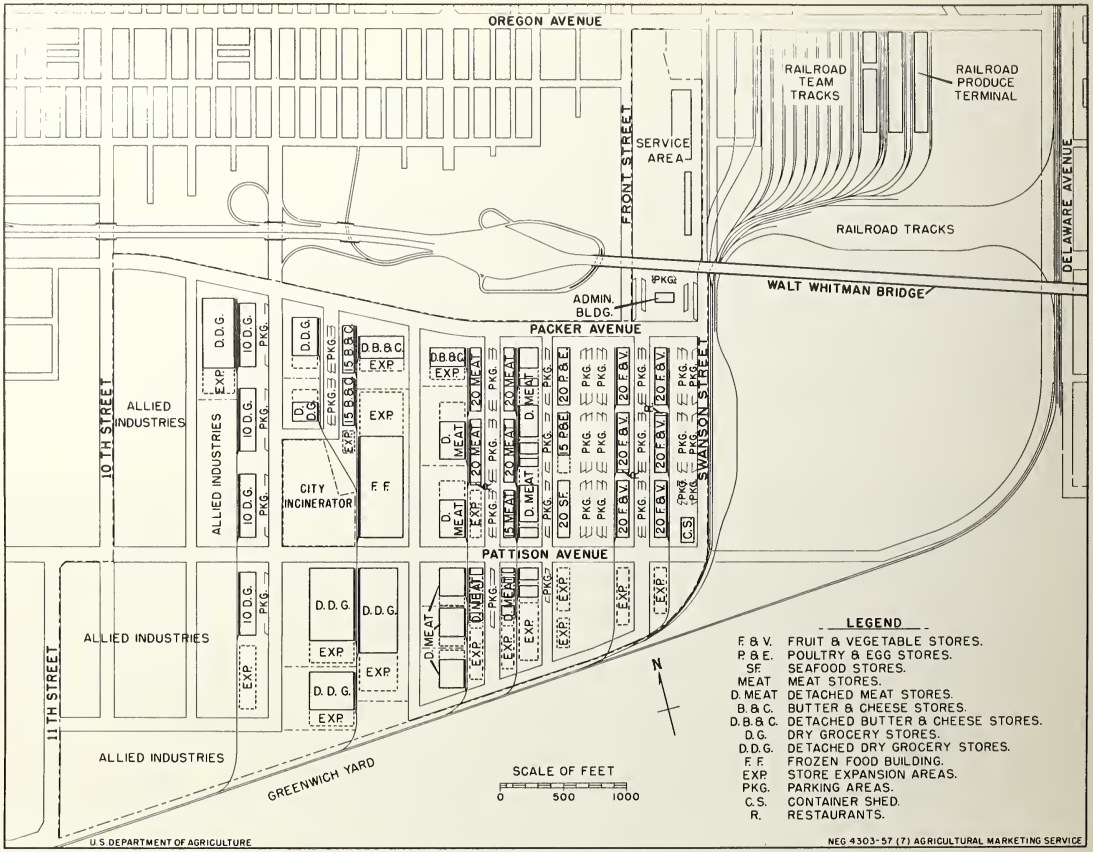

Figure 16.—A possible layout for a 388-acre food distribution center in Philadelphia, Pa.

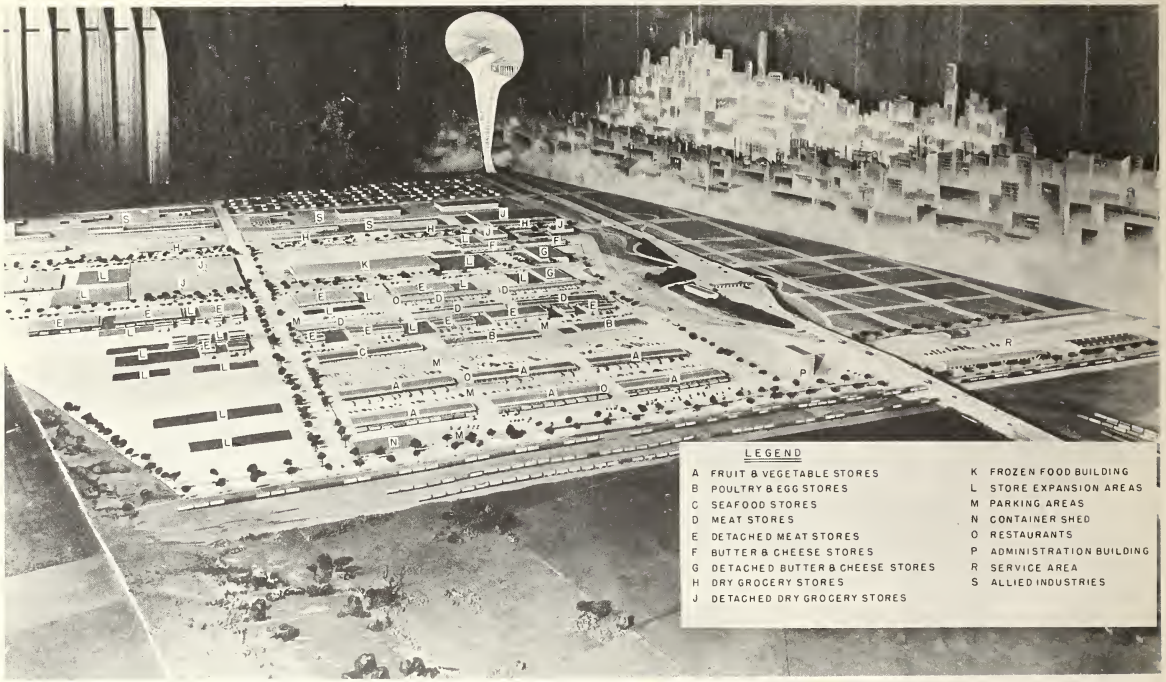

Figure 17.—A scale model layout for a 388-acre food distribution center in Philadelphia, Pa.

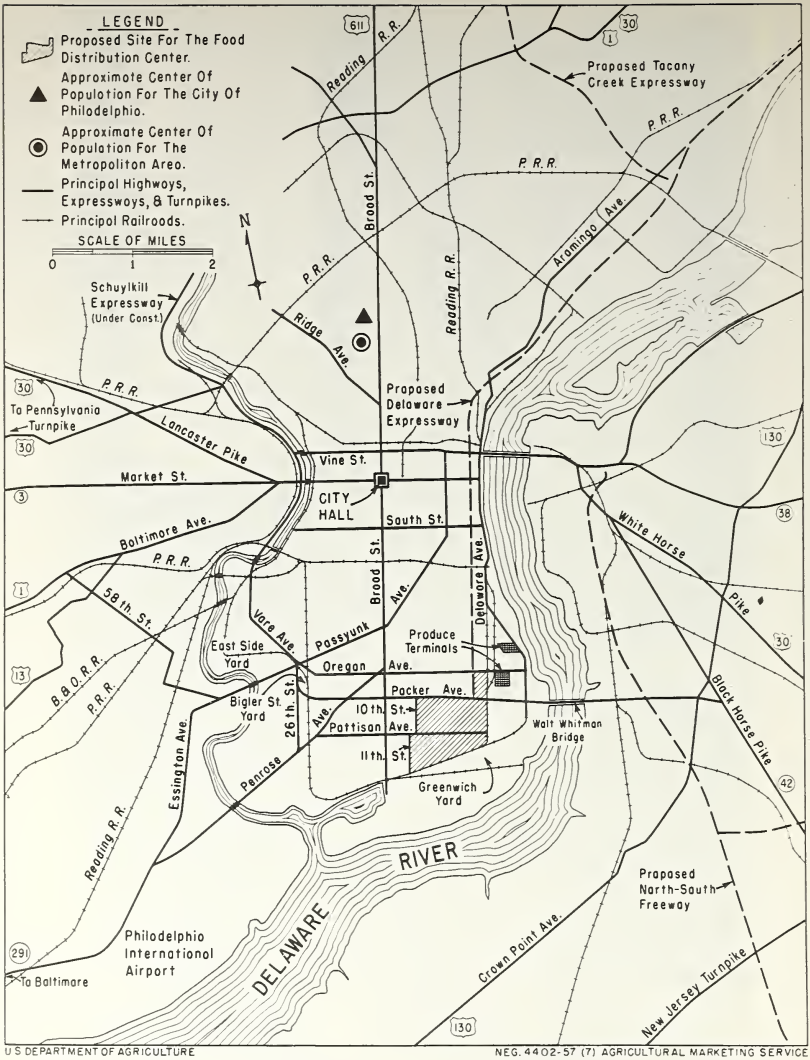

Figure 18.—Location of proposed site for the food distribution center at Philadelphia in relation to its convenience to population center, motortruck and rail transportation, and existing wholesale food facilities.

PROPOSED SITE FOR THE FOOD DISTRIBUTION CENTER

The four groups most directly concerned with the location of a food distribution center in Philadelphia are buyers who would go there for supplies, sellers who would bring or send food supplies to it, wholesalers who would operate in it, and transportation agencies carrying products to and from it. Groups that are indirectly concerned with the location of a new food center are the consumers in the distribution area, to whom a proper site would mean more economical distribution and better quality products, and the city of Philadelphia because of the effect of market plans on zoning, traffic control, street and highway planning, and other services rendered by the city.

In selecting a site for the food center, the principal factors to consider are: (1) convenience to retail outlets; (2) convenience to motortruck transportation; (3) convenience to railway transportation; (4) proximity to other wholesale food facilities; (5) adequate land area at reasonable cost; (6) accessibility to public utilities; (7) avoidance of nonmarket traffic; and (8) land use, topography, and zoning. The site considered to be most suitable in these respects in Philadelphia is a large tract in the southeastern part (fig. 18). It is bounded by Oregon and Packer Avenues on the north, the Pennsylvania Railroad Greenwich classification yards on the south, Swanson Street on the east, and Tenth and Eleventh Streets on the west. There are other relatively inexpensive parcels of land adjacent to this site, some of which, if desired, could be incorporated into the long-range plans for the food center.

CONVENIENCE TO RETAIL OUTLETS

The proposed site is about 4½ miles from the approximate centers of population for the city and the metropolitan area, which presumably are the approximate center of retail outlets for food. Sites more centrally located either were too small or were occupied by substantial structures making the cost prohibitive. Furthermore, this site is located away from the downtown district and is accessible to most retail grocers by routes other than those through the heavy downtown traffic areas. Thus, it undoubtedly comes as near as any available location to requiring a minimum amount of travel time between retail outlets and the food center.

CONVENIENCE TO MOTORTRUCK TRANSPORTATION

Packer Avenue, a northern boundary of the site, and the Walt Whitman Bridge approach furnish the primary access to the expressway network leading in all directions. Since the bridge approach extends to Twenty-sixth Street and Vare Avenue, it will be a major connection with the extension of the Schuylkill Expressway to the west and, via Penrose Ferry Bridge, with the Industrial Highway to the south. The Schuylkill Expressway leads to the Pennsylvania Turnpike to the north and United States Highway No. 1 to the south. The bridge approach also leads to the New Jersey Turnpike to the east. Connections to and from the west and south can be made with the bridge approach at Broad Street, and recommendations are under consideration for another set of connections at Seventh and Lawrence Streets with the westbound and northbound interconnections of the Delaware Expressway.

Most traffic originating from within the city also will reach the site by way of the expressway system by traveling to the nearest connection with the Schuylkill or Delaware Expressway.

Thus, the proposed site should be a desirable location for motortruck transportation to and from the food center.

CONVENIENCE TO RAILWAY TRANSPORTATION

The site is well located with respect to rail service since all railroads serving the city have tracks and produce yards near it. The Greenwich Classification Yards of the Pennsylvania Railroad are its southern boundary, and the Eastside Yards of the Baltimore and Ohio Railroad are about 3 miles northwest of the site. The Baltimore & Ohio–Reading Produce Terminal and the Pennsylvania Railroad Produce Terminal are only a few hundred yards from the site. Because of many changes necessitated by the construction of the Walt Whitman Bridge, the present rights of way of the railroads around the site are unsettled. The three operating railroads, under the terms of the South Philadelphia Agreement covering belt line services, have agreed to work out cooperative arrangements so that all three railroads will have access to all parts of the site through providing a unified switching service.

PROXIMITY TO OTHER WHOLESALE FOOD DISTRIBUTION FACILITIES

The site is practically adjacent to the Pennsylvania Railroad Produce Terminal. In fact, the team tracks of the terminal could serve wholesalers in the food center. The Baltimore & Ohio–Reading Produce Terminal is only about one-third of a mile away. In each of these produce terminals are facilities for both auction and private sales and public refrigerated warehouses. Therefore, the location of the food center on this site would tend to centralize the wholesale food business, thereby effecting greater economies in buying and selling.

ADEQUATE LAND AREA AT REASONABLE COST

The proposed site, comprising 388 acres with additional land available, is one of the largest areas of relatively unimproved land within the city. It should be adequate for the suggested facilities, as well as for expansion and for allied industries. Failure to purchase adequate land for present needs and for future expansion can result in high operating costs and an expensive expansion program at a later date.

ACCESSIBILITY TO PUBLIC UTILITIES

Water, electricity, and gas are available along Oregon Avenue, which is touched by a portion of the site.

AVOIDANCE OF NONMARKET TRAFFIC

Another advantage of this site is that it is in a location where no traffic need enter it except those vehicles having business in the market area. Since thousands of motortrucks and passenger cars must visit a food distribution center daily, the handling of these vehicles is a serious enough problem without having nonmarket traffic flowing through the area. Furthermore, market traffic can be a serious interference to the movement of other vehicles.

LAND USE, TOPOGRAPHY, AND ZONING [4]

Most of the 388-acre tract is unimproved and was formerly used for the disposal of combustible refuse. A large incinerator recently built by the city in the center of the site would provide the food center with an economical means of disposing of its refuse.

A large part of the tract is below grades that would permit proper drainage. Before building, sewers would have to be installed and the area filled to an adequate level.

A major portion of the area is zoned "general industrial." At the time of the study, a part zoned "residential" contained 51 individual structures, most of which were detached houses of poor construction and were not serviced by city water and sewer.

[4] The information contained in this section was obtained from the proposal of the Redevelopment Authority of the city of Philadelphia to the Council of the City, July 18, 1955.

INVESTMENT IN LAND AND FACILITIES

It is estimated that the total funds that would be required for acquiring the site, putting it into condition to build, and constructing on it the facilities described would be about 38 million dollars. This figure does not include the cost of developing the administration building, motel, garage, filling station, other facilities in the service area, which it is assumed would be built to meet the specific requirements on such a basis as to make all expenditures self-liquidating. Nor does it include any additional facilities that may be built over the years in the expansion areas shown on the plan, or the costs of streets, water mains, and sewers which usually are borne by the city. In other words, the cost estimates contained in this chapter are only those involved in placing the total site in condition to build and constructing on it those wholesale food handling facilities which have been assumed to be initially needed.

LAND

The latest available information on the cost of 388 acres contained in the site put into condition to build is $6,186,000.[5] This figure consists of an estimated $1,500,000 for the purchase price of the land; $3,132,000 for fill; and $1,554,000 for such other costs of acquiring and developing the site as tie-in sewers, grading, demolition of buildings, and engineering and administration costs. The best available information indicates that major sewer lines, water mains, and grading, paving, and lighting of city streets will cost an additional $9,382,000. However, these latter charges are for facilities that are normally installed in Philadelphia by the city government no matter how or by whom the land is developed. Competent authorities in the city government estimate that about 6 million dollars of this expenditure (that for water and sewer) is self-supporting, and that if the site were developed for residential use instead of an industrial district of the type proposed here, the total cost to the city would be more than the $9,382,000. Since these expenses normally are borne by the city of Philadelphia, they are not included in the estimated cost of the land placed in condition to build, which is expected to be $6,186,000 or $15,943 per acre for the 388-acre tract. The total acreage includes 77.46 acres for public streets and other necessary nonrevenue-producing facilities. On the basis of the 310.54 acres that would bring in revenue, the cost per acre is $19,920, and the costs to be paid by the city add $30,212 to the cost, making a total of $50,132 per acre.

In estimating the amount of income that would have to be received for the use of any facilities that might be built by the city through Food Distribution Center, the land is valued at cost. However, if the city should elect to sell any portion of the site, it is assumed that the sale price would be greater than the cost per acre in order partially to reimburse the city for some of its other expenses in connection with the devel-

[5] The information in this paragraph on acreages and costs was made available by Food Distribution Center, the corporation created for the development of the food center at Philadelphia.

opment, because when any portion is sold, the city will not have the income from the property after the amortization payments are completed. Hence, for the purpose of the cost estimates and income requirements which follow, the cost of the land is assumed to be $19,920, and the appraised value $30,000.

Since each commodity group has its own section in the proposed layout, it is possible to determine the land acreage that will be used by each group, as well as the amount of land that will be needed by service facilities and allied industries. The estimates in table 21 include areas for expansion in addition to the areas needed for initial construction.

TABLE 21.—*Estimated land area needed by various groups in the proposed food distribution center on a 388-acre tract, Philadelphia, Pa.*

Commodity group	Acreage needed in—[1]		
	Multiple-store area	Detached store area	Total
	Acres	*Acres*	*Acres*
Fresh fruit and vegetable section	35. 22	0	35. 22
Poultry and egg section	10. 90	0	10. 90
Seafood section	5. 45	0	5. 45
Meat section	11. 36	37. 82	49. 18
Butter and cheese section	3. 41	8. 79	12. 20
Dry grocery section	18. 79	40. 18	58. 97
Frozen food section	11. 76	0	11. 76
Service facilities			24. 92
Allied industries			101. 94
Public streets			77. 46
Total			388. 00

[1] These estimates include acreage needed for initial construction and expansion.

FACILITIES

The estimates of the costs of construction for facilities planned for the food center are shown by commodity groups. These estimates are based on: (1) the cost of construction index for Philadelphia, July 1955; (2) estimates submitted by private engineering firms in Philadelphia; (3) the cost of constructing similar facilities in areas comparable to Philadelphia; and (4) cost estimates of private corporations for similar construction. In developing these estimates, an allowance of $1.50 per square foot of building area has been made for piling cost. Other costs included are for plumbing, floor drains, and electric wiring. Otherwise, in all cases except the frozen food building, the cost estimates are for the shell of the building, since it is assumed that with this exception individual firms will provide their own refrigerated or temperature-controlled rooms and equipment and any other special equipment which they may need. For each section the paving cost includes the paving of all land in that section not covered by buildings, with the exception of public streets which will be paved at the expense of the city. **Since the following cost estimates are all based on July 1955 costs, they obviously will have to be adjusted to reflect any changes that may have occurred between this date and the time the contracts are let.**

As previously pointed out, the operators of the detached store units undoubtedly will want buildings of the size and design most suited to their needs. The amount of floor area that they would like to have in the initial construction will depend not only on their present needs but on their future plans. The floor area shown below for these buildings was estimated by those individuals who studied their operations, and if these operators desire a different amount of space or some modifications in the building design, the cost figures will be changed.

For each of the following itemized estimates it is assumed that the city would pave public streets, 100 feet wide, running the length of the section, and that the remaining area, except those parts covered by buildings and expansion areas, would be paved at the expense of the project.

The estimates below should be used only as a guide in arriving at the total cost of the food distribution center and are not intended to replace the estimates made by local architects and contractors at the time construction is undertaken. Thus the actual cost of construction may differ from the following estimates.

Fresh fruit and vegetable section

	Dollars
Multiple-store units—120 @ $17,280 (299,700 square feet @ $6.92)	2, 073, 600
Restaurants—2 in multiple-store units—2 units with public restrooms in basements @ $19,780 each	39, 560
Container shed—100 by 200 feet, or 20,000 square feet @ $1.50	30, 000
Blacktop combination paving—101,414 square yards @ $3	304, 242
Rails—lead-in and house tracks, 7,800 feet @ $9	70, 200
Piling for trackage area—36,400 square feet @ $1.50	54, 600
Railroad switches—6 @ $3,000	18, 000
Flood lights—33 @ $150	4, 950
Public address system	900
Subtotal	2, 596, 052
Architect's and engineer's fees @ 6 percent	155, 763
Subtotal	2, 751, 815
Construction loan @ 5 percent for 1 year	137, 591
Subtotal	2, 889, 406
Contingency @ 10 percent	288, 941
Total	3, 178, 347

The railroad trackage shown is that required for lead-in tracks from existing tracks south of the site and for placing two parallel tracks at the rear of the two rows of buildings.

Poultry and egg section

	Dollars
Multiple-store units—35 units @ $17,280 (87,412½ square feet @ $6.92)	604, 800
Blacktop combination paving—27,067 square yards @ $3	81, 201
Flood lights—6 @ $150	900
Subtotal	686, 901
Architect's and engineer's fees @ 6 percent	41, 214
Subtotal	728, 115
Construction loan @ 5 percent for 1 year	36, 406
Subtotal	764, 521
Contingency @ 10 percent	76, 452
Total	840, 973

Railroad tracks to the buildings are not included in these estimates because rail receipts are negligible, but the buildings have been laid out in such a manner that trackage could be placed at the rear at some future time if necessary.

Seafood section

	Dollars
Multiple-store units—20 units @ $17,280 (49,950 square feet @ $6.92)	345, 600
Blacktop combination paving—13,533 square yards @ $3	40, 599
Flood lights—4 @ $150	600
Subtotal	386, 799
Architect's and engineer's fees @ 6 percent	23, 208
Subtotal	410, 007
Construction loan @ 5 percent for 1 year	20, 500
Subtotal	430, 507
Contingency @ 10 percent	43, 051
Total	473, 558

Railroad tracks to the buildings are not included in these estimates because rail receipts are negligible, but the buildings have been laid out in such a manner that trackage could be placed at the rear at some future time if necessary.

Meat Section

Multiple-store area:

	Dollars	Dollars
Multiple-store units—95 units @ $25,200 (299,250 square feet @ $8.00)	2, 394, 000	
Restaurant—1 in multiple-store unit, with public restrooms in basement	19, 780	
Blacktop combination paving—26,180 square yards @ $3	78, 540	
Rails—lead-in and house tracks, 4,420 feet @ $9	39, 780	
Piling for trackage area—20,627 square feet @ $1.50	30, 940	
Railroad switches—5 @ $3,000	15, 000	
Flood lights—12 @ $150	1, 800	
Subtotal	2, 579, 840	
Architect's and engineer's fees @ 6 percent	154, 790	
Subtotal	2, 734, 630	
Construction loan @ 5 percent for 1 year	136, 731	
Subtotal	2, 871, 361	
Contingency @ 10 percent	287, 136	
Total		3, 158, 497

Meat Section--Continued

Detached store area:

	Dollars	Dollars
Detached stores—22 buildings (478,950 square feet @ $9.10)	4, 358, 445	
Blacktop combination paving—48,256 square yards @ $3	144, 768	
Rails—lead-in and house tracks, 7,580 feet @ $9	68, 220	
Piling for trackage area—35,373 square feet @ $1.50	53, 060	
Railroad switches—12 @ $3,000	36, 000	
Flood lights—44 @ $150	6, 600	
Subtotal	4, 667, 093	
Architect's and engineer's fees @ 6 percent	280, 026	
Subtotal	4, 947, 119	
Construction loan @ 5 percent for 1 year	247, 356	
Subtotal	5, 194, 475	
Contingency @ 10 percent	519, 448	
Total		5, 713, 923
Grand total		8, 872, 420

The railroad trackage shown is that required to place single tracks at the rear of all store buildings from existing tracks south of the site.

The costs of meat rails within stores, and of the central steam plants in each of the 5 multiple-store buildings, are not included in these estimates.

The cost of detached buildings is figured at $9.10 per square foot, which is 14 percent more than the cost of the multiple-store buildings. The reason for this difference is that the cost figures are based on a one-story structure for the former and a one-and-a-half story structure for the latter. As previously stated, the detached buildings will be designed to fit the needs of individual tenants. Therefore, their cost will depend on the size and nature of the buildings desired. For purposes of this section, it is assumed that these will be one-story buildings of the size indicated.

Butter and Cheese Section

Multiple-store area:

	Dollars	Dollars
Multiple-store units—30 units @ $21,840 (83,250 square feet @ $7.87)	655, 200	
Blacktop combination paving—6,833 square yards @ $3	20, 499	
Rails—lead-in and house tracks, 1,775 feet @ $9	15, 975	
Piling for trackage area—8,283 square feet @ $1.50	12, 425	
Railroad switches—2 @ $3,000	6, 000	
Flood lights—10 @ $150	1, 500	
Subtotal	711, 599	
Architect's and engineer's fees @ 6 percent	42, 696	
Subtotal	754, 295	
Construction loan @ 5 percent for 1 year	37, 715	
Subtotal	792, 010	
Contingency @ 10 percent	79, 201	
Total		871, 211

Butter and Cheese Section—Continued

	Dollars	Dollars
Detached store area:		
Detached stores—2 buildings (102,500 square feet @ $9.10)	932, 750	
Blacktop combination paving—15,167 square yards @ $3	45, 501	
Rails—lead-in and house tracks, 825 feet @ $9	7, 425	
Piling for trackage area—3,850 square feet @ $1.50	5, 775	
Railroad switches—2 @ $3,000	6, 000	
Flood lights—4 @ $150	600	
Subtotal	998, 051	
Architect's and engineer's fees @ 6 percent	59, 883	
Subtotal	1, 057, 934	
Construction loan @ 5 percent for 1 year	52, 897	
Subtotal	1, 110, 831	
Contingency @ 10 percent	111, 083	
Total		1, 221, 914
Grand total		2, 093, 125

The railroad trackage shown is that required to place single tracks at the rear of all store buildings from the points at which the butter and cheese areas begin. Wherever lead-in tracks serve several sections, the trackage area is apportioned among them.

The cost of detached buildings is figured at $9.10 per square foot, which is 16 percent more than the cost of the multiple-store buildings. See last paragraph of meat section for reason for this difference.

Dry Grocery Section

	Dollars	Dollars
Multiple-store area:		
Multiple-store units—40 units @ $44,800 (286,000 square feet @ $6.27)	1, 792, 000	
Blacktop combination paving—25,361 square yards @ $3	76, 083	
Rails—lead-in and house tracks, 6,155 feet @ $9	55, 395	
Piling for trackage area—28,723 square feet @ $1.50	43, 085	
Railroad switches—4 @ $3,000	12, 000	
Flood lights—12 @ $150	1, 800	
Subtotal	1, 980, 363	
Architect's and engineer's fees @ 6 percent	118, 822	
Subtotal	2, 099, 185	
Construction loan @ 5 percent for 1 year	104, 959	
Subtotal	2, 204, 144	
Contingency @ 10 percent	220, 414	
Total		2, 424, 558
Detached store area:		
Detached stores—6 buildings (734,750 square feet @ $8)	5, 878, 000	
Blacktop combination paving—57,833 square yards @ $3	173, 499	
Rails—lead-in and house tracks, 6,060 feet @ $9	54, 540	
Piling for trackage area—28,280 square feet @ $1.50	42, 420	

Dry Grocery Section—Continued

	Dollars	Dollars
Detached store area—Continued		
Railroad switches—7 @ $3,000	21, 000	
Flood lights—18 @ $150	2, 700	
Subtotal	6, 172, 159	
Architect's and engineer's fees @ 6 percent	370, 330	
Subtotal	6, 542, 489	
Construction loan @ 5 percent for 1 year	327, 124	
Subtotal	6, 869, 613	
Contingency @ 10 percent	686, 961	
Total		7, 556, 574
Grand total		9, 981, 132

The railroad trackage shown is that required to place single tracks at the rear of all store buildings from existing tracks south of the site.

The cost of detached buildings is figured at $8 per square foot, which is 28 percent more than the cost of the multiple-store buildings. The reason for this difference is that the cost figures are based on a one-story structure for the former and a mezzanine structure for the latter. See last paragraph of Meat Section.

Frozen food section

	Dollars	Dollars
One building containing general storage and multiple stores:		
General storage:		
Refrigerated space—2,019,600 cubic feet @ $1.25	2, 524, 500	
Unrefrigerated space—35,240 square feet @ $8.00	281, 920	
		2, 806, 420
Store units—22		
Refrigerated space—1,346,400 cubic feet @ $1.25	1, 683, 000	
Unrefrigerated space—89,760 square feet @ $8.00	718, 080	
		2, 401, 080
Subtotal		5, 207, 500
Piling for building area—272,000 square feet (800 feet by 340 feet) @ $1.50		408, 000
Blacktop combination paving—9,639 square yards @ $3		28, 917
Rails—lead-in and house tracks, 1,520 feet @ $9		13, 680
Piling for trackage area—7,093 square feet @ $1.50		10, 640
Railroad switches—1 @ $3,000		3, 000
Flood lights—6 @ $150		900
Subtotal		5, 672, 637
Architect's and engineer's fees @ 6 percent		340, 358
Subtotal		6, 012, 995
Construction loan @ 5 percent for 1 year		300, 650
Subtotal		6, 313, 645
Contingency @ 10 percent		631, 365
Total		6, 945, 010

The above costs for the building include the cost of insulation and refrigeration equipment for the entire

TABLE 22.—*Summary of investment in land and facilities by type of commodity, for the proposed food distribution center, Philadelphia, Pa.*[1]

Type of commodity	Multiple-store areas			Detached store areas			Total investment		
	Land	Facilities	Total	Land	Facilities	Total	Land	Facilities	Total
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Fresh fruits and vegetables	701, 582	3, 178, 347	3, 879, 929	0	0	0	701, 582	3, 178, 347	3, 879, 929
Poultry and eggs	217, 128	840, 973	1, 058, 101	0	0	0	217, 128	840, 973	1, 058, 101
Seafoods	108, 564	473, 558	582, 122	0	0	0	108, 564	473, 558	582, 122
Meats and meat products	226, 291	3, 158, 497	3, 384, 788	753, 375	5, 713, 923	6, 467, 298	979, 666	8, 872, 420	9, 852, 086
Butter and cheese	67, 927	871, 211	939, 138	175, 097	1, 221, 914	1, 397, 011	243, 024	2, 093, 125	2, 336, 149
Dry groceries	374, 297	2, 424, 558	2, 798, 855	800, 385	7, 556, 574	8, 356, 959	1, 174, 682	9, 981, 132	11, 155, 814
Frozen foods							234, 259	6, 945, 010	7, 179, 269
Service facilities							496, 406		496, 406
Allied industries							2, 030, 645		2, 030, 645
Total	1, 695, 789	10, 947, 144	12, 642, 933	1, 728, 857	14, 492, 411	16, 221, 268	[2] 6, 186, 000	32, 384, 565	[3] 38, 570, 565

[1] The investment in land excludes the costs of sewers, water mains, and grading, paving, and lighting of city streets which are borne by the city. The costs included are for the purchase price of land, filling, grading, tie-in sewers, demolition of buildings, and engineering and administrative costs—a total of $6,186,000 for the 310.54 usable acres, or $19,920 an acre.

[2] This figure differs slightly from the figure obtained by multiplying the cost per acre by the number of acres, because the cost figures were rounded off to the nearest dollar.

[3] The sum of the figures in this column is $38,750,521 rather than $38,570,565. For explanation, see footnote 2.

building. However, as in the case of other structures, handling equipment, office equipment, and other types of equipment and fixtures needed are not included. Within the past few years some refrigerated warehouse facilities have been built at considerably lower costs than the figures shown above. The cost, of course, depends on the nature of the construction, and the figures shown are considered to be fully adequate to cover any reasonable type of construction that might be used.

Since the building cost had to be broken down into several parts, the piling cost for the building area is shown as a separate item.

The railroad trackage shown is that required to place a single track at the rear of the building from the southern edge of Pattison Avenue. Wherever lead-in tracks serve several sections, this trackage area is apportioned among them.

Service area and area set aside for allied industries

Since it cannot be known what allied food businesses will want facilities in the food center, and since the facilities to be constructed in the service area have not yet been determined, it is not possible to estimate costs of construction in these two segments of the food center.

SUMMARY OF INVESTMENT

From the above figures it appears that the total cost of the facilities that are likely to be required in the initial development of the market for the 7 commodity groups will be $32,384,565 (table 22). Added to the cost of $6,186,000 for the purchase of the site and putting it into condition to build, the estimated total investment is $38,570,565. This figure does not include the cost of $9,382,000 for streets, water mains, and sewers which are normally paid by the city and which, therefore, will not have to be reflected in the rents charged for the use of facilities in the food center.

WHO SHOULD BUILD AND MANAGE THE FOOD DISTRIBUTION CENTER

Facilities of the type described have been built and operated in various cities throughout the country in a variety of ways. In some localities, such markets have been established by the State or city government. In others, public benefit corporations have been created for this purpose. In still others, such facilities have been built by private corporations, either profit or nonprofit. In Philadelphia, the plans for building and operating the proposed food distribution center have been agreed upon.[6] Essentially, the Philadelphia plan consists of having the city acquire the site and place it in condition to build, and transferring the site on a stage-by-stage basis to a nonprofit corporation, called the Food Distribution Center, for the development of facilities and the management of those facilities.

For the acquisition of the land, the city would use its Redevelopment Authority. A report of the Authority dated November 2, 1955, to the Council of the City of Philadelphia, provides the basis for the organization in the contract between the Authority and Food Distribution Center. The contract states that the Authority shall acquire good and marketable title to the land; demolish substantially all structures on it, grade and fill the site, defray the cost of municipal facilities consisting of paving public streets and installing water and sewer services under the streets, and convey the property to Food Distribution Center. It also states that the corporation shall develop, operate, and service the food center; that it shall be governed by a Board of Directors consisting of not more than 35 members, 9 of whom would be directors ex-officio by reason of their official capacity in the government; that it shall be embodied with powers to lease land for a period not exceeding 25 years with option to renew for an additional 25 years, and to sell land with the written consent of the Authority; and that it shall pay annually to the city 5 percent of the gross rentals received from tenants under lease and licensing agreements, in addition to a sum payment of $10,000 annually in consideration of the contract. The contract further states that upon the completion of the entire development, or upon the expiration of the contract (50 years from the date of the contract), the Authority may require the Corporation to convey to the city of Philadelphia title and interest in all land and buildings.

Although the exact method of constructing the facilities has not been determined, several methods could be used. One way of proceeding would be to have Food Distribution Center prepare a master plan and lease or sell sites to individual firms who would arrange for the construction of their own buildings. However, it would be difficult to follow this approach in providing all the facilities included in the layout. Many of the facilities, including railroad tracks, driveways, parking areas, etc., would be provided for joint use of a number of tenants. Inasmuch as many of the smaller firms would be located in a multiple-store building, it is not feasible for each individual tenant to construct, finance, and operate his own unit. To get the facilities built and properly operated, it will be necessary for Food Distribution Center to do more than make land available.

An opposite approach would be for Food Distribution Center, on the basis of sound leases from responsible firms and agreed-upon building plans, to build the facilities needed by every operator on the market, leasing such facilities to each operator and handling all management problems directly with each individual firm. This approach would place tremendous operating responsibility on Food Distribution Center. It would have to collect rentals regularly from

[6] Detailed information on other types of ownership and methods of financing may be obtained from a publication entitled "Wholesale Food Marketing Facilities—Types of Ownership and Methods of Financing," Mktg. Res. Rpt. No. 160, Agr. Mktg. Serv., U. S. Dept. Agr.

each tenant on the market, handle all repairs of such facilities, take the responsibility for all general problems such as street sweeping, garbage removal, janitor service in certain parts of the facilities, street repairs, and railroad switching service, traffic management, regulation of hours of selling, and many other activities of this type. The maintenance of a competent staff to handle so many varied problems would be difficult. Hence, it would appear likely that the Corporation would not want to go this far in construction and management.

Since neither of these extremes appears to be entirely satisfactory, it is probable that Food Distribution Center will follow an approach somewhere between these extremes. There are several possibilities. One is to have Food Distribution Center build, lease, and manage all the multiple-store unit buildings, and lease or sell sites to the individual firms that would build and operate the detached buildings. Although this approach would ease the burden of management for Food Distribution Center, there might be some difficulties in following it completely. Many large firms do not want to own the warehouses in which they operate, but prefer to lease them. To take care of such firms, Food Distribution Center would either have to build the facilities, or make arrangements to have other investors construct such buildings. Furthermore, if Food Distribution Center attempted to build all multiple-store units and handle all the operating details, the tasks of management would be almost as great as those described in the preceding paragraph.

The exact arrangements for building and operating the facilities will have to be determined in consultation with prospective tenants. It is assumed that Food Distribution Center will deal directly with many large firms that will operate in separate buildings, but instead of dealing directly with individual smaller firms, it will deal with several corporations set up by various groups of users. Several combinations are possible. For instance, firms operating in the fresh fruit and vegetable, poultry and egg, and seafood sections of the facilities might form one corporation to deal with Food Distribution Center on their facilities and to manage their day-to-day operations. Another corporation might be formed by firms engaged in the wholesaling of meat and dairy products. A third might have responsibility for the refrigerated warehouse and frozen food building, while a fourth might be comprised of dry grocery wholesalers and operators of allied types of food wholesaling. A fifth corporation might be established for the administration building, and Food Distribution Center might handle directly with individual tenants such miscellaneous facilities as garages, motel, and other buildings in the service area. However, it cannot be known definitely what combinations will be most desirable until negotiations with the tenants begin, for they may prefer different combinations or a different number of corporations from the ones suggested. The above combinations are shown merely for illustrative purposes and are not necessarily the most suitable for the tenants who will use the facilities in the new food distribution center.

Since these five management corporations probably would be established and operate in the same manner, the procedure for only one—that for fruits, vegetables, poultry, eggs, and seafoods—will be described.

Wholesalers who desire to be located in this section of the food center would apply for a corporation charter.

All common stock of the corporation should be owned by the occupants of the facilities. The number of shares of stock owned by each tenant should be based on the amount of facilities he would occupy. The layout for this section shows 120 store units for fresh fruit and vegetable dealers, 2 for restaurants, 35 for poultry and egg wholesalers, and 20 for seafood handlers, making a total of 177 store units in this area. In addition, a container shed, costing roughly twice as much as a store unit, would make the structures in this area equivalent to 179 units. In order to obtain a lease on the facilities, each operator might be required to purchase 100 shares of stock in the corporation for each store unit he would occupy. Thus, an operator large enough to require 3 store units would buy 300 shares of common stock. If leases were obtained for the equivalent of 179 store units, the total amount of stock outstanding would be 17,900 shares. As additional units are built, the amount of stock outstanding would be increased by 100 shares for each unit bulit.

The price per share for this stock would be determined by the amount of equity money which the corporation would have to provide to be able to obtain the remaining funds needed for the construction of this section of the food center. Undoubtedly, the trade corporation would have to raise more funds to provide equity money if it undertakes to construct its own buildings than it would have to raise if Food Distribution Center retains title to the facilities and merely leases them to the trade corporation. To illustrate this procedure, the price of $25 is assumed for these shares. Therefore, these operators would have to pay into the treasury of their corporation $2,500 for each store unit they lease. With this capital amounting to $447,500, and the contracts to lease signed by responsible firms, the trade corporation then would be in a position to work out arrangements with Food Distribution Center for the construction and operation of the facilities.

The trade corporation might lease the land from Food Distribution Center and arrange for the construction of its own buildings, or it might arrange for Food Distribution Center to finance and construct the buildings and lease them in their entirety to the trade corporation to operate. If the trade corporation undertakes to own its

facilities, the tenants would have to raise a larger sum than if they merely are leasing the facilities from Food Distribution Center. Hence, in the former event the price per share of stock would be higher than in the latter. In the latter case the trade corporation would pledge its paid-in capital and assign its leases with individual tenants to Food Distribution Center as partial security for the investment which it would be called upon to make when developing the facilities.

The trade corporation would work directly with Food Distribution Center in all problems in connection with the construction of the facilities and, when they are completed, would handle all problems of management in this section of the market, collecting rents from the individual tenants and taking care of all expenses such as street cleaning, street lighting, garbage removal, repairs, traffic management, policing, taxes, office expenses of the trade corporation, and in addition would pay monthly to the Food Distribution Center a total amount of rent sufficient to make amortization payments of the loan with reasonable reserves, and cover its appropriate share of the operating expenses of Food Distribution Center.

With an arrangement of this kind, the management of Food Distribution Center, instead of dealing with the many problems of the operators of the equivalent of 179 store units, would deal only with the manager of this section of the market who would be employed by the trade corporation, which is owned by the tenants. The rentals charged the individual tenants, of course, would be sufficient only to meet all the obligations of the trade corporation, with reasonable reserves, and would not be so high as to yield a profit since no useful purpose would be served in having the tenants pay excessive rents to their own corporation only to have the excess returned to them in the form of dividends. With an arrangement of this kind the management of Food Distribution Center not only would be relieved of many operating details, but also would not have to familiarize itself with the peculiarities of operating specialized kinds of food businesses.

In this manner the duties of Food Distribution Center would consist largely of developing plans for the construction of facilities; dealing with the trade corporations and with the managers of any individual facilities that might deal directly with Food Distribution Center instead of working through the management corporation; handling problems with the municipality, railroads, and other institutions that might be concerned with the operation of the entire development; and engaging in such promotional activities as may be required for getting the greatest benefit from the food center development.

Whether or not all the large wholesalers desiring detached buildings would become shareholders in the various trade corporations, in the proportion in which the cost of their facilities is of the total cost of the facilities operated by the trade corporation, or would deal directly with Food Distribution Center, will have to be determined as negotiations with tenants proceed. But for the purposes of discussing the revenue required and sources of income in the next chapter, it is assumed that the facilities described will be built, and that they will be operated by the various trade corporations under the general supervision of Food Distribution Center. As additional facilities are built, they could be handled through the trade corporations, or in the case of single occupancy buildings, by direct management between Food Distribution Center and the individual firm.

REVENUE REQUIRED AND SOURCES OF INCOME

With the type of organization proposed for the food center, the parent corporation will handle matters concerning the operation of the development as a whole, and leave to the trade corporations the operating details. The parent corporation will collect from the trade corporations an amount of rent sufficient to cover amortization payments on the loan with reasonable reserves and their share of the operating expenses. The payments to the city of 5 percent of gross rentals plus the lump-sum payment of $10,000 can be made from the interest that would be collected from the trade corporations on the value of the land.

The costs estimated in this section apply to the commodity groups, which compose four trade corporations, referred to as follows:

A. Fresh fruits and vegetables, poultry and eggs, and seafoods.
B. Meats and dairy products.
C. Dry groceries.
D. Refrigerated warehouse and frozen food building.

No attempt has been made to estimate operating costs of allied industries in the food center, nor of the administration building and other service facilities. Since these facilities will be self-liquidating, their omission does not materially affect this discussion of the costs of operating the commodity groups. The acreage designated for their use will be set aside by the city until such time that the Food Distribution Center will need it for development purposes.

OPERATING COSTS OF FOOD CENTER, THE PARENT CORPORATION

The operating expenses of Food Distribution Center, which will have to be covered by rentals collected from the trade corporations, will consist mainly of the salaries of the overall management staff, fees for special services, office rent, travel and per diem of board members, advertising and promotion, office supplies and equipment, maintenance and repairs on equipment, insurance, telephone and telegraph, utilities, and a con-

tingency fund to allow for variations in these estimates. In addition, the parent corporation will make to the city the annual lump-sum payment of $10,000 and a 5-percent fee on gross rentals, but the income required to meet these obligations can be obtained from interest received on the value of the land. Estimates of these costs are shown below.

Engineering and other costs of developing various parts of the center are not included in operating costs because they are considered a part of the construction costs. It also is assumed that real estate taxes would be paid directly by the trade corporations and owners of separate buildings.

Cost item	*Dollars*	*Dollars*
Personal services:		
Manager	25, 000	
Assistant manager	12, 000	
Secretary	5, 000	
Clerk	4, 000	
Legal, auditing, and other fees for special services	15, 000	
Subtotal		61, 000
Office rent	2, 000	
Travel and per diem of board members	3, 500	
Advertising and promotion	5, 000	
Office supplies and equipment, including automobile	4, 000	
Maintenance and repairs on equipment	1, 500	
Insurance—fire and comprehensive, liability, and automobile	1, 000	
Telephone and telegraph	1, 000	
Utilities	1, 500	
Miscellaneous expenses	8, 000	
Contingencies	11, 500	
Subtotal		39, 000
Total		100, 000

TAXES TO BE PAID BY THE TRADE CORPORATIONS

Each trade corporation will pay taxes on land, buildings, and other taxable facilities on the basis of the current tax rate and the assessed valuation of property in the city of Philadelphia. The tax rate for the year 1957 is reported to be $3.38 per $100 of assessed valuation, the latter being 62 percent of the current value, which, for purposes of the food center development, is assumed to be the same as the investment. On this basis, table 23 shows the amount of taxes that would be paid by the various trade corporations.

INCOME REQUIRED FOR DEBT SERVICE

If the proposed market is to be self-liquidating, sufficient income will have to be obtained from rentals to pay all costs, including amortization payments on loans, interest on borrowed capital, taxes, and operating expenses. The proportion of the total investment that might be borrowed on a mortgage loan and the terms of the loan will depend to some extent on the money market. Facilities of the type described should not become obsolete in less than 20 to 30 years, and very likely will be useful over a much longer period. Such facilities are of durable construction and, with only minor alterations, can be converted for use by many types of occupants. Therefore, it is assumed that mortgage loans could be obtained for 65 percent of the total funds needed, and that these loans would run for 25 years at an interest rate of 5 percent. To service such a loan would require annual payments of $70.95 per $1,000 of investment.

TABLE 23.—*Estimated taxes to be paid by the trade corporations in the proposed food distribution center, Philadelphia, Pa.*

	Trade corporation	Investment in land and facilities [1]	Assessed valuation [2]	Amount of tax [3]
		Dollars	*Dollars*	*Dollars*
A.	Fresh fruits and vegetables	3, 879, 929	2, 405, 556	81, 308
	Poultry and eggs	1, 058, 101	656, 022	22, 173
	Seafoods	582, 122	360, 916	12, 199
	Subtotal	5, 520, 152	3, 422, 494	115, 680
B.	Meats and meat products	9, 852, 086	6, 108, 293	206, 460
	Dairy products	2, 336, 149	1, 448, 413	48, 957
	Subtotal	12, 188, 235	7, 556, 706	255, 417
C.	Dry groceries	11, 155, 814	6, 916, 605	233, 781
D.	Refrigerated warehouse and frozen food building	7, 179, 269	4, 451, 147	150, 449
	Total	36, 043, 470	22, 346, 952	755, 327

[1] See table 22, p. 46.
[2] Based on an assessed valuation of 62 percent of property value.
[3] Based on the reported 1957 city tax rate of $3.38 per $100.

There are several ways of obtaining the remaining 35 percent of the total funds needed. In the first place, part of these funds would consist of the money that the city has placed into the purchase and development of the land. Even though the city will own all the buildings constructed on its land, it still is reasonable to charge against the properties interest on the value of the land. The proportion of the total value of the market facilities represented by the value of the land varies widely among the various sections, depending upon the cost of the buildings and the proportion of land covered by buildings. On the average, it amounts to about 10 percent of the investment in the facilities planned. However, in the section proposed for dealers in fresh fruits and vegetables, poultry, eggs, and seafoods the land value approaches 20 percent of the total cost, whereas in the frozen food section it is less than 5 percent.

Even if the city retains ownership of the facilities, some portion of the funds needed for their development might be obtained from the trade corporations that would lease and manage the various sections of the market. However, it will be more difficult to obtain funds in this way if the city retains ownership than it would be if the trade corporations took title to their respective sections of the food center. In the latter event, it would be reasonable to expect the trade corporations to raise about 10 percent of the total funds required by stock sales to their tenants. Such a sum also might be raised in this manner if the lease agreement between Food Distribution Center and the trade corporations contained an option to buy at an agreed-upon price. But unless some arrangement is made whereby the trade corporations can hope to acquire title to the facilities, the amount of funds that might be expected from this source would be smaller. The value of the land, plus any funds that might be raised by the trade corporations in a city-owned facility, probably would amount to no more than 20 to 25 percent of the total funds required. If the mortgage loan produces only 65 percent of the funds, this would leave another 10 to 15 percent to be raised in some other manner. Possible ways of raising these funds would include the sale of preferred stock or debenture bonds, or, if the city retains ownership, the sale of some of the land in the area to large firms for the construction of their own buildings.

Obviously, until a financial plan is worked out, the terms of the loans of these varying amounts cannot be known. However, for the purpose of determining the amount of rentals that will have to be charged for the various facilities, it is assumed that an interest rate of 6 percent would have to be paid on all funds in excess of the 65-percent loan to be amortized. Table 24 shows the income that would have to be raised by each trade corporation to amortize 65 percent of the investment and to pay interest on the remaining 35 percent.

TABLE 24.—*Estimated income required by the trade corporations for debt service, in the proposed food distribution center, Philadelphia, Pa.*

	Trade corporation	Investment in land and facilities [1]	Amortization payments per year [2]	Interest required on the amount not amortized [3]	Total income required for debt service
		Dollars	*Dollars*	*Dollars*	*Dollars*
A.	Fresh fruits and vegetables	3, 879, 929	178, 932	81, 479	260, 411
A.	Poultry and eggs	1, 058, 101	48, 797	22, 220	71, 017
A.	Seafoods	582, 122	26, 846	12, 224	39, 070
	Subtotal	5, 520, 152	254, 575	115, 923	370, 498
B.	Meats and meat products	9, 852, 086	454, 354	206, 894	661, 248
B.	Dairy products	2, 336, 149	107, 737	49, 059	156, 796
	Subtotal	12, 188, 235	562, 091	255, 953	818, 044
C.	Dry groceries	11, 155, 814	514, 478	234, 272	748, 750
D.	Refrigerated warehouse and frozen food building	7, 179, 269	331, 090	150, 765	481, 855
	Total	36, 043, 470	1, 662, 234	756, 913	2, 419, 147

[1] See table 22, p. 46.

[2] On the basis of 65 percent of the investment in land and facilities, for 25 years at 5 percent ($70.95 per $1,000 of investment).

[3] The interest rate is assumed to be 6 percent.

OPERATING COSTS OF THE TRADE CORPORATIONS

The main operating costs of the trade corporations will consist of salaries for the manager and other employees, fees for special services, office rent, travel, advertising and promotion in the early period of operation, office supplies and equipment, maintenance and repairs on equipment and facilities, communication services, insurance, and utilities. In addition, each trade corporation must pay its prorated share of the operating costs of the parent corporation, and a debt reserve of 20 percent of the annual amortization payments should be set up. At the end of 5 years, this reserve will be equal to the amortization payment for 1 year, at which time the charge might be discontinued. Estimates of these costs for each of the four trade corporations are shown in table 25.

Office space for each trade corporation could be provided by adding a second floor over several store units within its own section of the food center area, or it could be rented in the administration building.

TOTAL REVENUE REQUIRED BY THE TRADE CORPORATIONS

Estimates of the amount of revenue needed by the trade corporations to meet the debt service, taxes, and operating costs are shown in table 26. The $720,189 for the refrigerated warehouse and frozen food building (trade corporation "D"), as explained in table 25, does not include the cost of

TABLE 25.—*Estimated operating costs of the trade corporations in the proposed food distribution center, Philadelphia, Pa.*

Cost item	Trade corporation			
	A	B	C	D [1]
Personal services:	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Manager	15,000	15,000	10,000	
Assistant manager	7,000	7,000		
Bookkeeper-clerk	5,000	5,000	[2] (½) 2,500	
Secretary	5,000	5,000	(½) 2,500	
Switchboard operator	3,600	3,600		
Watchman and laborers	[4] 16,000	[4] 16,000	4,000	
Janitor	2,600	2,600		
Street cleaning	20,000	12,000	6,000	
Legal, auditing, and other special fees	5,000	5,000	3,000	
Subtotal	79,200	71,200	28,000	
Office rent	2,000	2,000	1,200	
Travel and per diem	2,400	2,400	1,200	
Advertising and promotion	3,000	3,000	2,000	
Office supplies and equipment	1,500	1,500	1,500	
Maintenance and repairs [3]	22,465	54,828	49,906	
Telephone and telegraph	600	600	600	
Insurance:				
Fire and comprehensive [4]	2,846	7,691	7,171	
Liability [5]	875	875	875	
Utilities	4,000	4,000	4,000	
Subtotal	39,686	[6] 76,894	68,452	
Prorated share of operating costs of parent corporation [7]	19,120	42,230	38,650	([8])
Debt reserve [9]	50,915	112,418	102,896	66,218
Total	188,921	302,742	237,998	66,218

[1] It appears likely that the corporation operating the refrigerated warehouse and frozen food building simply will lease space (store units) to the frozen food wholesalers and render little management services to the operators in that space, and that such services will be an integral part of the cost of operating the refrigerated building.

[2] Numbers in parentheses refer to number of employees in those cases where more or less than one employee within the category under consideration is required.

[3] Based on one-half of 1 percent of the capital investment in facilities, excluding land.

[4] Based on 80 percent of the cost of buildings and calculated at the rate of $1.15 per $1,000.

[5] Based on $500,000 coverage and a rate of $1.75 per $1,000 coverage.

[6] Does not include the cost of operating the steam plants in the meat multiple-type stores.

[7] Prorated according to the proportion that the investment by trade corporations "A," "B," and "C" is of the total investment by these corporations.

[8] At this time it is not known whether the refrigerated warehouse and frozen food building will be owned by the parent corporation or by a private concern. Therefore, it cannot be assumed that the parent corporation would derive income from this building to pay any part of its operating expenses.

[9] Based on 20 percent of annual amortization payments. To be discontinued when the reserve is equal to the amortization payments for 1 year.

operating the facility. The total amount needed by all trade corporations would be about 4 million dollars.

SOURCES OF REVENUE FOR TRADE CORPORATIONS

The revenue needed for operating each trade corporation must be derived from fees and rentals charged for the use of facilities under its jurisdiction. The rental rates should be sufficient only to break even, since the corporations will not be profit-making organizations. Table 27 prorates these charges among the various facilities on the basis of their cost, and shows rental rates per square foot as well as the total for the various sections under each trade group.

SOME BENEFITS FROM A MODERN FOOD CENTER

One of the principal reasons for proposing a new food distribution center in Philadelphia is that such a center should bring about a substantial reduction in costs of distributing food through more efficient handling. It is possible to estimate some of the benefits in terms of monetary savings, especially those to wholesale handlers; whereas others, although obvious and having great merit, cannot be measured at all. The estimated savings shown below are based on the selected marketing costs discussed in an earlier chapter (pp. 17 to 20), and are figured on the 1953 volume of 68,530 carlot equivalents handled by the 340 wholesalers who have economic justification for moving to a new food center.

In making an appraisal of the savings that would accrue to the wholesalers in the new food center, deductions have not been made from these savings for costs of installing temperature-controlled rooms and special equipment.

CARTAGE TO WHOLESALE STORES

Since the food center would have direct rail connections to the stores of wholesalers who receive products by rail, cartage would be reduced considerably. The full amount of cartage costs would not be saved because unloading from the rail cars into the stores still would be necessary. Only in the case of frozen foods, where the cartage is principally from cold storage warehouses to wholesalers' stores, would the full amount be saved by wholesalers occupying facilities in the market. In addition, the cost of cartage for the intra-market movement between wholesalers should be reduced considerably. As shown in table 28, the total annual saving on 17,765 carlots on which cartage was incurred in 1953 is estimated at $1,046,948.

PORTERAGE

Wholesale stores with front and rear platforms at truck-bed and rail-car-floor level would facilitate the transfer of products between trucks, rail cars, and wholesale stores. The wide streets on which trucks can back up to platforms would give access to more trucks at a time and make loading and unloading easier. Furthermore, mechanical equipment could be used in moving food supplies into and out of buildings. The estimated annual saving on porterage on 85,405 carlot equivalents on which this saving would accrue totals $704,243 (table 29).

EXCESSIVE HANDLING WITHIN BUILDINGS

The facilities proposed would permit an unimpeded flow of products, provide adequate space for shipping and receiving supplies, and have rooms of sufficient size for efficiently performing essential operations. Furthermore, most of them would be one-story structures. Table 15 (p. 18) shows the cost of only that portion of internal handling considered to be excessive. Thus, the full amount of $935,070 could be saved in a new food center.

SPOILAGE, DETERIORATION, BREAKAGE, AND SHRINKAGE

Not all losses from spoilage, deterioration, breakage, and shrinkage can be eliminated; nevertheless, annual savings of $981,843 are estimated as shown in table 30.

RENTALS

The data shown in table 31 are based on the rental value of buildings now occupied by 310 independent wholesalers and the rentals that these same wholesalers would have to pay on the multiple-store units proposed for them in the new food center. It was not possible to include rental figures for the 30 dealers for whom detached buildings are planned, for their buildings will be constructed according to individual specifications.

Savings would accrue to dealers in only 2 commodity groups—(1) fresh fruits and vegetables and (2) seafoods. Their savings would amount to 2½ percent and 6 percent, respectively. Their rental rates per square foot, however, would be 28 cents and 17 cents higher, respectively, in the new food center.

Dealers in all other commodity groups would pay larger rents in the food center than at present. The rates per square foot would range from 39 cents more for the dairy products group to $1.17 more for the poultry and egg group.

Although the rental rates for most groups would be considerably higher in the new food center than in the old markets, the food handlers would be operating in up-to-date facilities, which would

TABLE 26.—*Estimated total revenue required by the trade corporations in the proposed food distribution center, Philadelphia, Pa.*

Cost item	Trade corporation				Total revenue required
	A	B	C	D	
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Taxes	115, 680	255, 417	233, 781	150, 449	755, 327
Debt service	370, 498	818, 044	748, 750	481, 855	2, 419, 147
Operating costs	188, 921	302, 742	237, 998	[1] 66, 218	795, 879
Contingency (10 percent) on taxes and operating costs	30, 460	55, 816	47, 178	21, 667	155, 121
Total	705, 559	1, 432, 019	1, 267, 707	720, 189	4, 125, 474

[1] This figure includes only the cost of taxes, debt service, and debt reserve, and does not include operating costs of the facility.

TABLE 27.—*Estimated annual rentals that would have to be charged on facilities by the trade corporations in the proposed food distribution center, Philadelphia, Pa.*

Trade corporation	Number of units	Amount of space		Annual rent		Annual rental rate per square foot
		Per unit [1]	Total [1]	Per unit	Total [2]	
	Number	*Square feet*	*Square feet*	*Dollars*	*Dollars*	*Dollars*
A. Fresh fruits and vegetables	120	2, 497. 5	299, 700	3, 984	478, 080	1. 60
Container shed	1	20, 000	20, 000	7, 409	7, 409	0. 37
Restaurants	2			5, 195	10, 390	
Poultry and eggs	35	2, 497. 5	87, 412	3, 864	135, 240	1. 55
Seafoods	20	2, 497. 5	49, 950	3, 722	74, 440	1. 49
Total					705, 559	
B. Meats and meat products:						
Multiple units	95	3, 150	299, 250	4, 130	392, 350	1. 31
Restaurant	1			5, 322	5, 322	
Detached stores	22	[3]	478, 950	[3]	759, 829	1. 59
Subtotal					1, 157, 501	
Dairy products:						
Multiple units	30	2, 755	83, 250	3, 680	110, 400	1. 33
Detached stores	2	[3]	102, 500	[3]	164, 118	1. 60
Subtotal					274, 518	
Total					1, 432, 019	
C. Dry groceries:						
Multiple units	40	7, 150	286, 000	7, 952	318, 080	1. 11
Detached stores	6	[3]	734, 750	[3]	949, 627	1. 29
Total					1, 267, 707	
D. Frozen food stores	22	7, 480	164, 560	15, 304	[4] 336, 688	2. 05
Refrigerated warehouse			147, 440		[4] 383, 501	2. 60
Total					720, 189	
Grand total					4, 125, 474	

[1] All multiple-store units include mezzanine or second-floor space in addition to the first-floor space. Detached stores have only first-floor space.

[2] Some of these figures differ slightly from the figure obtained by multiplying the rental rate per square foot by the total number of square feet, because the rental rate per square foot is rounded off to the nearest cent.

[3] Dealers in detached stores need varying amounts of floor space.

[4] This rate does not cover the cost of the refrigerant, although the building cost includes the cost of refrigeration equipment for the entire building.

Annual rentals to be paid by holders of space in the frozen food stores and the refrigerated warehouse are based on the amount of first-floor space contained in each. The frozen food stores occupy 46.75 percent of the first-floor area, whereas the refrigerated warehouse occupies 53.25 percent. It is recognized that the stores have second-floor offices over part of their space, but the cost of the office space is approximately offset by the fact that about half the first-floor space is not refrigerated.

make possible the use of modern handling equipment for moving products into, within, and out of the buildings. The use of modern equipment, in turn, would reduce labor costs. The savings would offset by a considerable margin the increased rentals and the cost of equipment that the wholesalers would want to use in their modern facilities.

TABLE 28.—*Estimated annual savings on cartage that would accrue to 340 wholesalers in a new food center, by type of commodity, Philadelphia, Pa.*

Type of commodity	Volume on which savings are based	Average savings per carlot	Total savings
	Carlot equivalents	*Dollars*	*Dollars*
Fresh fruits and vegetables	7, 400	73. 90	546, 860
Poultry and eggs	0	0	0
Seafoods	25	40. 00	1, 000
Meats and meat products	6, 000	42. 50	255, 000
Butter and cheese	1, 200	48. 00	57, 600
Dry groceries	1, 530	51. 70	79, 101
Frozen foods	1, 610	66. 70	107, 387
Total or average	17, 765	58. 93	1, 046, 948

TABLE 29.—*Estimated annual savings on porterage that would accrue to 340 wholesalers in a new food center, by type of commodity, Philadelphia, Pa.*

Type of commodity	Volume on which savings are based [1]	Average savings per carlot [2]	Total savings
	Carlot equivalents	*Dollars*	*Dollars*
Fresh fruits and vegetables	49, 900	7. 70	384, 230
Poultry and eggs	6, 820	11. 50	78, 430
Seafoods	2, 475	7. 50	18, 563
Meats and meat products	14, 000	7. 50	105, 000
Butter and cheese	1, 200	6. 60	7, 920
Dry groceries	8, 300	10. 00	83, 000
Frozen foods	2, 710	10. 00	27, 100
Total or average	85, 405	8. 08	704, 243

[1] Some of the figures in this column are lower than the figures in table 14, because some of the firms now are operating in facilities with good platforms, and it is not anticipated that these wholesalers would make any savings in porterage. The figures represent the volume of only those who are operating in such poor facilities that savings could be effected.

[2] The dollar savings per carload are for those dealers operating in substandard facilities and should not be compared with the carlot porterage costs in table 14, which are the weighted average for both the efficient and inefficient facilities.

ELIMINATION OF TRAFFIC CONGESTION

Earlier in this report, it was pointed out that trucks moving to and from the present markets in the congested area of the city are subjected to considerable delays. For this study, it was impossible to determine the total number of vehicles that haul products daily to wholesale food stores in Philadelphia, the number hauling products away from such stores, and the extent of the delays because of traffic congestion.

A study made several years ago of the Dock Street fruit and vegetable market alone showed that on a peak day in July nearly 600 trucks hauled products to the market and nearly 1,500 hauled them away. In this earlier study 50 of these trucks bringing products to the market, and 54 buyers' trucks hauling products away, were timed to see how much time was consumed within the market area and how this time was used. That study showed that the incoming trucks standing in the market area lost an average of 82 minutes each, while buyers' trucks lost an average of 16 minutes. However, some of the incoming trucks spent 542 minutes standing, and some of the buyers' trucks spent 173 minutes.

It should not be construed that all the time lost standing in the market was due to traffic congestion which could be eliminated, nor that the traffic situation in the Dock Street area is representative of all markets. These delays in the summer months are not representative for other parts of the year. On the other hand, these delays do not include the time lost in traveling through the congested parts of the city to and from the market area.

The proposed facility would be located outside the congested area of the city, where it could be reached easily by through streets and arterial highways. The streets within the food distribution center are wide enough to handle traffic expeditiously, and sufficient parking areas are provided to keep idle trucks out of the way of moving vehicles. Under these conditions, it is felt that traffic congestion should be almost eliminated. See page 16 for earlier discussion of traffic problem.

In the proposed food center a complete line of products could be obtained in the one area, thereby eliminating the need for vehicles to move from one district to another. This, of course, would further reduce the time required by buyers' vehicles. Savings to persons doing business in the market area resulting from the elimination of traffic congestion are estimated at more than 2 million dollars a year.

Not all these savings through the elimination of traffic congestion could be achieved in the early stages of the development of the food center. However, since the facilities proposed for the first construction replace those in the most congested areas, the bulk of these savings should be made with the completion of the initial phases

TABLE 30.—*Estimated annual savings on spoilage, deterioration, breakage, and shrinkage that would accrue to 340 wholesalers in a new food center, by type of commodity, Philadelphia, Pa.*[1]

Type of commodity	Volume on which savings are based	Total wholesale value	Rate of savings	Total savings
	Carlot equivalents	*Dollars*	*Percent*	*Dollars*
Fresh fruits and vegetables	28, 650	55, 867, 500	1. 0	558, 675
Poultry and eggs	3, 840	27, 318, 400	0. 5	136, 592
Seafoods	1, 250	20, 000, 000	0. 5	100, 000
Meats and meat products	18, 000	186, 576, 000	0. 1	186, 576
Total or average	51, 740	289, 761, 900	0. 3	981, 843

[1] Savings were computed on the basis of the combined judgment of the wholesalers themselves and the persons who were in charge of the survey.

TABLE 31.—*Estimated rental value of buildings presently occupied by 310 independent wholesalers compared with rentals on multiple-store units proposed for them, by type of commodity, Philadelphia, Pa.*

Type of commodity	Number of wholesalers	Rental value [1]				Increase or decrease in total rentals	
		Present buildings		Proposed multiple-store buildings			
		Total	Per square foot	Total	Per square foot	Amount	Percentage
	Number	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Percent*
Fresh fruits and vegetables	116	490, 000	1. 32	478, 080	1. 60	−11, 920	−2. 43
Poultry and eggs	37	78, 200	0. 38	135, 240	1. 55	+57, 040	+72. 94
Seafoods	28	79, 000	1. 32	74, 440	1. 49	−4, 560	−5. 77
Meats and meat products	70	259, 000	0. 64	392, 350	1. 31	+133, 350	+51. 49
Dairy products	14	64, 300	0. 94	110, 400	1. 33	+46, 100	+71. 70
Dry groceries	23	193, 000	0. 45	318, 080	1. 11	+125, 080	+64. 81
Subtotal or average [2]	288	1, 163, 500	0. 76	1, 508, 590	1. 36	+345, 090	+29. 66
Frozen foods	22	190, 500	([3])	336, 688	2. 05	+146, 188	+76. 74
Total or average	310	1, 354, 000	[4] 0. 76	1, 845, 278	1. 45	+491, 278	+36. 28

[1] See table 20, p. 35, for amount of floor space covered by these rentals.

[2] Subtotals for the 6 commodity groups listed above are given to facilitate comparisons with information given for the same groups in table 20, p. 35.

[3] Because of the wide variations in the facilities used by frozen food wholesalers, a comparison of rentals on a square-foot basis is impractical.

[4] Frozen food wholesalers are excluded.

of the market. Therefore, it is reasonable to expect savings of about 1.5 million dollars annually through the elimination of traffic delays.

SUMMARY OF SAVINGS ON SELECTED MARKETING COSTS

The measurable savings that might be expected to follow provision of the recommended facilities for a food distribution center in Philadelphia would amount to about 4.5 million dollars annually. This amount includes the savings of 1.5 million dollars in traffic delays discussed above. The remaining 3 million dollars would accrue to the 340 wholesalers through savings in costs of cartage, porterage, internal handling, and spoilage, deterioration, breakage, and damage, even after making deductions for increased rentals for some commodity groups (table 32). This represents an annual saving of about $9,000 per wholesaler. It should be reiterated at this point that the wholesalers themselves are expected to provide any special features which they may need, such as refrigerated or temperature-controlled rooms and equipment. Therefore, a large part of the savings in the first year of operation no doubt would be used for these special needs.

TABLE 32.—*Summary of estimated annual savings on 5 selected marketing cost items that would accrue to 340 wholesalers in a new food center, by type of commodity, Philadelphia, Pa.*

Type of commodity	Cartage	Porterage	Handling within buildings	Spoilage, deterioration, breakage, and damage	Rentals [1]	Total savings	
						Amount	Percentage of total
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Percent*
Fresh fruits and vegetables	546, 860	384, 230	143, 250	558, 670	+11, 920	1, 644, 930	51. 73
Poultry and eggs	0	78, 430	11, 520	139, 650	−57, 040	172, 560	5. 43
Seafoods	1, 000	18, 563	5, 000	100, 000	+4, 560	129, 123	4. 06
Meats and meat products	255, 000	105, 000	270, 000	186, 576	−133, 350	683, 226	21. 49
Butter and cheese	57, 600	7, 920	16, 000	[2]	−46, 100	35, 420	1. 11
Dry groceries	79, 101	83, 000	354, 900	[2]	−125, 080	391, 921	12. 32
Frozen foods	107, 387	27, 100	134, 400	[2]	−146, 188	122, 699	3. 86
Total	1, 046, 948	704, 243	935, 070	984, 896	−491, 278	3, 179, 879	100. 00

[1] The savings on rentals cover only the 310 independent wholesalers for whom space is provided in multiplestore buildings in the proposed food center.

[2] Losses on these commodities were insignificant; therefore savings are not shown.

OTHER BENEFITS

The benefits of a new wholesale food district which cannot be measured in dollars would undoubtedly be greater than the dollar ones, and would be shared by wholesalers, buyers, farmers, transportation agencies, market employees, consumers, and the city of Philadelphia.

To wholesalers. In addition to the specific savings enumerated, wholesalers would find that in a new market it would be possible for them to transact their business with fewer man-hours of labor per day. While products could be unloaded into their stores at any time of the day, with regulated selling hours which could be established in a unified market, the sales period could be much shorter than it is at present. Many merchants no longer would find it necessary to operate in two or more places. Furthermore, by operating more efficiently in the improved facilities it is reasonable to expect that the competitive position of the wholesalers would be improved, and their volume of business would be increased. All these developments would be of great monetary value to them.

To buyers. In a consolidated market of the kind proposed, retail grocers in the Philadelphia area and out-of-town buyers who look to Philadelphia as a source of supply could obtain their supplies more quickly and much more satisfactorily than at present. It would be unnecessary for them to go to several scattered markets to pick up the commodities they need, for they could find a complete line of food products in one area. Moreover, there would be no traffic congestion to delay them in making purchases, loading trucks, and getting back to their stores. Finally, it would be possible to have definite hours of selling so that all buyers would know when to get to the market to have the best selection of merchandise. Products would be available in better condition than when they are hauled from one market area to another and displayed in poor facilities over a long period. It has been reported that many out-of-town buyers who formerly came to Philadelphia to obtain food products no longer come, or come for only a portion of their supplies, because of the time required for making their purchases under present conditions. It seems likely that with satisfactory consolidated market facilities purchases by out-of-town buyers would increase.

To farmers. Farmers would benefit in several ways from satisfactory market facilities in Philadelphia. First, with the products arriving in retail stores in more satisfactory condition and with less handling expense within the market, consumers might be expected to purchase larger quantities and somewhat increase the demand for farm products. Farmers also would benefit from the improvement in the operation of the price-making forces, not only on the volume which moves through Philadelphia but also on the considerable quantities that move directly from the farm to other points and are sold on the basis of prices established in Philadelphia. Farmers who bring their products to Philadelphia in their own trucks would benefit through being able to get to the wholesale stores promptly, unload, and return to their farms in less time than is now required. The returns of some farmers for products sold in the market would improve as a result of eliminating deductions for cartage and similar services.

To transportation agencies. The railroads serving Philadelphia long have been at a disadvantage in not being able to place carlots of merchandise for unloading directly at the stores of many merchants. When shippers compare the cost of transporting their products from farm to market by rail and truck, the cost of cartage from the railroad track to the store must be considered along with the railroad freight bill, which often makes the total transportation bill when railroads

are used greater than for motor-truck shipments. Furthermore, the extra handling involved in carting the products from railroads to stores increases the time required for getting them by rail from the shipping point to the store. If the facilities suggested in the report were constructed, the railroads would benefit in two important ways: First, they would be able to place their cars next to the stores for unloading and thus be on an equal basis with the trucks. Second, the growth in the demand for space in this area that might be expected to accompany the development of a consolidated market undoubtedly would provide opportunities for the railroads to obtain larger returns from their facilities in the immediate surrounding area.

Truckers hauling products to and from the food distribution center would benefit through the elimination of traffic congestion, the ready availability of parking areas, the ability to reach without delay the stores where they wish to load or unload, and the saving in time required for getting into and out of the food center. Some truckers who drive to different parts of the city to assemble their load would be benefited by being able to get all the commodities within one area. Those truckers who come long distances, and therefore might desire to remain overnight, would benefit through the convenient lodging, eating, and other facilities that the market would provide.

To market employees. Working conditions for persons employed in food handling operations would be improved materially in a new food distribution center. Since the buildings are designed for efficient handling by proper equipment, the workers' jobs would be less arduous, their productivity would be increased, and over a period of time their hourly earnings might be expected to increase. Regular hours of work could be arranged, and large amounts of overtime or irregular employment would not be necessary. With the building of a completely new food district, the general environment for work would be improved considerably, and many conveniences not now available would be provided.

To consumers. The consumers in and around Philadelphia would benefit as much from improved market facilities as any other group. They would be able to get perishable foods at their retail stores in better condition and at more reasonable prices than under present conditions. Given the opportunity, housewives would probably purchase more of those foods needed in greater quantities in the average family diet.

To the city. The construction of a new wholesale food center would benefit the city of Philadelphia in several ways: (1) It would benefit from the increased volume of business transacted, and from the increased prosperity such a center would bring to the merchants operating in it and retailers buying there. (2) The acute traffic problem in the present market areas would be solved. (3) The facilities that might be built in the new market area would pay annual taxes of several hundred thousand dollars. (4) The removal of the wholesale food business from some of the present market areas would facilitate the redevelopment of those parts of the city. (5) The transfer of the wholesale food business to modern facilities would assist the city in the enforcement of sanitary and fire regulations and the prevention of crime. (6) Finally, when the facilities built on the city-owned land in the food center have been paid for, the city will have title to properties worth far more than its investment.

CONCLUSIONS AND RECOMMENDATIONS

All of the findings in this report support the view that a new consolidated wholesale food distribution center should be built in Philadelphia on a site of about 400 acres, located south of Oregon Avenue between Swanson and Eleventh Streets.

The new food center should be developed in stages, following a master plan in which separate sections should be set aside for the handlers of each major group of food products. Each section should be designed so that additional facilities can be built as needed and should contain its own parking areas and railroad facilities. The buildings in the food center, with few exceptions, should be one-story, rectangular, warehouse-type buildings, with covered platforms at rail car-floor or truck-bed height along each side. Insofar as possible the design of these buildings should be suitable for several types of users so that they can be modified, with small expense, to meet changes in the food industry. Large firms may occupy an entire building, but smaller firms should be grouped within buildings. **No facilities should be built that have not been previously leased to a responsible firm for a rental that will be adequate to cover all costs.** Those wholesalers who sell mostly to buyers who visit the market, such as fruit and vegetable wholesalers, should move into the new facilities as a group containing substantially all of the present operators. Those firms who take orders and deliver can move into the area one or a few at a time.

Persons responsible for developing the food center should give consideration to the needs for offices for firms not having stores. Such offices could be located in a separate administration building or on a second floor over one or more store buildings. They should be centrally located within the food center. Restaurants and public restrooms also should be provided, and the needs for a barber shop, inspection and market news offices, banks, and possible sleeping accommodations should not be overlooked.

The food center should be a union terminal,

open to all means of transportation. Railroad operations in the market could be performed either by a common operating company representing all rail lines or by some other arrangement which would give all railroads equal access. Trucks, of course, likewise should have complete access to the facilities.

If the wholesale food dealers now operating in substandard facilities in Philadelphia move into the market, an investment of approximately 38 million dollars would be required to acquire and develop the site and construct the necessary facilities for their use. When the site is fully occupied with buildings some years hence, the total investment in the completed food center might be expected to be about 100 million dollars.

It is believed that a wholesale food distribution center, built and operated along lines recommended, would bring about annual savings in distribution costs of about 4.5 million dollars per year on the volume of food handled by dealers who should be interested in moving into the market initially. These savings would come primarily from reductions in costs of cartage, porterage, handling within buildings, deterioration and spoilage, and elimination of traffic congestion. Perhaps an equal amount of benefits would accrue to wholesalers through increased efficiency, reductions in time required for operation, and increased volume of business; to buyers, who could obtain their supplies more quickly, in better condition, and at lower cost; to farmers, from improvement in the operation of the price-making forces, reductions in cost of handling their products, and in the time some of them would save in bringing products to the market; to railroads, in improving their competitive position by being able to deliver directly to wholesale houses; to truckers, through facilitating their operations; to market employees, through less arduous labor and more pleasant working conditions; to consumers, in being able to obtain food in better condition, at somewhat lower costs; and to the city, through solving traffic problems, facilitating redevelopment of certain areas, simplifying the enforcement of sanitary and fire regulations, increased taxes, and, finally, ownership of a valuable property.

In order to simplify the management of a food distribution center of this size and facilitate its efficient operation, Food Distribution Center might well consider the desirability of leaving as much of the responsibility for management as possible to the individual wholesalers or groups of wholesalers. For instance, the fruit, vegetable, poultry, egg, and seafood dealers now operating primarily in the Dock and Callowhill Streets market district might be encouraged to form one or more corporations to build or lease and operate the section of the market which they would use. A similar organization might be formed by the meat, butter, and cheese wholesalers, and another by the grocery wholesalers. A separate organization also might be formed for building or leasing and operating the refrigerated warehouse and frozen food building, which would operate some of this space as common storage and lease space to wholesale frozen food merchants. Large corporations occupying entire buildings might deal directly with Food Distribution Center. If this approach is used, Food Distribution Center would be able to develop and operate the facilities by dealing with a relatively small number of large firms and trade-owned corporations, rather than by dealing directly with the 500 or more tenants who may be expected within a period of time to locate in the center.

The United States Department of Agriculture, since the data for this study were collected and the recommendations were presented at a public meeting, has given, and will continue to give, all the assistance it can to the city of Philadelphia, the directors and managers of Food Distribution Center, transportation agencies, food dealers, architects, engineers, and financial institutions in bringing about the construction and successful operation of this food distribution center. It is hoped that through this work food distribution costs in the Philadelphia area may be held as low as possible, and that foods moving through this market from the 48 States to the 4 million consumers in the area may be handled as efficiently as possible, with a minimum of deterioration and spoilage.

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