

THE IMPACT OF OFFICES
ON RYE, NEW YORK

by

HERBERT MARTIN HEKLER

B.A., Queens College
(1960)

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE
DEGREE OF MASTER OF
CITY PLANNING

at the

Massachusetts Institute of
Technology

February, 1964

Signature of Author.

Department of City Planning, January 23, 1964

Certified by.

Thesis Supervisor

Accepted by

Chairman, Department of City and Regional Planning

ABSTRACT

Submitted to the Department of City and Regional Planning of the Massachusetts Institute of Technology in partial fulfillment of the requirements for the degree of Master in City Planning.

This thesis investigated the effect of two office buildings on the City of Rye, New York. The primary purpose was to test whether the offices provided greater tax revenues than municipal costs. The thesis analyzed both direct costs -- water, sewer, fire and police protection, etc.; and indirect costs -- primarily providing services to new resident employees. It then analyzed both direct revenues -- primarily property taxes; and indirect revenues -- property taxes of resident employees and increased assessed valuation of commercial property.

The result of this investigation was that the greatest costs were the indirect costs of new employees. These were approximately four times greater than the estimated direct costs of the offices. But the total revenues from the offices still exceed the total costs by healthy margins ranging from 5 to 1 to 9 to 1, depending on whether one assumed high or low costs. Thus the critical factor is how many new residents may be expected from office development.

A discussion of other cases and residence to work theory suggested that the ratio of employee-residents in Rye was not atypical. The most unusual factor in Rye is its outstanding planning program which guided development into areas where excess capacity of municipal services existed and carefully controlled the scale of development so that it would not exceed these capacities. With careful planning to insure the proper scale of development, almost any suburban community could have the same results as Rye.

ACKNOWLEDGMENTS

The author would first like to thank the officials of the City of Rye, who graciously gave of their time to facilitate this analysis. A Special thanks to Mr. John Woodward, who is presently the resident planner of Rye, and provided much of the data in this thesis.

Sincere thanks are also due to Mr. Frederick P. Clark, who graciously permitted me to work in his offices in Rye, permitted me to use his library, and pointed out valuable sources of information.

A special word of gratitude is also due to my thesis advisor, Professor John T. Howard. His unending patience, wisdom, and gentle humor at times of seeming disaster, guided not only this thesis, but my entire course of study at M.I.T.

And to my parents, whose financial and moral support enabled me to attend this university, many, many thanks.

TABLE OF CONTENTS

ABSTRACT	2
ACKNOWLEDGMENTS.	3
INTRODUCTION	6
PREVIOUS COST-REVENUE STUDIES.	9
Principles of This Study.	18
Schematic Outline of Costs and Revenues	19
THE CITY OF RYE - DESCRIPTION.	20
HISTORY OF OFFICE DEVELOPMENT.	24
Basic Data for The Offices.	29
DIRECT MUNICIPAL COSTS	32
Summary	37
INDIRECT COSTS	38
Summary	50
REVENUES	51
Summary	53
SUMMARY.	54
Total Costs and Revenues.	55
City Tax Rate without Offices	56
School Tax Rate without Offices	57
School Tax Rate if Land Developed for Houses.	59
City Tax Rate if Land Developed for Houses.	60
OTHER EFFECTS.	61
CONCLUSION	64
BIBLIOGRAPHY	69

LIST OF TABLES

1 - Ratio of Income to Expenditure.	10
2 - Results of Loewenstein's Study.	15
3 - Population of Rye	21
4 - Land Use Changes 1953-1962.	25
5 - Basic Data of the Offices	29
6 - Direct Municipal Costs of the Offices	37
7 - Total and Local Employees in Two Philadelphia Suburbs.	40
8 - School Costs of Resident-Employees.	46
9 - Marginal Municipal Expenditures	46
10 - Marginal Cost Per Capita.	47
11 - Total Indirect Costs.	50
12 - Taxes Added by Employee Purchases	52
13 - Total Revenues.	53

CHARTS

1 - General Principles.	18
2 - Schematic Outline of Costs and Revenues	19
3 - Zoning Requirements	26
4 - Continental Baking Company Employees.	39
5 - Employee Factors to Move Closer to Work	42

ILLUSTRATIONS

Generalized Land Use Map.	30
Photographs of the Offices.	31

INTRODUCTION

This thesis is a case study of the effect of the location of two office buildings on a rapidly maturing suburb of New York. Although traffic, appearance, and social effects will be discussed, the primary emphasis will be on a cost-revenue analysis. Cost-revenue is a term used to describe a method of analysis which measures the difference between the municipal expenditures which may be charged to a land use and the receipts from that use -- in other words the net cost.

Although the fiscal returns of a land use should probably not be a major concern of land use planning, in many communities it in fact is. As I write this I remember a planner in a suburb on Long Island who when given the task of preparing a development plan for the community, was told that he should include four industrial parks -- one for each school district. Happily, before he finished, the school districts consolidated and he was thus able to plan for industry without considering school district boundaries. But the pressure to zone for industry, because it is allegedly a gold mine of tax revenues, continues to be strong. Therefore a city planner must have accurate information on the effects of various industries if he is to plan intelligently.

One of the major land uses which has been encouraged in the suburbs is office buildings. In Westchester County alone,

the county in which this case study takes place, more than a dozen major office buildings have been constructed in the past decade. The question remains however, whether these offices produce a tax surplus for these communities. Because little information is available on this subject, the main purpose of this thesis will be to examine whether they do or not.

Municipal cost-revenue analyses are not new. Studies on the economic costs of slums were popular in the 1930's. In the 1940's and 50's, studies were made to analyze the effects of the annexation of fringe areas. Also in the 1950's, studies were made to find a "proper balance of land uses" to provide a healthy tax base.¹ Much of this has resulted in what William Wheaton has called "residential exclusion uses," for the findings were generally that with the exception of luxury housing, most residences do not "pay their way" for the services they receive.² Some have been quite explicit on this point, e.g., Homer Hoyt's Evanston study specifically asked: "Is there a minimum value for dwellings below which it is uneconomical for the city to encourage such construction?"³

¹For a complete discussion of previous cost-revenue analyses, see Ruth L. Mace, MUNICIPAL COST-REVENUE RESEARCH IN THE UNITED STATES (Chapel Hill: Institute of Government, 1961).

²William L.C. Wheaton, "Applications of Cost-Revenue Studies To Fringe Areas," Journal OF THE AMERICAN INSTITUTE OF PLANNERS, XXV, 4 (November 1959) p. 170.

³Homer Hoyt Associates, ECONOMIC SURVEY OF LAND USES OF EVANSTON, ILLINOIS. (Larchmont: Homer Hoyt Associates, 1949) p. 5.

The methods usually employed were either a model or an empirical approach which assigned proportions of municipal budgets to the various land uses in the city. Very few studies have been done working the other way -- taking actual costs from specific cases and comparing these to actual revenues. Because almost nothing has been done using this latter technique, and because it is a very useful check on other studies, this method has been chosen for this thesis.

The basic outline of how we shall proceed is: first -- discuss the contents and problems of previous studies so that we may develop a set of principles to guide this analysis; second -- present the case itself -- the city and the offices, the costs and the revenues; third -- summarize the results of the analysis, changes in tax rates, and a discussion of non-economic "other factors"; and finally present the conclusions on how much we may generalize on this case and its limiting factors.

The basic hypothesis of this thesis is that offices are valuable assets to suburban communities. This thesis has demonstrated the validity of this hypothesis.

Before any misunderstanding arises, the purpose was not to explore or comment on the propriety of the use of cost-revenue studies as a primary determinate of planning policy. It was also not intended to analyze the impact on the metropolitan region. Its purpose was simply to analyze a factual relationship between office buildings and the towns in which they may be located.

COST-REVENUE STUDIES

So much has been written concerning the effects of taxes upon industry location (some of it based on excellent studies, but much of it sheer unsubstantiated froth) that it seems amazing that there is almost nothing available concerning the effects of industrial location on taxes. More and more items are appearing in the current press to the effect that "X" community badly needs industries in order to keep taxes down, so there appears to be a general belief that industrial expansion will produce higher tax yields and therefore permit a lowering of tax rates. Yet to date researchers have not been concerned with substantiation of this thesis. There is almost no information on the subject.⁴

While six years have elapsed since the preceding statement was written, the situation has not changed greatly. Several excellent residential cost-revenue studies have been completed, but very few studies have been concerned with business uses (commercial and industrial). Based on comparisons between providing direct services to business property, e.g., roads, water, sanitation, fire and police protection, to the tax revenues received, the general consensus is that business, and in particular industrial, property is a "profitable" use of land. Leading journals still advise cities to expand their industry in order to help alleviate their mounting tax problems.⁵

According to the comprehensive survey of cost-revenue studies prepared by Ruth Mace, the following ratios of

⁴Mabel Walker, BUSINESS ENTERPRISE AND THE CITY (Princeton: Tax Institute Incorporated, 1957) p.37.

⁵ARCHITECTURAL FORUM, "Does Industry Pay Its Way" vol. 114 (January 1961) pp. 67 - 69.

municipal income to expenditures were found.

Table 1 - Ratio of Income to Expenditure⁶

	Community Type Classification		
	Small Suburban	Large Suburban	Independent
Industry	1.02 - 3.75	1.29 - 3.48	.90 - 1.89
Business and Industry	4.27 - 5.45	1.30 - 164.48	1.81

But there were considerable variations in the methodology used in these studies. One critique was presented by Ralph Barnes and George Raymond. They stated in part:

The techniques presently used, however, are not only far from perfect, but are, in most, if not all, instances misleading. For each type of use, the tax revenue is obtained by applying the tax rate to the aggregate assessed valuation of such use. The costs to the community of each type of use are approximated by various methods; by pro-rating of total costs according to the aggregate assessed valuation represented by each such use as a percentage of the total valuation of all land uses in the community; by attempted estimates of actual service costs incurred by each type of use; and by determining an assumed pattern of expenses. In some of the surveys, a great amount of detailed work has gone into this allocation of costs, and generally, the more detailed and painstaking the analysis the more seemingly convincing the result. Since, however, a most important factor in cost allocation is the assumptions made when a specific land use cannot be directly connected with a specific budget outlay, and since a large part of the annual budget lies in this area, these assumptions bear careful study.⁷

To illustrate an example of a questionable assumption,

⁶Ruth Mace, MUNICIPAL COST-REVENUE RESEARCH IN THE UNITED STATES . . . op. cit., p.179.

⁷Ralph M. Barnes and George M. Raymond, "The Fiscal Approach to Land Use Planning," JOURNAL OF THE AMERICAN INSTITUTE OF PLANNERS, XXI (Spring 1955) p.73.

the following is quoted from a very influential writer. The problem was to assign library costs.

Apartment residents, having smaller space for libraries at home, use library facilities much more intensively than single family residents.⁸

The same very noted author stated in discussing police costs;

Because apartment areas occupy only one seventh as much land area as single family home areas, and have six times as great a density, the cost of policing per dwelling unit is less for apartments than for single family homes. Instead of allocating the total cost to apartments on an area basis alone, an average of 14 percent on an area basis and 43 percent on a proportion of total dwelling unit basis, or 29 percent is used.⁹

Would a figure of 25% or 40% have been incorrect? This suggests that when making assumptions, a range of high and low should also be included. Perhaps this detracts from the impressiveness of the report, but it would be more honest. It is also not without precedent, for most population estimates are done in this manner.

Barnes and Raymond also hit on another very poor practice. To quote them: "Is it justifiable to lump together new and obsolete residential or commercial or industrial areas, derive a conclusion based on averaging, and then claim validity for such conclusions with respect to new

⁸Homer Hoyt Associates, ECONOMIC SURVEY OF THE LAND USES OF ARLINGTON COUNTY, VA. (no publication place given: Authors, 1951) p.24.

⁹Ibid.

development?"¹⁰

Wheaton has also attacked the use of averages. In an article in the Journal of the A.I.P. he pointed out that except in wholly new areas, marginal costs should be used instead of the usual averaging method.¹¹ The averaging method may even lead to false conclusions. To illustrate, the average assessed valuation of houses in a community may be \$20,000. The average cost of educating a child may be \$500. Assuming a tax rate of \$20 per \$1,000 assessed, we come to a net deficit of \$100 per house (\$20 tax times 20 assessed = \$400). Now let us assume that because of unused capacity at the school, the marginal cost of educating a child is \$100 (the cost for books, paper, and the like). The new house from which this child has come has an assessed valuation of less than average -- let us say \$18,000. The tax revenue from this house will be \$360 (18 times 20). Thus the city has actually made a profit of \$260 on a home which has a lower value than the average, while the average house would still be a tax loss.

A person with very great doubts as to the profitability of industry is Professor Julius Margolis of the University of California. In a study of the tax rates of various types of cities in the San Francisco-Oakland region of California, he concluded:

¹⁰Barnes and Raymond, op. cit., p.72.

¹¹Wheaton, op. cit., p.171.

The findings of this study cast doubt on the rationality of a program of encouraging industrial and commercial land use for suburbs. They suggest that accompanying the business use of land there will be a change in the nature of residential uses and an expansion of public services so that tax costs per dollar of property value will increase.¹²

Part of his reasoning was:

The suburbanites who seek to attract high-valued industry and to exclude low-income residents ignore the other capacities in which land users can be taxed. Furthermore, the implied assumption that one land use, such as industry, can be encouraged, while a complementary use, housing for workers, can be discouraged, is highly dubious.¹³

Thus a major consideration in the profitability of industrial expansion is the number of new families brought to the city and the cost of providing services for these families. Isard and Coughlin also commented on this point.

. . . when industrial development is accompanied by residential development, tax rates may either rise or fall depending upon the number of new residents and their incomes, the magnitude of the new industrial and commercial valuations, the levels of municipal services provided, the amount of unused capacity in the existing municipal structure, and other factors.¹⁴

To this author's knowledge, only two industrial cost-revenue studies have considered the cost of providing services for new residents. Both of these studies are recent and were

¹²Julius Margolis, "Municipal Fiscal Structure in a Metropolitan Region," *THE JOURNAL OF POLITICAL ECONOMY* LXV, 3 (1957), p.236.

¹³Ibid., pp.226-227.

¹⁴Walter Isard and Robert E. Coughlin, *MUNICIPAL COSTS AND REVENUES RESULTING FROM COMMUNITY GROWTH* (Wellesley: Chandler-Davis, 1957) p.46.

not included in Mrs. Mace's survey.

The first is the ECONOMIC IMPACT STUDY OF MASSACHUSETTS ROUTE 128. This study was prepared by the Department of Civil Engineering of M.I.T. and was primarily interested in traffic factors. However it did prepare a case study of the effect of an industrial park, the New England Industrial Center, on the tax rates of the Town of Needham. The results of this study were, in short, that the industrial park contributed approximately \$300,000 in taxes while it only cost the town approximately \$25,000 for services.¹⁵ The report considered the cost of new residents but concluded:

Although new industries have brought Needham some new residents who will need town services, the results of our industrial survey of the NEIC indicate that that the great majority of workers live outside of Needham.¹⁶

The second study was by Louis Loewenstein, who was with the Institute of Urban Studies in Philadelphia and is presently an economist with the Penn-Jersey Transportation Study. Mr. Loewenstein specifically addressed himself to Margolis' hypothesis. Detailed information was available for two of the three suburban communities studied. Unfortunately Mr. Loewenstein was interested in only one aspect of costs attributable to persons employed in the towns -- the cost of

¹⁵Transportation Engineering Division, Department of Civil and Sanitary Engineering, Massachusetts Institute of Technology, ECONOMIC IMPACT STUDY OF MASSACHUSETTS ROUTE 128 (Cambridge: the authors, 1958) p.151.

¹⁶Ibid.

schools. Marginal costs for other services rendered to these people were not discussed.

His method was to first ascertain how many employees lived in the respective towns. He then assumed that 65% of these were household heads and that each household had 1.25 school children. Taking an average cost of education for school-children, he derived an estimate of the school cost.

Mr. Loewenstein then prepared estimates for the town costs rendered to the new firms. This was done by obtaining estimates from town officials. The results follow.

Table 2 Results of Loewenstein's Study
St. David Industrial Park

	Radnor Township	Upper Merion Township
cost of town services	\$10,000*	"minimal"
school cost	83,000	19,200
total cost	\$93,000	\$19,000
Township tax	\$44,600	\$11,517
School district	105,400	95,975
total revenue	\$150,000	\$107,492
surplus	\$57,000	\$ 88,292

*these costs were "for street cleaning, snow removal, extra fire and police protection, and similar maintenance functions."

source: Louis K. Loewenstein, "The Impact of New Industry on the Fiscal Revenues and Expenditures of Suburban Communities," NATIONAL TAX JOURNAL, XVI, 2 (June 1963) pp.113-136.

Both towns received a net gain in tax revenues as a result of industrial expansion. It is unfortunate that Mr. Loewenstein had not gone into greater detail in examining these costs, for he is the only person who has attempted this type of analysis. One very large omission in estimating school costs is the amount of school taxes new residents had contributed. Their taxes might easily have halved the school costs which were charged to industry.

Another factor which should be considered in a cost-revenue analysis is the possible depreciation of property values of adjacent property. Scott Bagby has noted that in the case of three industrial communities in New Jersey, they have

by their very nature, created problem housing areas and have deteriorated surrounding residential values to such an extent that any tax excess from industry had to be poured right back into a greater subsidy for poor housing. . . . The wrong type of industry in the wrong location -- particularly if it is improperly assessed -- can more easily raise community taxes than lower them.¹⁷

Deleterious effects not only include noise, dirt, etc. which we normally associate with heavy industry, but also the effects of traffic. Frederick P. Clark, in an early article on suburban office buildings, pointed out that 63% of the employees studied traveled to and from work by private automobile. "Traffic density must be kept low or the office

¹⁷Scott Bagby, "Beware the False Prophets," AMERICAN CITY, LXIX (May 1954) p.148.

building will not be a good neighbor no matter how attractive the site may appear."¹⁸

Another point of considerable interest is non-property sources of income. This income may be state subsidies, license fees, sales or income taxes. This income may have a tremendous effect on local property taxes. For example, in Delaware 93.5% of school costs were paid by the state.¹⁹ In Massachusetts it is primarily a local responsibility.

The time dimension of costs is also frequently ignored. As Wheaton and Schussheim have demonstrated, the service costs vary over time. In the case of houses, the peak may come only ten to fifteen years after the new residents have arrived -- because of school costs.²⁰

The list on the following page presents a summary of this section. These will be the guiding principles for the subsequent analysis.

¹⁸Frederick P. Clark, "Office Buildings in the Suburbs," URBAN LAND, July 1954.

¹⁹Mace, op. cit., p.13. To see what effect state subsidies may have on cost-revenue studies see George H. Esser, ARE NEW RESIDENTIAL AREAS A TAX LIABILITY? A REPORT TO THE GREENSBORO CITY COUNCIL CONCERNING THE FINANCIAL IMPACT OF ANNEXING SUBDIVISIONS (Chapel Hill: Institute of Government, 1956).

²⁰Wheaton, A.I.P. Journal op. cit., p.172.

Chart 1 General Principles

1. Explicit statement of assumptions.
2. Where estimates are used, there should be a range of high and low.
3. General uses should not be lumped together; there should be a separation of old and possibly obsolete uses and new uses.
4. Marginal costs should be used rather than average, whenever this information is available.
5. The costs for services rendered to new resident employees should be included.
6. Depreciation of values of nearby uses should be charged against the industry.
7. Non-property sources of income should be included.
8. Future expansion and resultant costs should be analyzed.

As a general indication of the scope of community costs and revenues, the following schematic outline is included. Not all items will be included in this thesis, for example "additional revenues from present households as a result of expanded activities" for the author could not devise a method for determining these revenues, but all will be considered.

*Chart II. COMMUNITY BENEFITS AND COSTS FROM INDUSTRIALIZATION:
SCHEMATIC OUTLINE*

Benefits	Costs
<p><i>A. Direct</i></p> <ol style="list-style-type: none"> 1. Revenues from new business firm <ol style="list-style-type: none"> a. property taxes b. income or earnings taxes c. other business taxes, fees, and special assessments 2. Revenues from new employees <ol style="list-style-type: none"> a. property taxes b. income taxes c. sales taxes d. other personal or household taxes, fees or special assessments <p><i>B. Indirect</i></p> <ol style="list-style-type: none"> 1. Additional revenues from old businesses resulting from new activities attributable to relations with new firms; categories as in (1) above 2. Additional revenues from present households as result of expanded activities: real property taxes increased as result of rise in values, and taxes from other unearned increments <p><i>C. Jurisdictional Adjustments*</i></p> <p>Tax transfers to other political units</p>	<p><i>A. Direct</i></p> <ol style="list-style-type: none"> 1. Outlay for services to new firm: capital outlay and upkeep <ol style="list-style-type: none"> a. water supply and sewage disposal b. streets and highways' traffic control expenditures c. police and fire protection d. air pollution and noise control (sometimes ignored as community responsibility but jeopardy to persons and business exists as social cost) 2. Personal and household services <ol style="list-style-type: none"> a. water supply and sewage disposal b. streets and highways c. police and fire protection d. air pollution and noise control e. educational facilities f. public health, hospital and welfare services <p><i>B. Indirect</i></p> <ol style="list-style-type: none"> 1. Added services to business already established resulting from activities with new concerns <ol style="list-style-type: none"> a. increased per-unit cost and additional capital investments for water, sewage, road network, police and fire protection b. higher cost of general government administration c. drain on natural resources d. tax losses from displaced firms 2. Added services to new employees, as in (1) above <ol style="list-style-type: none"> a. added health, justice and security costs b. tax losses from displaced residents and changes in land use <p><i>C. Jurisdictional Adjustments*</i></p> <p>Tax receipts as transfers from other political units</p>

*Actually, transfers of tax credits may not balance. One area may bear much of the cost and another much of the benefit. When located in different states adjustments may be impossible.

Source: University of Maryland. Bureau of Business and Economic Research. *Industry as a Local Tax Base*. Studies in Business and Economics, vol. 14, no. 2. College Park, Maryland: The Bureau, 1960, p. 18.

RYE, NEW YORK

The community selected for this study is the City of Rye. Rye is located approximately 25 miles north-east of New York City, in the area defined by the N.Y. Metropolitan Region Study as the "Inner Ring." It is a classical example of "the sociologist's suburbia," with the vast majority of its residents being employed in places other than Rye itself.²¹ Yet it is more fortunate than most suburban communities in that: a) it has grown at a fairly steady rate since 1930, b) it is generally a wealthy community, and c) Rye has had an outstanding city planning program since the early 1940's.

The table on the following page shows the population growth since 1920. It can immediately be seen that the greatest growth occurred in the decade 1920-30, before the automobile had its greatest impact on city development. Rye was thus developed as a commuting community with the railroad station being the main focus. The fact that Rye continued to grow at a reasonable rate of between 13 and 21% suggests that Rye was not financially overwhelmed with new construction and new public facilities as other suburbs were in the post World War II boom.

²¹Edgar M. Hoover and Raymond Vernon, ANATOMY OF A METROPOLIS (Cambridge: Harvard University Press, 1959) p.18.

Table 3 Population of Rye

	Number	Percent Increase
1920	5,308	64.1
1930	8,712	13.2
1940	9,865	18.6
1950	11,721	21.4
1960	14,225	

source: United States Census

According to the City Development Plan, Rye should reach a maximum population of approximately 17,500 -- probably in the early 1970's.²²

A second factor of importance to our analysis is the fact that Rye is generally a wealthy city. Generally is used because there are a few blighted areas and these are now being studied for renewal. In 1960 the Median Family Income of the city was \$11,205. This is almost \$5,000 higher than the New York Metropolitan Region. The Median Value of Housing was \$31,000 -- compared to the state median of \$15,300. Median Gross Rent was \$126 -- compared to the state median of \$74.²³

The third factor is that Rye has had an outstanding planning program. The first zoning regulation was adopted in

²²Rye City Planning Commission, CITY DEVELOPMENT PLAN 1963, p.5.

²³These figures all come from the U.S. Census for 1960.

1923. This was expanded and improved upon in 1928, with the adoption of the city's first Comprehensive Zoning Ordinance and Building Code. Following the stock market crash and the great depression, little was done. But in 1943, a resurgence of interest in planning occurred and several professional consultants were retained. The first of these was Professor Frederick J. Adams, who directed the planning program. He was joined by another M.I.T. professor, Dr. Homer W. Hoyt, who prepared an economic analysis of Rye's business district. In addition, Charles E. Hendry, former Research Director for the Boy Scouts of America, prepared a recreation study. The architectural firm of Ketchum, Gina and Sharp was retained to redesign Rye's business district. As a result of an active citizenry and competent professional services, the city has renewed its business district on a nationally famous design and of greater importance, has had a quality of subdivision and zoning control which few cities can approach. For the past 14 years, two past presidents of the American Institute of Planners have sat at opposite ends of the Planning Commission's table, Mr. Frederick P. Clark, the Chairman of the Commission, and Professor John T. Howard, the city's planning consultant.²⁴

As a result of these factors, Rye has an enviable financial

²⁴Most of the historical information for this section came from a City Council report titled ON OUR WAY -- THE RYE DEVELOPMENT PROGRAM, May 1946.

position. As of December 1962, the city has had a debt of \$1,664,000. The Statutory Debt Limit for Rye is \$7,670,000.²⁵ As of December 1963, Moody has given both the city and the city school district a financial rating of double A, or the next to the highest possible financial rating.²⁶

²⁵City of Rye, Summary of Finances 1963.

²⁶DAILY ITEM, December 13, 1963, p.2.

OFFICES IN RYE

Rye is first and foremost a residential community. The first objective in the Development Plan is:

1. Rye is and should continue to be a residential community, in which single family houses are the dominant characteristic, supplemented and balanced with apartment units, business and limited industry, public institutions and governmental and recreational facilities; the overriding objective is preservation of its character as a community of homes. (emphasis added)

Objective number 8 stated:

Various types of commercial development are welcome within other areas provided for their use, provided they will be of economic benefit to the community and will have no material adverse effect upon the character and quality of Rye's residential development.

"Economic benefit" in Rye means primarily that it provide a tax surplus to the city. To more clearly show how stringent Rye's policies have been, the table on the following page is included. Note that business and industry amounted to only 1% of the land used in Rye in 1953.

Table 4 Land Use Changes 1953 - 1962

Use	Area in Acres		Change (acres)	Change (percent)	Percent of City	
	1953	1962			1953	1962
Residential	1457	1524	67	5	40	42
Recreation	719	722	3	1/2	20	20
Institutional	229	257	28	12	6	7
Business & Industry	45	86	41	91	1	2
Streets & Transportation	420	520	100	24	12	14
Vacant	780	541	-239	-31	21	15
Total	3650					

source: City Development Plan, 1963, p.23.

In 1953 an analysis of the potential advantages and disadvantages of suburban office development was prepared by the city's planning consultant. In a cautious report, he recommended that the city should permit limited development. It was felt that the physical problems could be handled without "serious difficulty," but that the problem of whether the offices would be profitable to the city would depend upon the cost of providing services to the buildings and to new families brought to Rye. The report pointed out that if Rye did not accept office development, this development might well take place in a nearby town with the result that Rye would still have to bear the cost of new families but would not

receive any tax revenues from the offices.²⁶

In 1957 the first large office building was completed. It was the national headquarters of the Continental Baking Company, the nation's largest producer of bread and cake. The following year the Chrysler Corporation opened its regional sales office and training center on a nearby site. Both offices were treated as "Special Permits." The following chart shows some of the requirements for a "Special Permit" in a B-4 Office Building District.

Chart 3 Zoning Requirements

1) Maximum Ratio of Floor Area to Lot Area	0.3
2) Maximum Building Coverage of Lot	15%
3) Minimum Lot Area	7 acres* *If for more than 300 employees, add 1 acre for each 30 employees or fraction thereof in excess of 300.
4) Maximum Height	35 feet
5) Access	"Access and service roads from existing streets or highways shall properly relate to the public street and highway system so as to avoid unsafe conditions and traffic congestion." Section 9-4.412

²⁶Adams, Howard, and Greeley, SUBURBAN OFFICE BUILDING STUDY, May 1953.

developer. This is a big step beyond the usual requirement of only on-site costs being charged to the developer.

An ordinance is effective only if it is enforced. The Tye City Planning Commission was very careful in reviewing the applications. To illustrate, the original application from the Continental Baking Company stipulated a two story office building and a one story "research, engineering, and product development building." The latter aroused the Commission's interest and therefore a special study of "research, engineering and product development" was done. The Commission visited three such buildings owned by Continental. The Commission concluded:

2) Described as 'engineering research laboratory,' this facility is actually a machine shop devoted to 1) the development of working models of baking equipment and 2) the manufacture of such equipment for actual use by the Continental Baking Company on its production lines.

Some machinery and services needed would be "electric welders driven by motors up to 25H.P." an overhead industrial crane, and "commercial trucking of a heavy type." The report continued:

The Commission has considered the effect not only of this machine shop use by the Continental Baking Company but also the possibility of a more intensive use of the same character by successor users of this property and also the possibility that adjacent property owners might apply for similar permission to erect other machine shops.

Almost needless to say, the Commission rejected the first application by the Continental Baking Company.

This careful review is not unusual in Rye. A few years

later, curious citizens may have wondered what the City Planning Commission was doing wandering about the Chrysler Corporation's property late at night. It was checking to make sure that no direct lighting could be seen off of the property. Changes were required, until the Commission was satisfied.

Good planning does not just happen. It requires intelligence, foresight, and a good deal of work. In Rye, the Commission first studied the problems of office development. It then set up its standards. And then it made sure that its standards were met.

The following table shows the most pertinent information for the two companies. A generalized land use map and photographs of the two offices also follow.

Table 5 Basic Data of the Offices

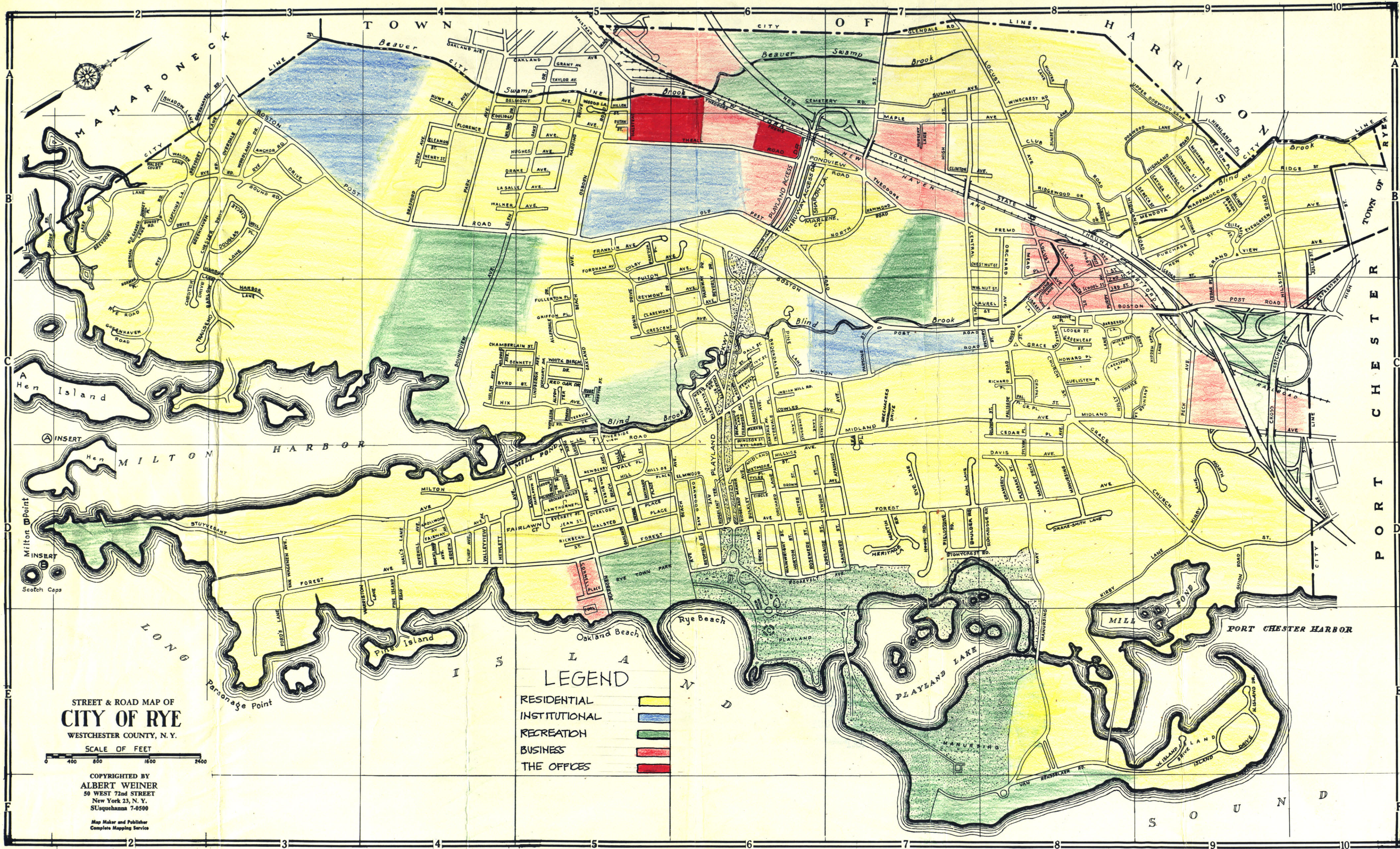
	Continental Baking Comp.	Chrysler Corp.
Site area (in acres)	21.5*	7
Floor area (sq. ft.)	73,780	59,870
Building coverage (" ")	43,000	30,000
Coverage of site	4.6%	9.8%
Number of employees	376	172
Maximum employees	630	300
1963 Assessed Value	\$1,153,200	\$524,550
1957 Assessed Value (before development)	\$110,000**	\$44,750

* 3 acres of this are in the Town of Harrison.

** part of this land was used by an institution and was therefore tax exempt.

source: Assessor's records

GENERALIZED
LAND USE
MAP



Adelaide St	D7 Captains La	B2 Dale St	C6 Fieldstone Rd	D7 Guelister Pl	C8 Hillside Pl	D5 Lake Rd	B2 Mildred Av	C4 Orchard Av	B8 Purchase St	B9 Sand St	C6 Upper Dogwood La	A9 Windsor St	C6
Allendale Rd	C5 Cayuga St	B9 Davis Av	D8 Florence Av	B4 Guion Rd	D9 Hillside Rd	B9 Larkspur La	C8 Milton Rd	C8 Orchard Dr	D5 Purdy Av	C8 Sanford St	D7	D5 Winthrop St	C6
Alton Ter	C5 Cazenove Pl	B8 Dearborn Av	D5 Fordham Av	B5 Hall's Lane	D4 Hillside St	D6 La Salle Av	B4 Mistletoe La	C8 Orchard La	D6 Radcliffe Av	C8 School St	C8 Vale Pl	D5 Woodland Dr	B3
Anchor Dr	B3 Cedar Pl	B9 Dogwood La	B9 Ford's Lane	E3 Halstead Av	B5 Hix Av	C5 Laurel St	C9 Mohawk St	B9 Orchard Walk	D5 Ralston St	C8 Seneca St	B9 Valley View Av	D4 Woods La	A5
Ann La	D7 Cedar St	B8 Forest Av	B8 Franklin Av	B3 Halstead Pl	D5 Holly Lane	C8 Lavender La	C9 Morehead Dr	C6 Ormond Pl	D5 Rectory St	C8 Shadow La	A2 Van Buren St	D5 York Av	B4
Apamamis Av	C7 Cemetery Rd	A7 Douglas Cir	B3 Franklin Av	B5 Hammond Rd	B7 Hook Road	D7 Library La	C5 Natoma St	B9 Overdale Rd	D5 Redfield St	D6 Shore Road	B1 Van Rensselaer Rd	F8 York Av	B4
Barberry La	C8 Chamberlain St	B7 Drake Av	B5 Harbor Lane	C5 Harbor Terrace Dr	C5 Horton St	D6 Lindbergh Av	A8 New St	B3 Red Oak Dr	B3 Red Oak Dr	C5 Smith St	C8 Van Wagenen Av	D3	
Barlow La	C3	D6 Drake Smith La	B5 Haven Av	C5 Harding Dr	B5 Howard Pl	C8 Locust Av	D5 Newberry Pl	D4 Reymont Av	D4 Reymont Av	C5 Sonn Dr		1st Street	B8
Beachwood La	C6 Charlotte St	C4	C5 Haven Av	D6 Hunter La	C6 Hughes Av	B5 Locust Lane	D5 Overlook Pl	D5 Richard Pl	D5 Richard Pl	C8 Sound Rd		2nd Street	C8
Beck Av	D6 Chester Dr	C6 Edgar Pl	D10	D5	D5 Hunt Pl	A4 Loder St	B3	C8 Rickbern St	D5 Soundview Av	D5 Soundview Av	B3 Wagner Sqr	3rd Street	C8
Belmont Av	A5 Chestnut St	C2 Eleanor St	B4 Garden Dr	D5 Hawthorne Pl	D5 Hunter La	A6 Lynden St	C6	C8 Ridge St	D6 Stuyvesant Av	D6 Stuyvesant Av	C4 Wainright St		
Bennett St	C5 Claremont Av	B8 Elizabeth St	B9 Glendale Rd	A7 Hayward Pl	D5	C6 Macy Rd	C2 Palisade Rd	B2 Palisade Rd	D6 Summit Av	D6 Summit Av	D2 Walden Ct		
Beverly Dr	C5 Claremont Av	C5 Ellsworth St	B9 Glen Oaks Dr	B5 Helen Av	C4 Indian Hill Rd	C6 Manuring Av	C7 Park Av	B4 Ridgefield Ter	D6 Sunnyside Av	D6 Sunnyside Av	A7 Walker Av		
Blind Brook La	B6 Clinton Av	B7 Elm Place	B8 Goldwin St	C8 Hen Island	B2 Intervale Pl	B8 Manuring Island	B9 Park Lane	D5 Ridgewood Dr	D6 Sunnyside Av	D6 Sunnyside Av	B8 Walnut Av		
Boston Post Rd	B9 Cloverdale La	C6 Elmwood Av	D6 Grace Church St	C4 Henry St	C2 Iroquois St	E9 Manuring Way	B7 Park St	C6 Riverside View	C5 Sunset Rd	C5 Sunset Rd	B2 Wappanocca Av		
Boulder Rd	A3-C10 Club Road	B5 Elmwood Av	B5 Gramercy Av	D8 Hewlett Av	D4 Island Dr	C6 Maple Av	C6 Parkway	C6 Rockland Av	D4 Sylvan Pl	D8 Sylvan Pl	B2 West Bank Rd		
Bradford Av	D7 Colby Av	B8 Futaw St	D7 Grandview Av	B9 Hickory Dr	C5 Ivy St	D7 Maple Dr	C7 Parkway Dr	C7 Rockridge Rd	D8 Terrace Dr	D6 Terrace Dr	C5 West Island Dr		
Brevort La	B4 Coolidge Av	B5 Eve Lane	D5 Grapal St	C8 Hidden Spring La	C9	D8 Oakdale Av	C6 Parsons St	C9 Roosevelt Av	C5 (See Harbor Ter Dr)	C5 (See Harbor Ter Dr)	D6 Westmore Pl		
Brookdale Pl	A3-B2 Cornell Pl	B4 Everett St	B9 Grapal St	C8 High St (Town of Rye)	B10 Jean St	D7 Oakland Beach Av	D5 Peck Av	C9 Rose St	D6 Theall Rd	D6 Theall Rd	B8-A6 Wetmore Pl		
Brown Av	C6 Cottage St	D6 Evergreen Av	D5 Green Av	D4 High St (City of Rye)	B7 Julian St	C6 Oakwood Av	D6 Pine La	C6 Rossmore St	D6 Theo. Fremd Av	D6 Theo. Fremd Av	C8 White Birch Dr		
Bulkeley Av	C6 Cowles Av	D6 Fairlawn St	D5 Greenacres Dr	C7 Hill St	B9	B6 Old Boston Post Rd	B6 Pine Island Rd	D6 Rye Beach Av	D6 Rye Beach Av	D6 Rye Beach Av	D4 Wilson Dr		
Byrd St	D6 Crescent Av	C6 Fairway Av	D4 Greenhaven Rd	C7 Highland Rd	D5 Kirby Lane	B9 Old Garden La	B2 Playland	E8 Rye Rd	D6 Rye Rd	D6 Rye Rd	C6 Windcrest Rd		
	C4 Cross County Pkwy	C6 Fenton St	D6 Greenhaven Rd	C2-A2 Hill St	D5 Kirby Lane North	B9 Onaida St	B9 Playasant St	C2-B2 Turf Av	D5 Tyler Cir	D5 Tyler Cir	A8 Sharon Lane		
	C8 Cross St	C8 Fernwood Av	C6 Griffon Pl	C5 Hillen St	A5 Knollwood Av	D4 Midland Av	B9 Preston St						

STREET CHANGES

The Continental Baking Company



The Chrysler Corporation



DIRECT MUNICIPAL COSTS

And now let us turn to the cost of services required by these companies. The first items of concern are water and sewerage. Water is supplied by a special district arrangement. Water is metered and therefore they pay for what they use. The Planning Commission required the companies to pay for their connections to the water line. Sewerage came under a similar type of arrangement, with both companies having to bear the full expense of connecting to the County sewer line. The trunk lines for both water and sewerage had adequate excess capacity to easily accommodate the offices. Because no marginal capital expenses were incurred and charges are assessed on a user basis, water and sewerage may be dismissed from further consideration.

The second pair of services is fire and police protection. Although it has been suggested that they should be assessed by using a performance budgeting technique, it was not possible in this case. In addition, much of these services is not of a direct measureable nature. To illustrate -- one way of measuring the cost of fire protection on a performance basis would be to divide the total cost of the fire department by the number of fires -- thus getting an average cost per fire figure. This could then be multiplied by the incidence of fires of a particular land use. This information was not available, but even if it were, it would still be unsatisfactory

for if the particular land use had no fires, as in this case, would it be proper not to assign any cost to it? Obviously no, for there is still the cost of providing protection. We must therefore ask if there was an increase in men and equipment to provide this protection.

To answer this question, interviews were held with the Chief of Police, Mr. Charles McLaughlin, and the Fire Inspector, Mr. Vincent Omara. According to both men, the addition of the Continental Baking Company and the Chrysler Corporation added little, if any, marginal costs. In the first case, police protection, the companies are located on a preexisting patrol with daily three shift windshield checks. Officers are not needed to direct traffic at closing time for either of the offices. A traffic signal has been installed at Continental at company expense. Because both companies have night watchmen, expensive door and window police checks are not required.

Cost of fire protection was "almost nil." The cost of fires may even have decreased because there are now less brush and grass fires since the lots have been developed. Both buildings are of fireproof construction and therefore there is a lower probability of there being a major fire. Both buildings require two inspections per year, but these have not required the addition of extra personnel. Finally, both buildings are in an existing fire zone. Because of the Miriam Osborn Home, an institution with the largest buildings in Réy and is adjacent to these offices, heavy equipment had already been purchased.

We thus have a difficult job in assigning costs to the companies. We shall estimate a minimum cost of \$100, a medium of \$200, and a maximum of \$300.

The next service to be considered is garbage collection and disposal. The city hires a private contractor to perform the collection service. The contractor, Mr. Robert Henne, was asked how much of his contract cost could be attributed to the two offices. Chrysler had its own collector. It was estimated that Continental required approximately 1 1/2 hours per week. At a rate of \$14.25 per hour per truck, this amounted to approximately \$1,100 per year or 1.2% of the total contracting fee. Assuming that this percent of costs is the same for the garbage disposal plant, we have an additional cost of \$550. Thus the probable total cost is about \$1,650 a year. We shall estimate \$1,400 to be a low and \$1,900 to be a high.

Street construction and maintenance is another possible direct cost. Both companies front on the same road, a four lane county highway. A turnoff lane at Continental was added at company expense. Because the road is maintained by the county and any additional maintenance costs caused by the offices would be spread over the entire county, the marginal expense to Rye is infinitesimal.

Traffic generated by these firms may have required very expensive road changes in other sections of Rye. But though there is a traffic problem in the center of the city, this

has not been aggravated by the addition of traffic from Chrysler and Continental. The reason for this result is that both companies have nearby access to the three major roads -- the New England Thruway, the Cross Westchester Expressway, and the Boston Post Road (Route 1) -- without having to drive through the center of the city. This result was not a matter of chance, but the result of careful site selection for office districts by the Planning Commission.

The next cost to be charged to the offices is the cost of general government. The City Comptroller, Mrs. Henne, was asked how much this might be. She felt that while there certainly is a cost, e.g., sending tax bills and entering records, that very little of this could be charged as a marginal cost. We shall estimate that clerical costs range between \$50 to \$100 a year. However, within general government there is also the cost of planning. We shall estimate the cost of preparing the office study, the time to evolve the zoning standards for offices, and the review of the site plans to be approximately \$5,000. Treating this as a capital expenditure and amortising this over a 50 year period (a reasonable life expectancy for these buildings) we have an annual cost of approximately \$100. In addition there are smaller planning costs which come infrequently. For example, this year Continental asked for permission to use a rear emergency exit to empty the parking lot in the evening. The review for this request cost the city between \$100 and \$400.

Then too, there are periodic checks to insure that no nuisances have developed. These types of recurring planning services probably cost the city between \$100 and \$300 annually. Thus the total general government cost is probably a minimum of \$300, an average of about \$400, and a maximum of about \$500.

In accordance with principle of this thesis, that all assumptions be made explicit, the following costs of government were not charged to Chrysler and Continental:

1) Public Works -- It might reasonably be claimed that because the office employees use city streets and benefit from them and other public improvements, that these improvements should be charged to the company. But because these improvements were not done because of the employees and their use is an exceedingly small marginal addition, these possible small costs are not charged to the companies.

2) Public Library -- It is assumed that Continental and Chrysler would require specialized library facilities not found in Rye.

3) Parks -- These facilities are not being used to any measureable degree by non-resident office employees.

4) Debt Service -- Inasmuch as Continental and Chrysler did not require any new capital improvements to be installed by the city, it is assumed that they have not increased the city's indebtedness.

The table on the following page summarizes the total direct costs.

Table 6 Direct Municipal Costs of the Offices

	Low	Medium	High
Fire and Police	\$100	\$200	\$300
Garbage	1,400	1,650	1,900
General Government	300	400	500
Total	\$1,800	\$2,250	\$2,700

INDIRECT COSTS

The next step in our analysis is to analyze the indirect costs of Chrysler and Continental. The major factor is the additional cost of providing municipal services to new families who were attracted to Rye because of employment at the two offices. As of December 1963, of Chrysler's 172 employees, 5 live in Rye.²⁷ As of the same date, of Continental's 376 employees, 41 were Rye residents.²⁸ The chart on the following page shows the change in number of Rye residents who were employed with the Continental Baking Company before and after their move to Rye. Unfortunately this information was not available for the Chrysler Corporation.

If the total of 46 employee-residents, or 8% of the total number of employees, was unusual, the later analysis of costs would not be valid. Therefore a discussion of employee-residence relations would be in order.

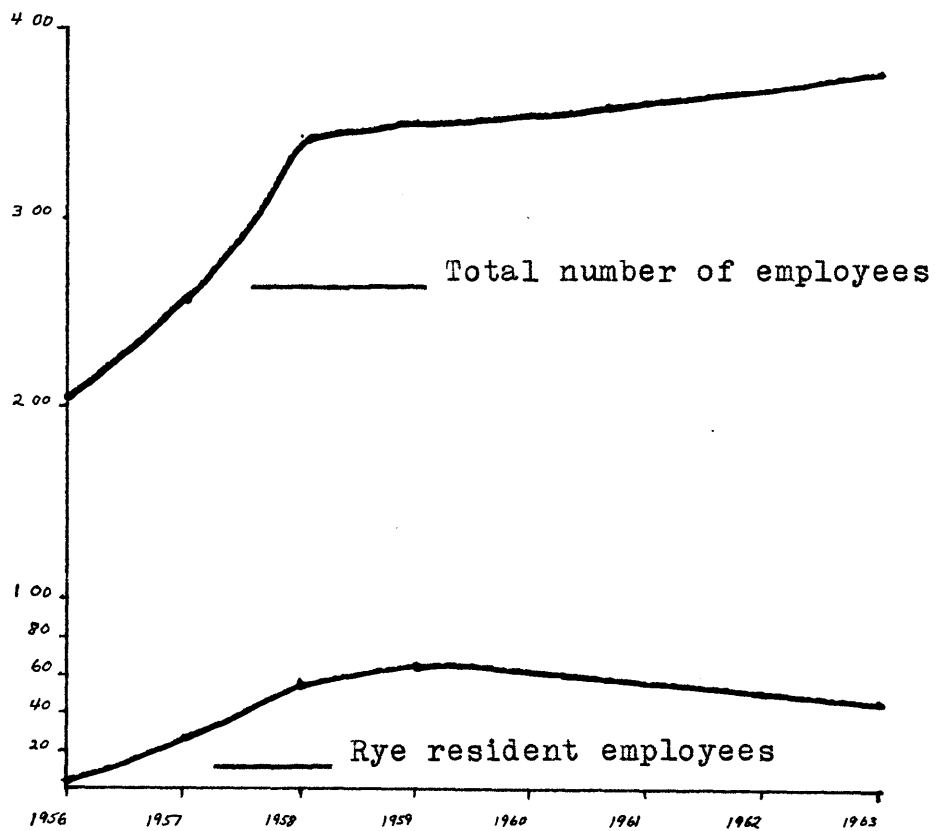
In a study of the Reader's Digest in New Castle N.Y., the Westchester County Department of Planning found that only about 5 percent of the employees lived in New Castle (48 out of 880 respondents).^{28a}

²⁷ Mrs. Ann V. Johansen, Assistant Personnel Manager, Continental Baking Company.

²⁸ Interviews with department heads, Chrysler Corporation.

^{28a} Westchester County Department of Planning, CHANGES IN WESTCHESTER (White Plains: authors, 1955) pp.24-25.

Chart 4 Continental Baking Company Employees



source: Continental Baking Company

Loewenstein's study of Philadelphia suburban communities revealed very similar results. The following is a list of firms and the number of resident employees.

Table 7 Total and Local Employees
of Two Philadelphia Suburbs

St. David Industrial Park, Radnor Township 1959

Firm	Number of Employees	
	Total	Local
Wyeth Laboratories	803	91
T.V. Guide	562	53
Burroughs	600	20 (estimated)
General Electric	205	"negligible"
Treadway Inn	100	30
Total	2,270	194

Upper Merion Township 1960

Philadelphia Gear Corp.	760	38
Wiedemann Machine Co.	300	9
Automatic T. and C.	240	14
Robertshaw - Fulton	80	4
Fischer Scientific	50	3
Yale and Towne	70	4
E.R. Squibb	40	2
Total	1540	74

source: Loewenstein, op. cit., pp. 121 and 124.

We thus see that in the Philadelphia suburbs, approximately 8 and 5 percent respectively of the employees were town residents. In Rye it was 8 percent.

A reasonable assumption may be that workers would like to minimize the home-work separation. Thus more families may move to Rye in the future. What does the literature say on this point?

One fairly recent study stated that there was very little information on the subject. The authors cited only one source, a Massachusetts State Planning Board report dating back to 1942. This report "showed that only a small percentage of the workers wished to move nearer to their places of work."²⁹

A report by the Westchester County Department of Planning stated:

Only a minority of workers changed residence places in order to be closer to new jobs. . . . It would appear that though some of them moved in order to be closer to their jobs, proximity to work was a secondary consideration. Most probably their primary motivation in moving was the desire for an improvement in the size, location, or quality of their homes, which in turn, was related to family growth.³⁰

In a study of manufacturing workers in Chicago's C.B.D., Beverly Duncan found:

there was no indication that employees who have been employed with a firm for a longer period of time had a shorter work trip. . . . Apparently any tendency to reduce work-residence separation is counteracted by factors operating in the opposite direction.³¹

²⁹ Leonard P. Adams and Thomas W. MacKesey, *COMMUTING PATTERNS OF INDUSTRIAL WORKERS* (Ithaca: Cornell University, 1955) p.18.

³⁰ Westchester County Department of Planning, *EMPLOYEE TRAVEL PATTERNS IN WESTCHESTER COUNTY* (White Plains: author, 1957) p.95.

³¹ Beverly Duncan, "Factors in Work-Residence Separation," *AMERICAN SOCIOLOGICAL REVIEW*, XXI (February 1956).

W. J. Owey

We also have the work of the M.I.T. Route 128 study. This study had obtained 7,500 employee questionnaires from employees who worked in various types of establishments located near Route 128. The suburban communities represented a very similar situation to that of Rye. The average time to work was 28 minutes.³² The average distance was 11.7 miles.³³ The study concluded:

Some employees have moved into the town where their place of work is located and others have moved out. The net gain of workers in towns where their plant is located has been relatively small. For all areas the net gain was found to be about 200 persons representing 7 percent of all who moved and 1.2 percent of all employees on Route 128. Employees tend to move into towns other than where they work. The availability of Route 128 broadens their choice of home location within an acceptable time and distance from work. (emphasis added)³⁴

Louis Loewenstein has suggested the following factors to judge an employee's propensity to move his place of residence to be closer to his work.³⁵

Chart 5 Employee Factors to Move Closer to Work

1. Male
2. Young
3. Not married
4. If married, has no children
5. Lives alone
6. Primary worker
7. Has held few jobs
8. Occupationally upwardly mobile

³²Department of Civil Engineering, M.I.T., op. cit., p.54.

³³Ibid.

³⁴Ibid., p.192.

³⁵Loewenstein, op. cit., p.133.

9. Does not own a car
10. No other source of income
11. Has seniority
12. Company has a pension plan
13. Does highly specialized work
14. Close friends or family work in same plant
15. This is his only job
16. High degree of company loyalty
17. Well paying job
18. Likes company and feels respected, needed, and important
19. Considers his job permanent.
20. Rents home
21. Weak or no ethnic or neighborhood ties
22. Can find new home easily
23. Can not get to new plant site easily
24. Present community expensive to live in
25. Can easily dispose of present home
26. Has recently moved to community

In view of these factors, it seems very unlikely that many more families will move to Rye. Most of the employees are women; many married; being secretaries clerks and the like, they are occupationally static; they are secondary workers; they probably do not have long seniority; most are in an income range of from \$60 to \$130 a week; because of Rye's excellent location on major highways, they can get to work easily; and finally, Rye is generally an expensive community. However, there are also the executives, but these are the minority of employees.

And now let us continue our analysis of costs. We have a total of 46 possible new families because of Continental and Chrysler. We must next eliminate those who lived in Rye previous to Continental and Chrysler's arrival. This was done by checking property and voter registration lists for 1955 and 1956.

Of the possible 46, thirteen were previous Rye residents. An additional 3 lived in houses owned by persons of the same surname who had lived in Rye previous to 1956. These 3 are thus probably daughters and sons. Thus we are now down to a possible 30 new families.

Further examination revealed that 6 of these 30 were wives of new property owners. Another 2 were wives of new Continental and Chrysler employees. These women are probably either part-time or secondary wage earners. As previously discussed, choice of residence would probably not be related to their source of employment. We are now down to 22.

Of the possible new residents who may be charged against the offices, 11 rented apartments in multi-family dwellings. It is very important to note multi-family dwellings, for a recent study of school costs in Rye found that: "With respect to apartments, the comparison above indicates that the average apartment more than meets the school cost of its occupants even without the assistance of non-residential taxes."³⁶ Two new residents lived in elevator apartment buildings which provide an average of \$60 per dwelling unit, three lived in rooming houses, and six lived in Garden Apartments which provide an average excess of \$20 per unit.³⁷ These residents thus provide a surplus of between \$200 and \$300 annually.

³⁶Rye City Planning Commission, PLANNING COMMISSION MEMORANDUM #408-63, October 8, 1963, p.1.

³⁷Ibid.

We must next try to derive an estimate of other municipal costs for these residents. Ruth Mace, in her survey of cost-revenue studies throughout the nation, concluded:

Where educational costs are excluded from consideration, in almost all cases even residences of low assessed valuation more than pay their way for remaining services.³⁸

In view of the high value of apartment units in Rye, it is assumed that these apartment units also pay their way.

We thus have 11 remaining possible tax losses. Of the 11, one rents a single family house. It has an assessed valuation of \$9,800. The other 10 are homeowners with an aggregate assessed valuation of \$158,250. Contrary to traditional American jurisprudence where one is innocent until proven guilty, we shall assume that these eleven came to Rye because of employment at Continental or Chrysler. Our only evidence is that they did not vote in 1955 or 1956 and that they did not own any property. While in the realm of speculation, would these people have come to Rye if Continental and Chrysler had located 100 yards north and thus had been in the Town of Harrison? It is also interesting to note that while 41 Continental employees lived in Rye in 1963, the Town of Harrison had 51.

How do the 11 possible tax loss families come out on the balance sheet? First let us take school costs.

³⁸Mace, op. cit., p.178.

Table 8 School Costs of Resident-Employees

Number of school children (at .8 per house)	8.8
Total school cost (at \$738 per child)*	\$6,494
School tax contributed (168,050 x \$24.23/1000)	4,072
Net school tax loss	\$2,422

*the average school cost to be raised by taxes was used instead of the margin because the later figure was not available.

source: all cost figures were from the Planning Commission Memorandum, op. cit., p.1.

We must next try to estimate the marginal cost for providing municipal services to these 11 families. A method which may be used is to divide the change in municipal expenditures by the change in population. This was done for 1957 and 1960, because census data was available.

Table 9 Marginal Municipal Expenditures

	1957	1960	Change
Gross Budget	\$1,240,140	\$1,675,395	\$435,255
Population	13,511	14,225	714
Average cost	\$91.80	\$117.77	\$610.

source: United States Census and City of Rye Budgets

Thus the first crude estimate of the marginal cost of increased population is about \$610 per new resident. But a careful examination of increased expenditures during this time reveals that a considerable part of this increase was due to factors other than increased population. For example,

a new service was introduced -- the City Marina. In addition new voting machines were purchased, a city reassessment of property done, several large pieces of equipment were purchased by the Public Works Department, and new lighting installed on Fremd Ave. These expenditures amount to at least \$56,000. In addition, salaries were increased by approximately 15%.³⁹ Salaries in 1960 amounted to approximately \$728,000 of the city budget. The 15% increase in salaries or \$109,000, was not a result of increased population. Thus we find as a minimum, \$165 thousand of the \$435 thousand cannot be charged to new residents. Since approximately 23 percent of Rye's budget is raised from non-property tax sources of income, the average marginal cost of new residents to be raised by local taxes comes to a maximum of \$291 per capita. The computations follow.

Table 10 Marginal Cost Per Capita

Gross budget increase	\$435,000
Increase not attributable to population	165,000
Net increase " " "	\$270,000
Amount raised by non-property taxes	62,000
Marginal cost for 714 persons	\$208,000
Marginal cost per capita	\$291

³⁹This figure was arrived at by comparing the salaries for known officials, e.g., City Assessor, Engineer, Building Inspector.

This figure of \$291 per capita represents a high, for we only excluded those items which were obviously not related to growth. Possibly much of this increase could be explained by latent demand for services caused by earlier growth. It may also be indicative of a demand for a higher level of services. Therefore we estimate that \$290 be the high, \$250 be the medium, and \$200 be the low.

Taking the city average of 3.6 persons per single family residence, we come to a total of 40 persons attributable to Chrysler and Continental (11 families x 3.6). This reveals the following estimates for municipal costs:

High	40 x \$290 = \$11,600
Medium	40 x \$250 = \$10,000
Low	40 x \$200 = \$ 8,000

The assessed valuation of these properties in 1963 was \$168,050. At the rate of \$18.72 /1000, we have a total income to the city of \$3,145. Thus the marginal municipal service cost of the new homes is:

High	\$11,600 - 3,150 = \$8,450
Medium	\$10,000 - 3,150 = \$6,850
Low	\$ 8,000 - 3,150 = \$4,850

Property Values

Another indirect cost to the city may be the lowering of the value of property in the vicinity of the offices. Unfortunately for this analysis, the only area which might have

reflected changes in value was already fully developed. An inspection of the houses in this area showed no visible signs of depreciation -- they were all well maintained and showed no incipient blight.

A recent study analyzed this question of the effect of office and laboratory development on nearby residential property values. The report stated that this will depend upon "particular site conditions (the nature of the topography, natural tree growth, etc.), the size and dimensions of the site, the intensity of development and the standards that control the design of the development."⁴⁰ In nearby New Castle, the Reader's Digest has had its head offices for many years. Through the years it has expanded to having a present work force of well over 2,000. Property values of homes built prior to the construction of the office were compared to the value of new homes. The value of the houses was adjusted to the same base year. Incidentally, these houses were built on the main access road to the office. The adjusted valuation of houses built in 1930 was \$25,111. Those built in 1950, had an adjusted valuation of \$31,185, thus showing that the property values were not impaired.⁴¹

⁴⁰New Canaan (Conn.) Planning and Zoning Commission, EXECUTIVE OFFICES AND RESEARCH LABORATORIES (New Canaan; 1960) p.13.

⁴¹Ibid., p.16.

The following table summarizes this section.

Table 11 Total Indirect Costs

	Low	Medium	High
School	2,000	2,400	2,800
City	4,900	6,900	8,500
Total	\$6,900	\$9,300	\$11,300

REVENUES

By far, the most important revenue source is the property tax. The combined assessed valuations of Continental and Chrysler is \$1,677,750. The City tax, at a rate of \$18.72 per \$1,000 assessed amounts to \$31,407. The school tax, at a rate of \$24.23 per thousand, results in a revenue of \$40,652.

A second possible source of revenue may be taxes which come as a result of increased valuations which are a result of increased sales to the offices of their employees.

Rye is not a major commercial center. Its C.B.D. is intended for sales to the resident population. Office materials and the like, which may be purchased by Continental or Chrysler, are probably purchased from New York City wholesalers or suppliers.

Another source for increased sales may be purchases by non-resident employees. This also appears to be negligible for a) the great majority of the employees eat in company cafeterias -- thus eliminating lunch-time impulse purchases, b) if employees needed anything, they would probably go to Harrison for its shopping center is much closer, c) Rye is very expensive.

Values may however have increased as a result of purchases of resident employees. This writer is very skeptical as to these increases for a) Mrs. Mace found that the ration of income to revenue for small suburban communities for all

commercial uses ranged from 0.80 (a loss) to only 2.04 and b) the findings of nearby Greenwich, Conn. which found that commercial uses were a tax liability.⁴² and ⁴³ In any case the increase or decrease would not be very great. The following computations are shown to demonstrate this point.

Table 12 Taxes added by employee purchases

average expenditure per resident employee	\$1,000 ⁴⁴
number of employees	46
increased sales	\$46,000
capital coefficient of sales	1 ⁴⁵
increased true value	\$46,000
assessment ratio	65%
assessed value	\$29,900
combined city and school tax rate per 10000	43
tax yield	\$1300
cost to city at 2.0 ratio of cost to income	\$650
" " " " 1.3 " " " " "	\$800
" " " " 0.8 " " " " "	\$1600
High yield	\$650
Medium	\$100
Low	-\$300

⁴²Mace, op. cit., p.179.

⁴³Greenwich Planning and Zoning Commission, ECONOMIC STUDY, (Greenwich: authors, 1954).

⁴⁴Frederick P. Clark and Associates, LAND USE AND COMMUNITY TAXES (Rye: authors, 1958) p.35.

⁴⁵Isard and Coughlin, op. cit., p.100.

These seem to be the sum of revenues from the Chrysler Corporation and the Continental Baking Company. Rye does not have a sales or income tax. State grants for education and per capita assistance have already been included when determining the school and city costs for new residents.

The total of revenues is shown in table 13.

Table 13 Total Revenues

<u>Direct Revenue</u>			
School	40,700	40,700	40,700
City	<u>31,400</u>	<u>31,400</u>	<u>31,400</u>
total	72,100	72,450	73,050
<u>Indirect Revenue</u>			
Commercial expan.	-300	100	650
Apartments	<u>200</u>	<u>250</u>	<u>300</u>
total	-100	350	950
Total Revenue	\$72,000	\$72,450	\$73,050

SUMMARY

This section summarizes the results of this study. The total net gain to the City of Rye from the addition of the Continental Baking Company and the Chrysler Corporation is between 59 and 63 thousand dollars. Table 14 on the following page summarizes the costs and revenues.

In addition, four other calculations were made. They are: 1) the city tax rate without the offices, 2) the school tax rate without the offices, 3) the city tax rate if the land had developed for houses, and 4) the school tax rate had the land developed for houses. The results for the first two are as expected, a decided lowering of the tax rates. Assuming that the land may have developed for houses, and taking the City Assessor's estimate of what the assessed value of new homes would have been (this was \$27,000 whereas the average assessed value of houses is about \$18,000) we find that houses would have decidedly raised both rates. The city rate would have been 59 cents higher (assuming medium costs). The school rate would have experienced a 48 cent increase. Thus Continental and Chrysler returned much greater yields than housing, even assuming that the new housing would cost well above the average.

Table 14 Total Costs and Revenues

	Low	Medium	High
<u>Direct Costs</u>			
Fire and police	100	200	300
Garbage	1,400	1,650	1,900
General gov't	<u>300</u>	<u>400</u>	<u>500</u>
total	1,800	2,250	2,700
<u>Indirect costs</u>			
School	2,000	2,400	2,800
City	<u>4,900</u>	<u>6,900</u>	<u>8,500</u>
total	6,900	9,300	11,300
Total Costs	8,700	11,550	14,000
<u>Direct Revenue</u>			
School	40,700	40,700	40,700
City	<u>31,400</u>	<u>31,400</u>	<u>31,400</u>
total	72,100	72,450	73,050
<u>Indirect Revenue</u>			
Commercial expan.	-300	100	650
Apartments	<u>200</u>	<u>250</u>	<u>300</u>
total	-100	350	950
Total Revenue	\$72,000	\$72,450	\$73,050
TOTAL SURPLUS	\$63,300	\$60,900	\$59,050

Table 15 City Tax Rate Without the Offices

1963 total assessed valuation	\$ 85,162,920
assessed valuation of offices	1,677,750
city total less offices	83,485,170
value of land before development	154,750
total	83,639,920
city budget to be raised by taxes	1,594,127
cost of offices (medium)	2,250
cost of servicing homes (medium)	10,000
total cost	12,250
city budget less costs	1,581,877
cost of servicing land	600
total city budget less offices	1,582,477
Tax rate = $\frac{\text{expenditures}}{\text{total assessed valuation}}$	\$18.95
1963 tax rate with the offices	\$18.72

Table 16 School Tax Rate Without The Offices

total assessed valuation*	77,544,361
assessed valuation of the offices	1,677,750
assessed valuation less offices	75,866,611
assessed valuation of employees' houses	168,050
" " less " "	75,698,561
" " of land	154,750
total	75,853,311
school budget to be raised by taxes	1,878,900
cost of employee's children (medium)	6,500
new budget	1,872,400
Tax rate = $\frac{\text{expenditures}}{\text{assessed valuation}}$	\$24.68
1963 tax rate with the offices	\$24.23

*the Rye City School District does not equal the City total for a small part of the city is in another school district.

The sites on which the Chrysler Corporation and the Continental Baking Company had developed were previously zoned for houses on one-third acre lots.

Table 17 Number of New Houses had Land Developed for Houses

	Chrysler	Continental
total land area (sq. ft.)	304,920	804,118
less park (10%) ⁴⁴	30,492	80,412
Balance	274,428	723,706
less streets (18%) ⁴⁵	49,397	130,267
Balance	225,031	593,439
minimum lot area	14,031	14,031
Maximum number of houses	15	40

⁴⁴Rye City Planning Commission, LAND SUBDIVISION REGULATIONS, 1963, Section 45.1.

⁴⁵Rye City Planning Commission, MEMORANDUM #403-63 -- "Recommended Zoning Amendments to Permit Cluster Development," August 1963, p.5.

Table 18 School Tax Rate if Developed for Houses

estimated average assessed valuation (city assessor)	\$27,000
number of houses	55
estimated total assessed valuation	\$1,485,000
number of schoolchildren (at .825 at R-3) ⁴⁶	45.4
school cost (at \$728)	\$33,505
school budget	1,878,900
new budget	1,912,405
total assessed valuation	77,351,611
new school tax rate	\$24.71
1963 school tax rate	\$24.23

⁴⁶Rye City Planning Commission, Memorandum #408-63, op. cit., p.6.

Table 19 City Tax Rate If Developed For Houses

number of houses	55
number of persons (at 3.6 persons per unit)	198
Marginal cost	
High \$290	57,420
Medium 250	49,500
Low 200	39,500
Assessed valuation of houses	\$1,485,000
City assessed value less offices	83,485,170
total assessed	84,970,170
City budget 1963	1,594,127
Less direct cost of offices (medium)	2,250
Balance	1,591,877
Marginal cost of houses total	
High	1,649,297
Medium	1,641,377
Low	1,631,477
New tax rate	
High	\$19.40
Medium	\$19.31
Low	\$19.19
1963 tax rate with offices	\$18.72

OTHER EFFECTS

The economic impact of the location of the Continental Baking Company and the Chrysler Corporation was the primary concern of this thesis, but there are other, perhaps equally important effects of interest. The character of Rye as a residential community was a primary concern of the planners. Have the offices adversely affected this character?

One way to gauge this is to query the people who live near these offices -- those who are most affected. Unfortunately for this analysis, there were no houses near Chrysler (again planning?); therefore the following results pertain only to the Continental Baking Company.

Two questions were asked -- 1) do they object to having the Continental Baking Company as a neighbor, and 2) would they have preferred to have houses there instead. Eight households were contacted. In response to the first question, none had any objection to Continental. In response to the second, three were indifferent, and five preferred having Continental to houses. This vote of approval is strong, yet not very unusual for office developments.

In a study of the reactions of residents living near the Reader's Digest office in New Castle, 53% of nearby residents indicated approval, 6% were unfavorable, and the remainder were indifferent.⁴⁷ But in White Plains, a more mixed reaction

⁴⁷Westchester County Department of Planning, CHANGES IN WESTCHESTER (White Plains: authors, 1955) p.24.

to the General Foods offices was observed. A survey was made before construction and another a few months after. The reactions before and after were: in favor, from 29% to 26%; opposed, from 37% to 21%; and indifferent, from 34% to 53%.⁴⁸ Why has the reaction to the Continental Baking Company been so favorable?

First, it is a very handsome building (in this writer's opinion much more attractive than most suburban schools) located on a very attractive rolling site. If there was no sign in front, one might easily mistake it for a school. Its building coverage is only about 5 percent of the site. It is situated in the middle of a large lawn with tall old trees and a meandering brook in front. An old stone bridge which crosses the brook has been left in place.

A second factor is that Continental is concerned with community relations. A recent 6 page letter to the City Manager in favor of permitting Continental to use a rear exit at closing time may illustrate this. The person who wrote this letter owns the most expensive house immediately adjacent to the company. He wrote: "In recent years, Continental has been cooperating with the neighbors, including myself, by informally permitting small children to sleigh ride and play ball, etc., on their property and this has been helpful in this area in keeping the children, including my own, out of the streets. We are grateful."

⁴⁸Ibid., pp.22-24.

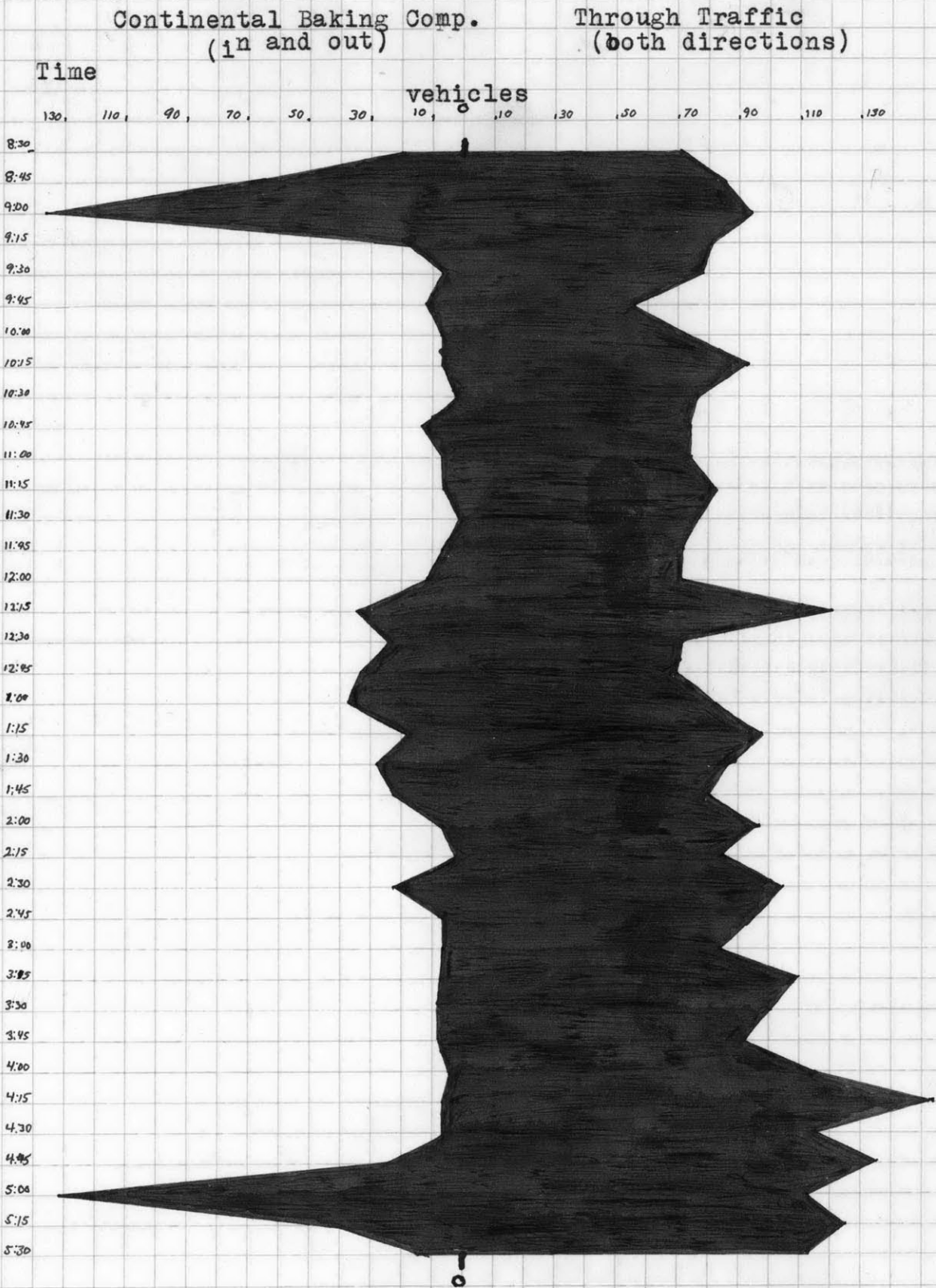
A possible source of annoyance and inconvenience might be the traffic generated by the offices. A traffic count and study was made for Continental, and spot checks for Chrysler. Even when Continental closed at night, no through traffic was delayed longer than one cycle of the traffic signal. No delays were seen at Chrysler. The chart on the following page shows the traffic count.

A final effect of the offices was an expansion of job opportunities for Rye residents. These were primarily opportunities for secondary wage earners. Of the sixteen persons who lived in Rye before Chrysler and Continental came, eleven were women and five were men. In addition, employment was given to the wives of eight new Rye residents.

Thus good architecture, low building coverage, adequate roads, and neighborhood cooperation have resulted in good community relations.

Chart 6

Traffic Count - December 3, 1963



CONCLUSION

The main purpose of this thesis was to test whether suburban office developments provide greater revenues than costs. As stated in the introduction, the propriety of excluding "non-profitable" land uses nor the metropolitan effect of office development were to be analyzed. This thesis has shown that in the case of Rye, offices do provide greater revenues and are a valuable asset to the community. By analysis of municipal costs and revenues, it was found that the offices provided overwhelmingly higher revenues than direct costs. Even assuming a high estimate of direct costs, these costs could be increased to be 20 times what they presently are and the offices would still provide a very handsome return to the city. A good part of the reason for this was the fact that Rye had a very strong planning program and that the companies had to bear all of the on-site as well as off-site capital improvements. In addition: a) there was excess capacity in municipal services in the area, b) the offices were located on a four lane county road, c) no other municipal improvements were required.

But we also have seen that an extremely critical factor is the number of new residents attracted to the city as a result of employment with these companies. The cost of servicing these new families was four times higher than the direct cost of servicing the offices (assuming high costs).

This submerged iceberg of indirect costs bears very careful attention, for if more families had moved to Rye, the profit of the offices might have been swept away. More families moving to Rye may happen in two ways.

First, the companies may hire more people. If the present ratio of total employees to tax losses continues (the ratio being 50 to 1), a total of 2,000 employees would have to be added to eliminate the tax surplus. Under the present zoning ordinance, a maximum of 383 employees may be added at these sites. Thus as long as the ordinance is not changed, it is impossible for Chrysler and Continental to expand enough to eliminate the profit margin. Even if they could, the expansion would require more buildings and thus more taxes.

The second possibility is more dangerous -- that the ratio of resident employees may change. Our first step was to check whether Rye's present percentage of resident was unusual. It was not. We then delved into numerous studies to see if as time passes, we might expect more employees to move closer to their source of employment. The mass of evidence was to the contrary -- if we may once more quote from the M.I.T. Route 128 Study -- "It appears that when people move after taking employment at a Route 128 plant, their tendency is to move into a different town from the one where their plant is located." The exact same trend was evident in Rye! After reaching a peak of 63 resident employees in 1959, the number of Continental resident employees declined to its

present 41. Thus these offices will continue to provide an excess of revenues to costs.

How does this conclusion stand for other communities? The first bit of evidence is that other studies, in spite of weaknesses pointed out, have come to the same conclusion. This author has not read, nor read about, any study that has reached an opposite conclusion in regard to suburban office developments. Second -- Rye is not an unusual city. Granted that Rye is generally a wealthy community and new homes cost between 30 and 40 thousand dollars, there are homes available for less than \$15,000. Perhaps if more homes were in this price category, more employees might have been attracted to the city, but this is a matter of speculation. From Loewenstein's work in the suburbs of Philadelphia and the Route 128 Study which examined home-work relationships in a variety of classes of suburbs, it seems that close proximity to work is not a decisive factor. As long as a person has to commute by automobile, it may be a matter of indifference between travelling 15 minutes or 1/2 an hour to work. It may be quite possible that people enjoy having a separation of home and work; that they desire a period of transition. If these hypotheses are true, then a suburban community may not have to fear having many employees move to the community. One major qualification is however, the community must have good automobile access. Otherwise, more people might move to the town. But, an office would probably not be built in a community with poor accessibility.

Character of a community might also be very important. It has been suggested that the expense of Rye may have prevented some employees from moving there. The opposite may also work. While making a preliminary study of the AVCO Company in Wilmington, Mass., the author found that of 3,000 employees at this research and development establishment, only a fraction lived in the town. Quote the personnel director: "If more than a hundred live here, I'd be really surprised." The reason for this is that Wilmington is a largely undeveloped lower middle class community. The engineers and other professional people preferred to live in towns like Lincoln and Lexington. Most of the general office employees and machine operators commuted from Lawrence and Lowell. They had not moved to Wilmington even though "the price was right" and there was plenty of room.

It has already been mentioned that a factor in Rye's favor was that it had excess capacities for many municipal services. This is once again not a unique feature. Except in a totally undeveloped community, there always exist excess capacities. The big question is where. This once more comes back to sound planning. The office sites were in areas serviced with water, sewer, fire and police protection. Obviously if these offices were placed in a far section of the city where these services were not available, considerably higher costs could have been precipitated.

Another factor which bears very close examination is

traffic generation. Even though an establishment may make very handsome financial returns to a community, it may become unbearable if the traffic generated cannot be handled by the existing roads. This author knows of several Long Island communities which become absolutely impassable when their aircraft plants empty out. Even though they may empty onto a four lane road, major installations will almost always block traffic. If the cost of delays and inconvenience is computed for residents, the tax benefit may appear to be a niggardly sum. This is not to mention the cost if other road changes are required. Thus offices in the 2,000 to 3,000 employee range may be very undesirable for suburban communities.

Thus one must plan well. Rye has had an outstanding planning program, but good planning is something any community can achieve, if it works hard enough at it.

BIBLIOGRAPHY

1. Adams, Howard and Greeley, Suburban Office Study, May 1953, mimeo.
2. Adams, Leonard P. and MacKeseey, Thomas W., Commuting Patterns of Industrial Workers, Ithaca, Housing Research Center, Cornell University, 1955.
3. Architectural Forum, "Does Industry Pay Its Way," Vol. 114, No. 1 (January 1961).
4. Bagby, Scott, "Beware of the False Prophets," American City, Vol. 69, No. 5 (May 1954).
5. Barnes, Ralph and Raymond, George, "The Fiscal Approach to Land Use Planning," Journal of the American Institute of Planners, Vol. XXI, 2-3, (Spring-Summer 1955).
6. Board of Education, City School District of Rye, Final Budget for Fiscal Year July 1, 1962 - June 30, 1963.
7. City of Rye, Tax Budgets for 1957, 1960, 1962, 1963.
8. Clark, Frederick P., "Office Buildings in the Suburbs," Urban Land, Vol. 13, No. 7 (July 1954).
9. Clark, Frederick L. and Associates, Land Use and Community Taxes, Rye: authors, 1958.
10. Duncan, Beverly, "Factors in Work-Residence Separation," The American Sociological Review, Vol. 21, (February 1956).
11. Esser, George H. Jr., Greenboro Suburban Analysis, Chapel Hill: Institute of Government, University of North Carolina, 1956.
12. Esser, George H. Jr., Are New Residential Areas a Tax Liability, Chapel Hill: Institute of Government, University of North Carolina, 1956.
13. Fagin, Henry, "Financing Municipal Services in a Metropolitan Region," Journal of the American Institute of Planners, Vol. XIX, No. 4, (Fall 1953).
14. Foley, Donald, The Suburbanization of Administrative Offices in the San Francisco Bay Area Region, Berkeley: University of California, 1957.

15. Greater Boston Economic Study Committee, Financing Local Government in the 1960's, Boston, 1961.
16. Greenwich, Connecticut, Planning and Zoning Commission, Economic Study, 1954.
17. Groves, Harold and Riew, John, "The Impact of Industry on Local Taxes - A Simple Model," National Tax Journal, Vol. XVI, No. 2 (June 1963).
18. Homer Hoyt Associates, Economic Survey of Montgomery and Prince George Counties Maryland, Washington: authors, 1955.
19. Homer Hoyt Associates, Economic Survey of the Land Uses of Arlington County, Virginia, Arlington: Planning Division, 1951.
20. Homer Hoyt Associates, Economic Survey of the Land Uses of Evanston, Illinois, Larchmont: authors, 1949.
21. Homer, Hoyt Associates, Economic Survey of the Land Uses of Fairfax County, Virginia, Washington: authors, 1954.
22. Hoover, Edgar M. and Vernon, Raymond, Anatomy of a Metropolis, Cambridge: Harvard University Press, 1959.
23. Isard, Walter and Coughlin, Robert, Municipal Costs and Revenues, Wellesley: Chandler-Davis, 1957.
24. Leonard, William N. and Clark, William F., Does Industry Pay Its Way?, Hempstead: Bureau of Business and Community Research, Hofstra College, 1956.
25. Loewenstein, Louis K., "The Impact of New Industry on the Fiscal Revenues and Expenditures of Suburban Communities," National Tax Journal, Vol. XVI, No. 2 (June 1963).
26. Mace, Ruth, Cost-Revenue Research in the United States, Chapel Hill: Institute of Government, University of North Carolina, 1956.
27. Margolis, Julius, "Municipal Fiscal Structure in a Metropolitan Region," The Journal of Political Economy, Vol. LXV, No. 3, 1957.
28. McHugh, Dodd, "Cost of Public Services in Residential Areas," Transactions of the American Society of Civil Engineers, CVII, 1942.
29. Morrow Planning Associates, Study Comparing the Fiscal Results of Research Laboratories versus Single Family Residences, Borough of Heworth: 1959.

30. New Canaan, Connecticut, Town Planning and Zoning Commission, Executive Offices and Research Laboratories, 1960.
31. Rye City Planning Commission, Building Zone Ordinances as enacted May 2, 1956, and amendments to January 18, 1961.
32. Rye City Planning Commission, Land Subdivision Regulations, as adopted by Planning Commission June 25, 1957 and amendments approved by Common Council August 21, 1963.
33. Rye City Planning Commission, Memorandum PC#403-63 - Recommended Zoning Amendments to Permit Cluster Development, August 13, 1963.
34. Rye City Planning Commission, Memorandum PC#408-63 - Joint Meeting of Rye City Board of Education and Planning Commission, Oct. 8, 1963.
35. Rye City Planning Commission, On Our Way - The Rye Development Program, May 1946.
36. Rye City Planning Commission, Rye City Development Plan, 1963.
37. Transportation Engineering Division, Department of Civil and Sanitary Engineering, Massachusetts Institute of Technology, Economic Impact Study of Massachusetts Route 128, Cambridge, authors, 1958.
38. Walker, Mabel, Business Enterprise and the City, Princeton: Tax Institute Incorporated, 1957.
39. Westchester County Department of Planning, Changes In Westchester, White Plains, authors, 1955.
40. Westchester County Department of Planning, Employee Travel Patterns In Westchester County, White Plains, authors, 1957.
41. Westchester County Department of Planning, Westchester Commuting Patterns, White Plains, authors, 1963.
42. Wheaton, William L.C., "Application of Cost-Revenue Studies to Fringe Areas," Journal of the American Institute of Planners, Vol. XXV, No. 4, (November 1959).
43. Wheaton, William L.C. and Schussheim, Morton J., The Cost of Municipal Services in Residential Areas, Washington: United States Government Printing Office, 1955.