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ABSTRACT

Assuming that today's school administrator must manage the organizational contraction associated with declining resources, the authors of this research report investigated the causes of contraction and its effects on school systems in terms of demographic changes, economic changes, and political considerations. The researchers examined the policy alternatives of closure, consolidation, and shared use by analyzing the impact of closure on three school sites and of consolidation and shared use on one site each. Six variables relating to the size of the general and student populations within each school's service area were considered for the years 1960-80, using U.S. census and 1974 Polk Profile survey data. The research results showed that school closure as a policy choice had a neutral effect on most variables. When there were immediate impacts, they tended to be negative. However, in one case school closure was related positively to increases in the school-age and younger populations. Shared use was related negatively to most demographic variables. When assessment of the relationship between the intervention and the demographic variables was possible, there tended to be a balance between the neutral and positive trends. Consolidation showed little relationship to changes already in progress. The author concludes that the contraction policy chosen has an impact on neighborhoods where environmental forces converge and resource scarcity increases competition. (Author/PGD)

MANAGING CONTRACTING SYSTEMS

THREE POLICY ALTERNATIVES

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MANAGING CONTRACTING SYSTEMS - THREE POLICY ALTERNATIVES

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The management tasks and decisional setting confronting the school administrator today is markedly changed from the growth era of the 1950s and 60s. The challenges facing educators then were the need for more teachers and classrooms to meet rising enrollments, and more efficient schooling to meet the challenge of the perceived superiority of Russia posed by Sputnik. Instead of expansion and growth, today's school administrator must oversee the necessary contractions associated with declining resources. State revenue sources are threatened by those who would limit or roll back taxes, and a new federal administration has reduced federal assistance to education. Declining student enrollments mean declining aid from traditional sources, and fixed costs cannot be reduced evenly in proportion to enrollment declines.

The management of declining resources had been a difficult problem for school administrators and school board members. They were relatively ill equipped to effectively manage the problem, largely because their training and experience took place in periods of incremental growth, and the decline started at a time when they had little, if any, time to plan for the impact of that decline. Furthermore, the difficulty they experienced in managing the decline had been compounded by the lack of uniformity in the rate of decline throughout the nation, and within regions and individual school districts. The variance in birth rates according to race and socioeconomic status and the relative imbalance between in- and out-migration in individual school districts has greatly increased the complexity of the problem. Parents, students, and teachers who were affected by the decisions often seemed better organized and more politically sophisticated than those who were trained as school administrators or elected as school-board members.

Observing this phenomenon led Eisenberger and Keough (1974) to conclude that parents, students, teachers, and principals had enormous investments in their local schools--social, emotional, and financial. Despite the psychological pressures, however, some schools would have to close, and alleviating the fears of these interested groups was probably the most important aspect of a successful school-closure policy. Thus, what was needed was a guide to effective school closing. Indeed, studies conducted early in the decade found that school districts faced with declining enrollments and resources chose, in the main, one policy alternative--school closure. Two initial studies, however, commissioned by the National Facilities Laboratory (1974) and by Andrews et al. (1974), suggested that the decisional setting was more complex and that defining the "problem" and assessing the impacts of policy alternatives were important. Andrews et al. noted that during 1950-70, a period of unparalleled growth, decisions regarding the placement of new schools were relatively simple. Population movements already under way were projected and new schools were built in open spaces near those areas of population growth.

Decisions regarding enrollment declines, consequent excess space, and possible closure of schools, however, were considerably more complex. Andrews further noted that:

> They are complex because of the relationship between school decisions and the consequent effects these decisions may have upon the environment surrounding the schools. We are becoming more sensitive to the deteriorating condition of our cities, the demands of an advanced technological society, and the need to preserve our environment. We are beginning to recognize the interrelatedness of all variables in our ecosystem. In sum, it could be argued that educational decisions are ecological decisions and that the negative consequences of short-sighted ecological educational decisions are costly and difficult to reverse. (p. 32)

Reviews of the literature, at that time, indicated a rather limited information base, although several study efforts had been made. Some studies outlined procedures for closing schools and (as was the case with the Educational Facilities Laboratory study) also provided an analysis of population projections; but little emphasis had been placed on the ecological aspects of the problem of school closures in response to declining resources. Thus, in 1974 Andrews et al. conducted a nation-wide study of 60 school districts in an attempt to extend the information base of ecological aspects by assessing the experiences of these school districts that had closed elementary schools, or were planning to do so.

Five major topics were explored: (a) criteria used for school closure decisions, (b) optimum elementary school size and methods of determining building capacity, (c) amount of cost saving resulting from closure of elementary schools, (d) disposition of closed buildings, and (e) impact of closures on surrounding neighborhoods.

In deciding which schools to close, the majority of the districts (77.5 per cent) used three or fewer criteria, the most frequently used being: (a) declining enrollment, (b) age of building, (c) desegregation efforts. Relatively few districts used such criteria for closure as: impact on neighborhoods, impact on educational programs, crime rates, property values, or out-migration of young families.

Twenty districts had conducted either formal or informal evaluations regarding the impact of closure decisions. For the most part, these districts reported that: (a) neighborhoods quickly diminished in viability after the elementary schools were closed, (b) some neighborhoods were completely destroyed, (c) support for public education diminished in the districts as a result of the closure decisions, and (d) extreme care must be taken in order to avoid turning a district toward further racial isolation of its pupils.

Those districts conducting formal evaluations of the impact of the school closure decisions further concluded that in those areas: (a) in some cases, the wrong ones had been closed, and new schools would have to be built, (b) property values declined, (c) crime rates increased, (d) young families were more selective in buying houses in those areas, and (e) there was a sharp decline in the number of students residing there.

It seems that when faced with the phenomenon of declining enrollment, school districts decided to close elementary schools. Having made the assumption that: (a) declining enrollment was a "problem," and that (b) closure was the best "policy alternative," these districts applied a limited number of criteria to their various schools and proceeded with closure. The criteria used most frequently were declining enrollment and age of facility.

The authors concluded that, based upon the experiences of the 60 school districts, the consequences of closing schools may be much more far-reaching than originally suspected. There were preliminary indications that the quality of life in a neighborhood may be adversely affected by a closure decision.

> But, in any case the closure of elementary schools is an exceedingly complex issue, having extensive and pervasive ramifications in virtually all aspects of urban life. Once an elementary school is closed, the environmental forces of outmigration, population decline, and neighborhood deterioration are set in motion. It is difficult--if not impossible--to reverse these forces. (p. 32)

Similarly, Rosenfelt concluded from his review that:

> Closure decisions are rarely made on the basis of rational arguments. Emotions cloud the issues, and the perceived benefits or losses depend on which outcomes are valued. In truth, the decisions ought to reflect the needs of the entire community--needs often met by the alternatives to closure. (p. 15)

The conclusions drawn by Andrews et al. (1974)--that once an elementary school is closed, powerful forces which may lead to the deterioration of a neighborhood are set in motion--were further tested in a study commissioned by the National Institute of Education and designed to assess in a more systematic manner the environmental impacts of closure decisions. This study (Eisman et al., 1976) was conducted in a single urban school district and included the study of nine elementary school attendance areas. Closed schools or schools threatened with closure served as experimental neighborhoods and matched neighborhoods where no closures had occurred served as control sites.

The study was designed to answer the basic question, "Is the 'quality' of a neighborhood changed by school closure?" The findings of the study were that respondents who had experienced closure thought the neighborhood did or would change because of the school closure; the closure may lead in some areas to rapid changes in overall community structure; no consistent relationship or pattern of increased crime or increased incidences in residential fires was found; and that some support for the hypothesis that the closure had impacts on property values and property turnover. Where differences were found, the experimental neighborhood experienced a greater property turnover rate than did its control site, suggesting less neighborhood stability during the post-closure period, caused by increased outmigration of families. While no long-term impact was found on assessed land values, a short-term impact was noted in the experimental neighborhood where an absolute drop in sales values occurred in the year immediately following closure. Residential investment increased in the control site and commercial investment increased in the experimental site.

The findings from this study supported the hypothesis that closure of an elementary school can have a negative impact on the environment. However, that effect is neighborhood specific and not generic to all school closure decisions. Greatest impacts were observed in areas of high transition and/or competition for land use. This condition lead the authors to conclude that an urban elementary school is one factor affecting urban neighborhood vitality. Further, the possibility that school closure policy may cause people to change attitudes toward schools and their neighborhood or cause them to move, is a factor that deserves careful consideration in future policy determination.

Both the Andrews et al. study (1974) and the Eisman et al. study (1976) had weaknesses. Andrews and his colleagues dealt only with reported and, in many cases, school administrators' informal observations of impacts on neighborhoods; Eismann et al. (1976) failed to provide a clear criterion for the determination of significant impacts, which may have caused misinterpretations in some cases. Furthermore, lack of precisely matched neighborhoods raises some concerns about the validity of the comparisons. However, in spite of these weaknesses, policy issues and their relationship to environmental impacts were raised and in some cases documented. While Andrews et al. concluded that closure of any neighborhood elementary school set powerful forces of potentially negative impacts into motion, the Eisman et al. study clearly found, in spite of any methodological limitations, that all neighborhoods were not as fragile as Andrews and his colleagues had suggested in the earlier study, but that the closure policy in selected neighborhoods had a negative ecological effect.

Nearly a decade has passed since the initial studies, Fewer Pupils/Surplus Space (Educational Facilities Laboratory, 1974) and The Environmental Impact of School Closures (Andrews et al., 1974) were conducted in order to identify the potential magnitude of the problem and the negative effects of closure decisions. The ensuing decade has provided a laboratory

to study the effects of various policy alternatives and the management problems associated with responding to the decline. The issues have become more focused, the policies more diverse, and the decisional alternatives more comprehensive. Seemingly, the policies with respect to the management of the problem, the process, and resulting decisions may, themselves, contribute to the already-complex problem faced by the school administrator and school board in managing the decline.

Several issues have become clear, not the least of which is the definition of the problem itself. In the following sections I deal with some of these issues (e.g., the definition of the problem, demographic changes, etc.) before turning to the results of the study reported here.

Issues: The Problem Defined

The overall period of decline associated with both cities and urban school districts can be viewed as the result of several different types of changes that have been occurring in these sectors during the last fifteen years. While there have been thousands of individual changes within individual cities across the country, the major changes can be grouped into three general categories--demographic, economic, and political. Regarding the question of which change was most instrumental in initiating the decline, there is no clear-cut response. What is important to this discussion, however, is that these categories are interrelated and interact with each other in creating a general problem. Many of the changes initially occurred somewhat simultaneously within this environment, interacting with each other and resulted in yet more problems which, in turn, caused changes generating yet a new set of interrelated problems. Thus, the pathologies are systemic. The problems facing school districts today, while not exactly the same nation-wide, are the problems of the cities in which they are located. The most pervasive problems have evolved with changes in the economy, the era of decline encompassing the 1970s and early 1980s.

Along with this period of decline has grown yet a larger problem, both affecting and affected by the economic and fiscal problems associated with the period--the problem of political non-ownership of a politically tense situation in which no one wants to become involved.

Declining enrollment is only a symptom of the larger problem and must be viewed as such. However, a symptom can become pathological. An unchecked fever can destroy an organism if left uncontrolled, just as the underlying disease can destroy it. One must not lose sight of the fact, however, that efforts to reduce the fever (taking aspirin) is only designed to control the symptom and does not focus on the underlying causes. We must not become preoccupied with symptoms to the exclusion of the underlying systemic problems.

What do we do, then, in the face of declining enrollment in the school system? Do we remorsefully bang our collective head?--or tenaciously bury it in the sand? Or do we use our managership to analyze the dilemma, identify the problems and trends, and redesign our thinking? The latter of these alternatives provides the most promise. To do so we must first shed the notion that we are "managing decline," but rather take the view that we are faced with the management of "contracting systems."

The word contract is composed of two Latin words--com meaning together, and trahere, meaning to draw. It has two verbal definitions, one being "to write up an agreement or covenant," the other "to make smaller." Webster's New World Dictionary gives one transitive-verb meaning as "to reduce in size or bulk." I believe contracting is a more appropriate way to conceptualize the problems and the processes needed to restructure and compress the public school system. Other words and phrases such as "depression," "declining," and "no-growth," strike me as less-than-satisfactory frameworks. Contraction, with reference to public schools, is a broad term to describe: (a) controls and reductions in tax dollar transfers to schools for salaries, capital construction, facilities, maintenance and operation; (b) limitations on the hiring of teachers, administrators, and other staff; (c) cuts in budget allocations for school programs, particularly special education; and (d) use and/or reuse of schools.

A number of observers (Taylor, Ray, Weiler, & Jecks) conclude that contracting educational systems, triggered by declining enrollment, have become characteristic of the industrialized or developed nations, as can be seen in Table 1. This seems to suggest that developed and developing nations have more in common than first meets the eye; and that we have yet to thoroughly explore and define the nature and extent of the contraction issue. For instance, while enrollment is presently declining in the elementary and secondary schools, and to a lesser degree in college and university programs, the numbers of adults engaged in part-time and non-formal education is dramatically increasing.

The causes of contraction in education are complex and varied. Among the more obvious are: (a) national or regional economic dislocation and inflation, (b) the competing demands of other sectors--economic, health, social welfare, military, manpower, etc.; (c) political rivalry and maneuvering to control fiscal resources and the cost of education; (d) lower birth rates resulting in declining enrollment; (e) public hostility toward schools and lack of confidence in the educational system.

The manifestations of contraction are intricate, diverse, and compounded. For instance, budget cuts result in the reduction of teaching and other staff; this, in turn, means a higher pupil/teacher ratio, weaker support services, and program cutbacks which cause a lowering of the quality of education. School closure may affect marginal savings, but community breakdown may result, with serious social cost ramifications.

Appendix — From: Ray, D. "Collapsing Educational Systems..."

TABLE 1

Birthrates in Selected Industrial Nations (live births/1000 population)

	1930-34	1940-44	1944-49	1950-54	1955	1960	1963	1965	1968	1970
AUSTRALIA	17.6	19.5	23.1	23.0	22.6	22.4	21.6	19.6	20.1	20.6
AUSTRIA	15.1	19.1	16.7	15.0	15.6	17.9	18.8	17.9	17.2	15.2
CANADA	22.2	23.2	27.0	28.2	28.2	26.7	24.6	21.4	17.6	17.4
CZECHOSLOVAKIA	19.7	20.8	22.4	22.0	20.3	15.9	16.9	16.4	14.9	15.9
ENGLAND & WALES	15.3	15.5	18.0	15.5	15.0	17.5	18.2	18.1	16.9	16.0
FRANCE	17.3	16.3	20.3	19.5	18.6	17.9	18.2	17.7	16.7	16.7
GERMANY (FDR)**	16.3	17.4	16.9	16.1	16.0	17.8	18.5	17.9	16.1	13.4
HUNGARY	23.2	19.3	19.9	21.1	21.5	14.7	13.1	13.1	15.1	14.7
ISRAEL*	30.6	25.1	28.6	32.4	29.2	26.8	25.0	25.8	25.5	26.7
ITALY	24.5	20.8	21.1	18.4	18.1	18.3	19.0	19.2	17.6	16.8
JAPAN	31.8	30.1	30.1	23.7	19.4	17.2	17.3	18.6	18.6	18.8
POLAND	28.9	N.A.	28.4	30.1	29.1	22.3	19.2	17.3	16.2	16.8
SWEDEN	14.4	17.7	19.0	15.5	14.8	13.7	14.8	15.9	14.3	13.7
SWITZERLAND	16.7	17.9	19.4	17.3	17.1	17.6	19.1	18.8	17.1	15.8
U.S.A.	17.6	19.9	23.4	24.4	24.7	23.7	21.7	19.4	17.5	18.2
U.S.S.R.	N.A.	N.A.	N.A.	26.4	25.7	24.9	21.2	18.4	17.2	17.4

* Prior to 1949 Israel data is for Jewish population of Palestine.

** Prior to 1945 German figures were for the 1937 borders.

Several nations have adjusted borders during the period of this data.

Source: U.N. Demographic Yearbook (various years).

It is certainly not an easy task to sort out the causes of contraction and to discriminate causes from effects, for effects cause other problems, and the solution to one problem may give rise to others. Lower enrollment in industrialized nations is mainly an effect of the lower birthrate, due, in part, to increased standards of education and living. Reduced school enrollment gives rise to demands for reductions in educational spending, also pressured by political and economic factors. School closure may result in tax-dollar savings, and it may cause community stress.

In the face of urgent demands on the school system, educational management specialists must waste no time in probing big questions such as: What are the causes and effects of contraction? What will be its short- and long-term impact on the schools, the community, and the profession? What must be done to improve management responses, to relieve the pressures, and to combat negativism? Getzels would have us transform the issue of contraction into a manageable problem. The educational system of an industrialized country must be seen as a part of a larger macro-system of "interlocking sectors" based on demographic, social, and economic requirements. While such interrelated changes can be considered as a whole--a dynamic situation of change--the following discussion of these major changes considered each of the three areas as separately as possible.

Demographic Changes

Many demographic changes have occurred within the last several years, the result of which has been a redistribution of population throughout the nation. This has occurred as a result of an ever-increasing segment of the total population becoming geographically mobile. There has been an overall decline of population in large cities as white, higher-income families migrate to the suburbs to escape increasing levels of crime, traffic congestion, and water and air pollution. While some persons have moved and are still moving into the cities, they number much fewer than those moving out. Generally, there has been an influx of poor, uneducated minorities into the larger central cities, creating within those boundaries a high-need, low-income population. With this increase in numbers of minorities has come an accompanying increase in the levels of racial segregation and a drop in the median income level.

While minority influx has been the most prevalent trend, there have also been some young, white, well-educated but childless couples moving into the central city areas. This migration has been one of the conditions that has exacerbated the problem of declining enrollment in schools. The declining birth rate in the 1960s and 1970s has contributed greatly to this problem as have a decline in the fertility rate and a liberalization of existing abortion laws, resulting in fewer children enrolled in schools.

This factor of declining enrollment, combined with the influx of poor minorities into the central cities has resulted not in an increase in the

total school-age population, but an increase in the number of expensive-to-educate school-age children needing additional services beyond those of regular education in a wide variety of areas. Among these needs are vocational education, compensatory education, special education, and language education. These conditions represent a marked change from the view of city life and urban education held prior to the 1960s. At that time, it was deemed far more desirable to live in city areas. In earlier times, in fact, parents held city schools in high regard and preferred to enroll their children in them. In the late 1960s and early 1970s, in the largest cities, there emerged a trend toward using private rather than public schools. Whether this caused a drop in quality or in quantity is not known, but whichever is the case, by 1975, large city schools were producing students who were, on the average, below the national median in science, writing, reading, literature, music, social studies, and mathematics (Digest of Educational Statistics); and who were consistently and notably lower than students in suburban areas. These demographic changes have, in combination, brought about a decline in both city life and urban educational institutions.

Economic Changes

Fiscal capacity. During this same period there has been marked change in the general economy. The impact of this change upon urban areas has been a decline in the economic base supporting employment and income and, in turn, city revenues. The major factor contributing to this decline has been an ever-increasing private employment suburbanization to the extent that currently the private economy in cities does not offer a sufficient rate of growth to sustain increases in city budgets.

Accurate measures of the economic base--the fiscal capacity of cities--is of extreme importance to consider in this discussion of contraction since both city and urban school districts share the same sources of revenue and both are finding operating funds difficult to obtain.

> Until now, we've measured fiscal capacity primarily by assessed property valuation per child, and that makes sense, because most local school districts acquire revenue through the property tax. Now we're finding that the composition of the property tax is equally important. School districts with a high percentage of commercial and industrial property tend to have higher expenditure levels than those with residential property. Income is also an important factor in tax rates and spending levels (American School Board Journal, 1978).

The consideration of the economic base, then, needs to go beyond the property valuation standard. An expanded measure of the economic base might better be considered to include the following:

1. All tangible property value per capita including both real and personal, taxable and non-taxable property. This is of particular importance if large amounts of real estate are becoming non-taxable.

2. The per capita resources of banks and other financial institutions.

3. Available human resources identified by characteristics of the total population as well as of the labor force, the most important of which are: age, with an increasing older population indicating a possible decline in economic conditions; level of education; income level and level of employment, where increasingly lower levels indicate decline in fiscal capacity.

4. Personal income per capita.

5. Number and value of building permits. Little or no land being available for new development will contribute to a rising tax rate which, in turn, discourages new development.

6. Business and retail sales. In this period of economic decline, there has been an increase in the levels of wholesale and distributing businesses within urban areas, resulting in the cities functioning as service centers for suburban communities rather than vital, growing areas.

Inflation. These past fifteen years have been characterized by an ever-increasing rise in the rate of economic inflation which has had a great effect on property values, retail sales, personal and corporate income, and state and local tax bases. The effect of the tax base particularly has been a great problem since in an inflationary period the tax base (particularly in inner cities) does not increase as rapidly as do expenditures in all areas of the economy. On a nation-wide level, central city property value increases have not even been equal to general property value increases, contributing to even greater than average problems in urban areas.

In the central city areas in recent years, there has been a deterioration of the tax base as judged by standard measures. There has been varying increases in assessed property valuation and tax rates, accompanied by a general deterioration of central city housing stock with increases in available multiple housing units. Despite this, taxable property per student in central city areas is valued at a higher than average level. This phenomenon results in an increase in the commercial and industrial concerns within the cities. Accompanying this has been an increase in non-taxable property within the larger cities, in effect, resulting from a growth in public housing. In 1978, for example, 45 per cent of the nation's public housing was contained in the 35 largest school districts (Murphy, 1978, p. 260).

Another concept of importance to both revenues and expenditures is that of increasing overburden. Municipal overburden is, in essence, a drain on the city budget resulting from the requirement of a city to provide increasing funds for police, fire, sanitation, health and hospital, and public welfare. These services have been increasing in recent years due to the increase in the low socioeconomic status of the population. In addition, cities are required to provide certain services to suburban areas. The portion of the population with the ability to pay for the services, however, is moving into the suburban areas where costs are lower, thus increasing the tax burden on employed residents within the city.

Education, too, is experiencing a period of overburden. There is a contracting fiscal capacity to fund services, a high concentration of low-income, special-need students, and a trend of declining enrollment contributing to high personnel costs and excess physical needs. As in the case of cities, the needs of the school district too may cause changes in the tax structures. This also contributes to changes in assessed property values--the capitalization within the area. What occurs then is a spiral of decline in the economy. While demand for services is increasing, the overall ability to pay is decreasing, placing undue tax burden on the city population, which is the least able to pay.

Political Considerations

Within every community and subcommunity environment there exists a political framework constraining the decisions made by policy makers within that environment. This political framework, with its accompanying constraints, exists at the local, state, and federal levels, and affects all areas and levels of policy. Policy and fiscal decisions in both cities and urban school districts should be made with the intent to provide maximum benefit to all affected by those decisions. The reality of the situation, however, is that only politically expedient decisions are made--those that further the personal careers of the decision makers, reflecting the wishes of the most powerful interest group. The group in power, however, is not a consistent one and political values shift quickly from conservative to liberal and back again, resulting in inconsistent policy and fiscal decisions. As both city and urban school districts are experiencing a spiral of decline, these inconsistent decisions on policy and fiscal matters only serve to amplify the problems. Issues such as local control of government and schools, mandated versus optional programs, contract and union constraints, and racial concerns are some of the major critical areas for decision makers at this time. Consistency in decisions is required, keeping in mind that a decision in one area directly or indirectly affects all other areas.

The existing political environment in the urban sector is becoming increasingly complicated as well as fragmented. Competition for funds and governmental services is coming from a wide variety of interest groups.

This situation contributes to an overall feeling of fiscal conflict between local government and local school districts with a declining percentage of taxpayers who are willing to pay the high taxes required to support all necessary services. The courts and state legislatures are increasingly becoming involved in financing problems, particularly those of education. The urban/suburban split is widening, causing fragmentation in cross-area support for services. Stiff competition for funds and services is occurring both vertically, within educational and governmental departments and programs; and horizontally, between the government and educational sectors; as well as between departments and programs.

Summary of the Problem

The fiscal and economic health of our nation's cities and urban school districts is a topic for joint consideration. Finances and economics are inseparable. A decline in the economic base of a city (decrease in available funds) leads to inadequate services; to rising tax rates; to further economic decline. In school districts, the cycle is similar and closely related to the existing general economic conditions. A decline in population (out-migration to suburbs) leads to neighborhood deterioration; to deline in property values; to further out-migration; to school closure; to a further decline in poplation; and so on.

There is an interdependency between these sectors. A school system without a strong tax base and without individuals who value education, will have no financial resources--no public support; a city without good schools may not be able to attract and hold the middle class residents who revitalize the city and contribute to a strong tax base. The impact of contraction must be dealt with cooperatively by these two sectors. Joint decisions must be made regarding the allocaton of scarce shared resources--decisions based on an in-depth analysis of the effectiveness and efficiency of programs and services; decisions made to maximize benefits over costs; decisions removed from the political arena.

The decisions regarding resource allocation need to focus on the concept of scarcity. With only scarce resources available, they must be allocated among competing uses. Alternatives must be considered. There must be an increased awareness on the part of the public that resources can be combined in different proportions to reach goals that have been identified as of central benefit to the greatest number of people.

> Given a) the condition of scarcity and b) the possibility of producing commodities with varying proportions of inputs, decisions ideally should be made that employ the minimum-cost combination of resources for various commodities (Benson, 1978, p. 6-7).

Survival is also a key concept to consider.

> Survival [is] presumably a constant preoccupation of almost all organizations . . . depends not only on such mundane matters as efficiency and profits, but upon the acceptance of output and methods of operation by significant sectors of the organization's environment (Perrow, 1970, p. 99-100).

A master plan for economic stabilization, too, is of primary importance in coping with this cycle of contraction. Resource allocation decisions affect all sectors of the general economy of a city (e.g., taxes, expenditure levels, etc.).

> Without a master plan the "logical" solutions of contraction might in fact intensity the original problem. For example, reduced service and school accessibility leads to a reduction in school population to more school closures . . . the implication [being] that the community surrounding the targeted school has lost its youth and vitality (NSPRA, 1976).

Following this same example further, consider some options to school closure that could differently affect the prevailing general economic conditions but might, without closer examination of all related benefits and costs, be rejected as foolish or as not economically sound.

1. Absorption--using extra space for new school activities or to expand existing programs.
2. Expanding schooling opportunities--handicapped programs, adult education, vocational and career education, alternative schools.
3. Joint-venturing and community service centers.
4. Commuity college satellites
5. Sales and leasing--private schools, mental health clinics, day care, government offices.
6. Mothballing--(vandalism and decay, make this the least desirable option).
7. Demolition--value of building may be less than the value of the land.

Attitude toward the generation of alternatives and the management of contraction is the major factor in the acceptance of alternatives, such as those above, in allocating resources to obtain maximum city-wide benefits in government-related areas as well as in educational concerns.

Change, in periods of growth and of contraction, must be accepted as natural throughout the city and community. "Communities that retain the mind-set that decline is all bad view any solution as a step backward. Communities that accept decline as a natural--and not necessarily permanent--phase in their evolution have found it possible not only to accept but even to welcome any of the effects [of decline] on their schools" (NSPRA, 1976, p. 12), and by extension, the effects of contraction on the functioning of the city as a whole, for educational institutions cannot be viewed separately from their local environments.

> The educational system of an industrialized country should be part of a larger macro-system of "interlocking sectors" based on social and economic requirements, manpower planning and cost-benefit analysis (Moir, 1979).

As such, subject to the same problems as those other "interlocking sectors" with cooperative solutions to those problems to be generated for the maximum benefit of all.

What is needed at this time is additional policy research oriented toward assisting city governments and school districts to cope with the problems created by the contraction; and to guide state and federal legislators as they seek to enact policies that will ease the burden of decline, and to assist them in making decisions when merited (Odden, 1980, p. 150).

The Study: Environmental Impacts of Selected Policy Alternatives

This study was designed to provide additional policy research on the potential impact of pursuing selected policy alternatives in response to contractions in enrollment and/or revenue in selected urban sites. Central to this research study is the concept of managing contracting systems, with the attendant assumption that the decision setting consists of both the system (school district) and the environment (city) in which the schools were located. The school district and city interact and the linkages between the system and its environment transfer any pathologies in one to the other. Previous research evidence is scant on the environmental impact of policy alternatives for the management of contracting systems; however, the main hypothesis for this study was formulated from the conclusions of our previous work (Andrews et al., 1974) and the Eisman study (1976) which suggested that pursuing only a closure policy in response to contraction can led to negative impacts in selected neighborhood types. These previous studies focused only on the potential negative effects of a school closure policy; the study reported here, examined the relationships between three policy alternatives and environmental impacts.

The policy alternatives examined were: closure--the school is closed and its resident and/or attending population of students are dispursed to two or more adjoining school attendance areas; consolidation--the resident and/or attending population of students from two or more schools is merged into a single population, closuring one or more, or all buildings and constructing a new school, to serve the entire population; shared use where a compatible and/or similar school program is added to the existing school to enhance its program of offerings to the resident population and/or a community-of-interest school is created that combines resident students with the transfered-in population of students, all of whom desire "within school options."

The general thrust was one of examining the impact of the different policy alternatives on the following variables:

- Population and Land Use Trends
  (including changes in age structure, birth rates, racial composition, social and economic characteristics, demolitions and new structures, and occupancy rates in residential and commercial structures).

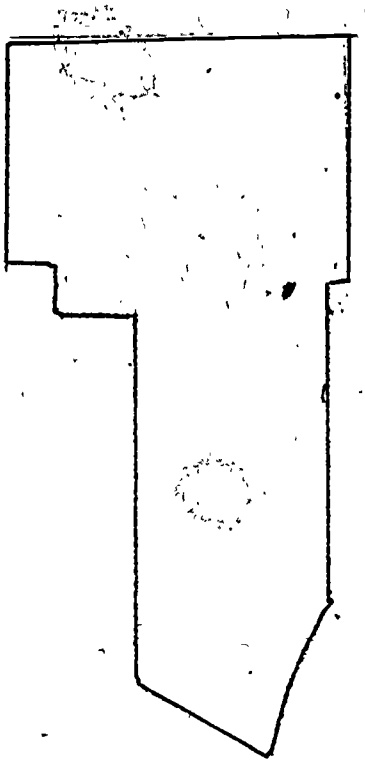
- School Enrollment Changes
  (including analysis of student mobility immediately following the policy choice).

- Residential Property Values
  (including physical characteristics of housing).

Because of the limited number of cases and the wide variability of situations represented in these cases, it is important to think of this study effort as exploratory. The most that can be said of a generalizable nature is that the conditions existing at the time of the policy choices and the observed impacts of the decision are different in each situation. While it may be possible to draw out of this study certain types of school situations and to formulate probable impacts for them, it is impossible to generalize across the widely different situations encountered in various urban school systems. The data presented here are but snapshots at four points in time of these dynamic variables and as such are limted. The analyses presented here are preliminary at this time due to the lack of availability of data from the 1980 census, which will shortly become available. With this in mind, discussion of impacts in relation to the policy chosen and the several variables is provided in the following sections. Heavy reliance upon U.S. Census and Polk Survey data for this analysis necessitates the usual cautions associated with use of these sources.

The following are brief descriptions of each school by policy alternative:

SCHOOL A (Closure)



School A
Boundaries at the time of decision (1971)

Enrollment: 460

Profile in 1960

Total population.....	5,825
Population under age 18.....	29.0%
Median family income.....	$ 11,600
Population 0-5 years.....	552

Profile in 1970

Total population.....	6,289
Population under age 18.....	24.0%
Median family income.....	$ 10,265
Population 0-5 years.....	370

Profile in 1974

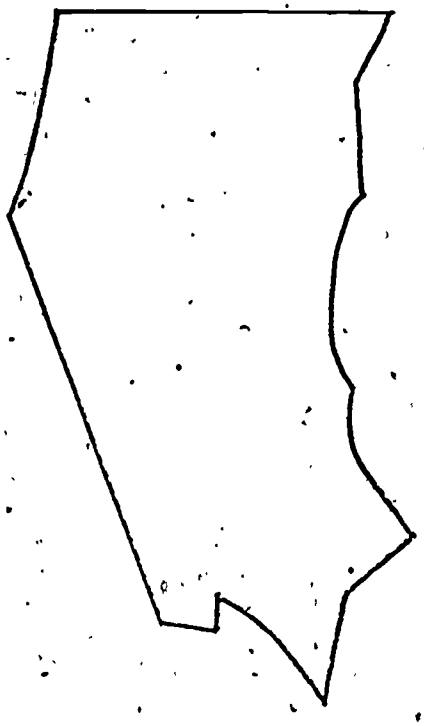
Total population.....	5,825
Population under age 18.....	21.0%
Median family income.....	$ 11,600
Population 0-5 years.....	275

Profile in 1980

Total population.....	5,462
Population under age 18.....	12.6%
Median family income.....	$ -
Population 0-5 years.....	223

This school served an area with a moderate degree of residential isolation, with major streets and arterials bounding the area on two sides, and a moderate-size business district surrounding the school. The main housing stock was single-family residence with a predominance of two-bedroom homes. However, there was much competition in the area for conversion to multiplex-type housing.

SCHOOL B (Closure)



School B
Boundaries at the time of decision (1971)

Enrollment: 160

Profile in 1960

Total population.....	3,813
Population under age 18.....	28.0%
Median family income.....	$ 5,808
Population 0-5 years.....	375

Profile in 1970

Total population.....	2,100
Population under age 18.....	24.0%
Median family income.....	$ 7,864
Population 0-5 years.....	179

Profile in 1974

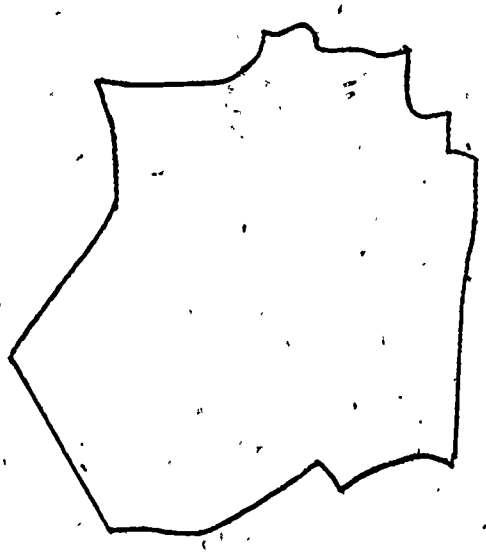
Total population.....	1,630
Population under age 18.....	19.0%
Median family income.....	$ 10,370
Population 0-5 years.....	205

Profile in 1980

Total population.....	1,341
Population under age 18.....	17.9%
Median family income.....	$ -
Population 0-5 years.....	73

School B represents a rather genotypic school in an area with rapidly deteriorating housing stock--mainly single-family, non-owner occupied--simply waiting to be demolished by the spread of a rather large industrial and commercial area. The area's residential sections are highly isolated from other types of housing. The area is geographically bounded on all sides by either major arterials or business and commercial interests.

SCHOOL C (Closure)



School C
Boundaries at the time of decision (1971)

Enrollment: 201

Profile in 1960

Total population.....	23,750
Population under age 18.....	5.6%
Median family income.....	$ 5,375
Population 0-5 years.....	537

Profile in 1970

Total population.....	17,250
Population under age 18.....	3.3%
Median family income.....	$ 7,640
Population 0-5 years.....	245

Profile in 1974

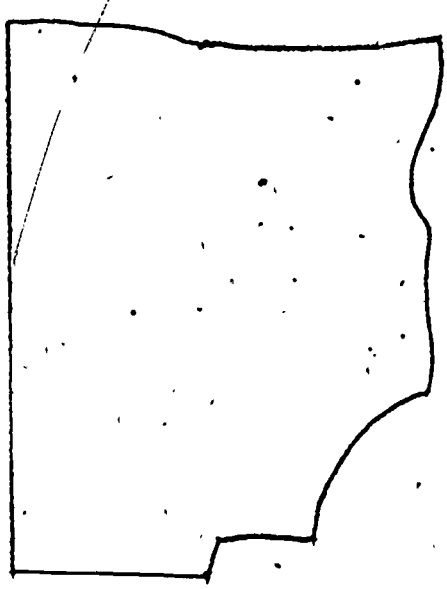
Total population.....	15,255
Population under age 18.....	2.0%
Median family income.....	$ 9,760
Population 0-5 years.....	130

Profile in 1980

Total population.....	17,272
Population under age 18.....	5.1%
Median family income.....	$ -
Population 0-5 years.....	380

School C represents an area in rapid transition, next to the major downtown business district in a medium size urban area. There is strong land-use competition between retail business and service, and multiple housing structures. The housing stock in the area is large, formerly palatial houses, many of which have been converted into apartment houses. It is a large, historical area that is intersected by major arterials and scattered smaller business districts in proximity to the downtown business area. Some of its housing area was lost to a freeway through the area. The wood-frame building was built just after the turn of the century, and was sold to a private developer several years after closure.

SCHOOL D (Shared Use)



School D
Boundaries at the time of decision (1974)

Enrollment: 146

Profile in 1960

Total population.....	5,019
Population under age 18.....	19.8%
Median family income.....	$ 6,896
Population 0-5 years.....	310

Profile in 1970

Total population.....	5,725
Population under age 18.....	12.5%
Median family income.....	9,078
Population 0-5 years.....	234

Profile in 1974

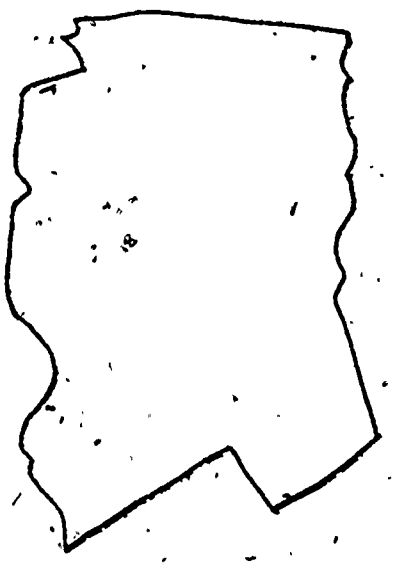
Total population.....	4,149
Population under age 18.....	16.0%
Median family income.....	$ 14,423
Population 0-5 years.....	146

Profile in 1980

Total population.....	5,668
Population under age 18.....	12.9%
Median family income.....	$ -
Population 0-5 years.....	136

School D represents the type of school serving a neighborhood in the central city adjacent to a large, concencentrated, major business district, rather than scattered small retail and service businesses. It is bounded on all sides by major freeways, arterials, a business district, and a large park. Its housing stock is of two types--about half is smaller, two-bedroom, single-family homes; the other half is large homes, many of which have been converted to rooming houses. There is much demand for single-room type housing because it is near a large university. The building is a wooden frame structure built just after the turn of the century.

SCHOOL E (Consolidation)



School E
Boundaries at the time of decision (1967).

Enrollment: 120

Profile in 1960

Total population.....	18,646
Population under age 18.....	10.6%
Median family income.....	$ 5,086
Population 0-5 years.....	641

Profile in 1970

Total population.....	17,591
Population under age 18.....	1.8%
Median family income.....	$ 5,836
Population 0-5 years.....	88

Profile in 1974

Total population.....	17,549
Population under age 18.....	3.0%
Median family income.....	$ 9,070
Population 0-5 years.....	54

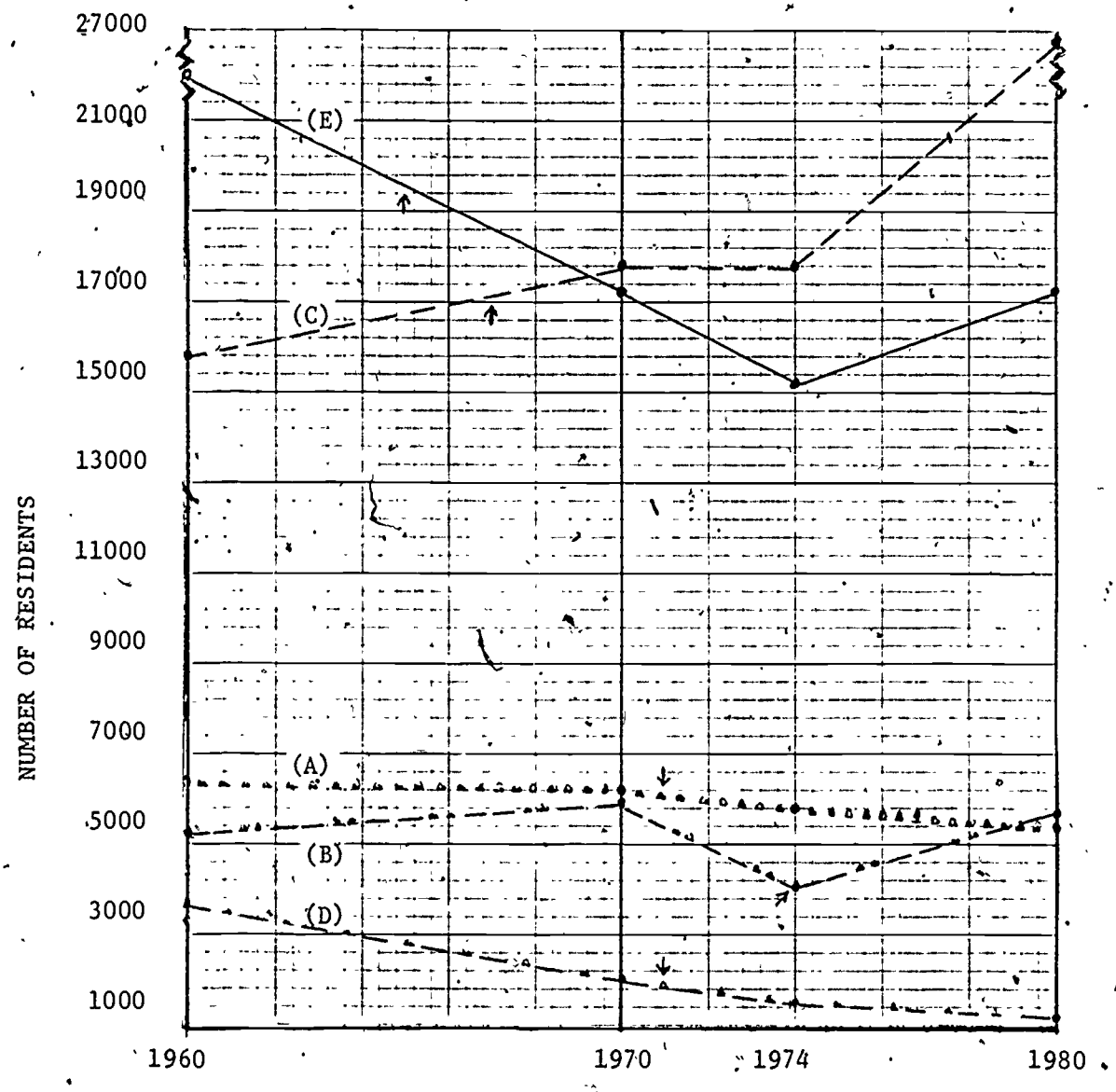
Profile in 1980

Total population.....	26,156
Population under age 18.....	3.5%
Median family income.....	$
Population 0-5 years.....	234

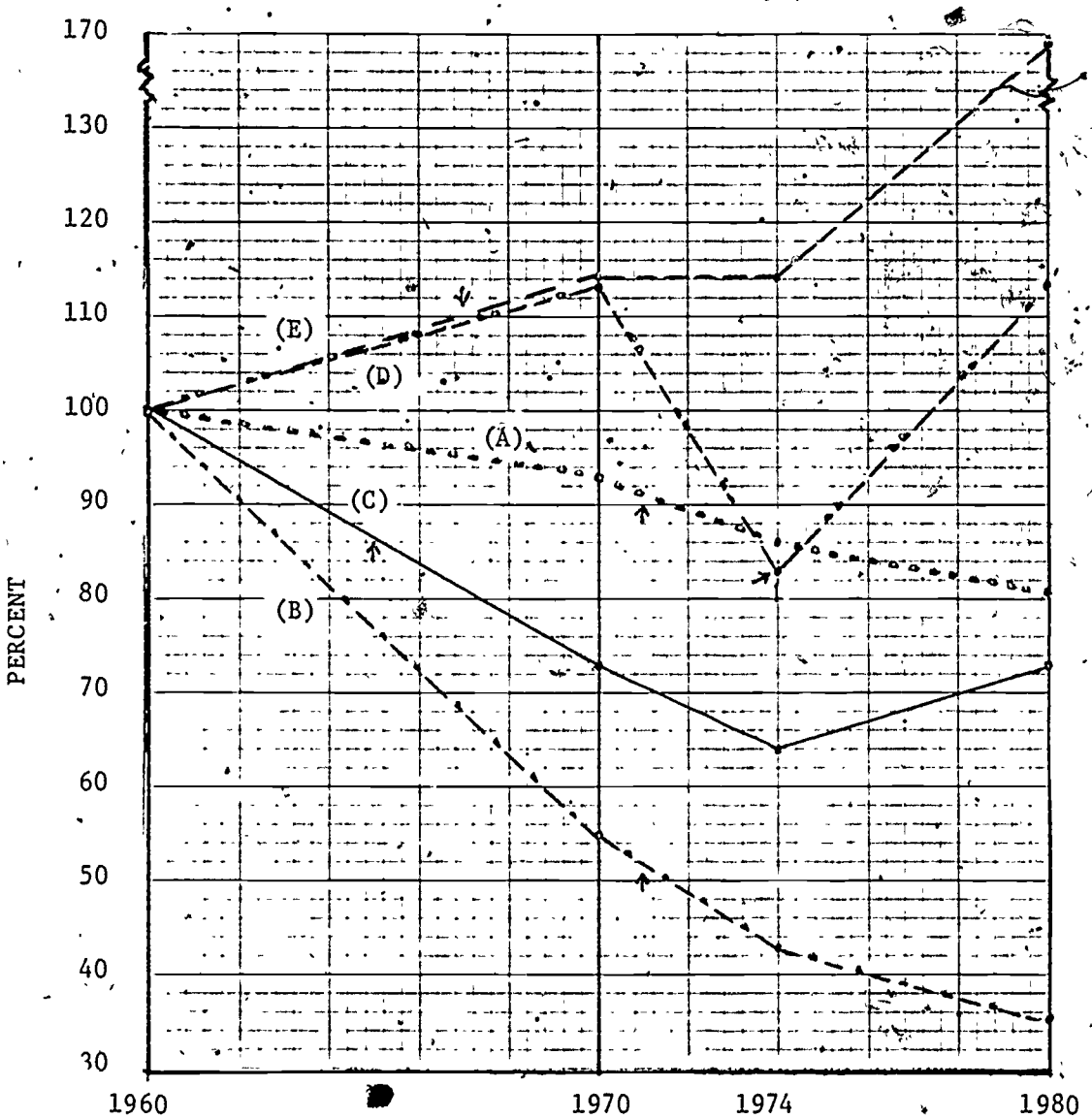
School E represents a school serving a neighborhod that was being squeezed from two sides by the expansion of a large university and the downtown business district. The area was bounded on all four sides and, for all practical purposes, completely geographically isolated by a business district, the university, and natural barriers on the other two sides. The housing stock in the area tended to be of a single type--large picturesque homes, many of which had been converted to rooming houses to serve the neighboring university student population. There was much competition for property sites from the university, the downtown businesses, and developers. The area was in rapid transition away from single-family dwellings.

In addition to the data presented in the brief descriptions of each of the study sites, additional data were collected from 1960, 1970, and 1980, and from the 1974 Polk Profiles on the following variables: (a) number of residential units in the area served, (b) mobility of the population, (c) owner occupancy, (d) families as a per cent of households, (e) number and per cent of population under 18 years of age, and (f) elementary school population, ages 6-12. The data on all variables are presented in Figures 1 through 11 on the pages that follow.

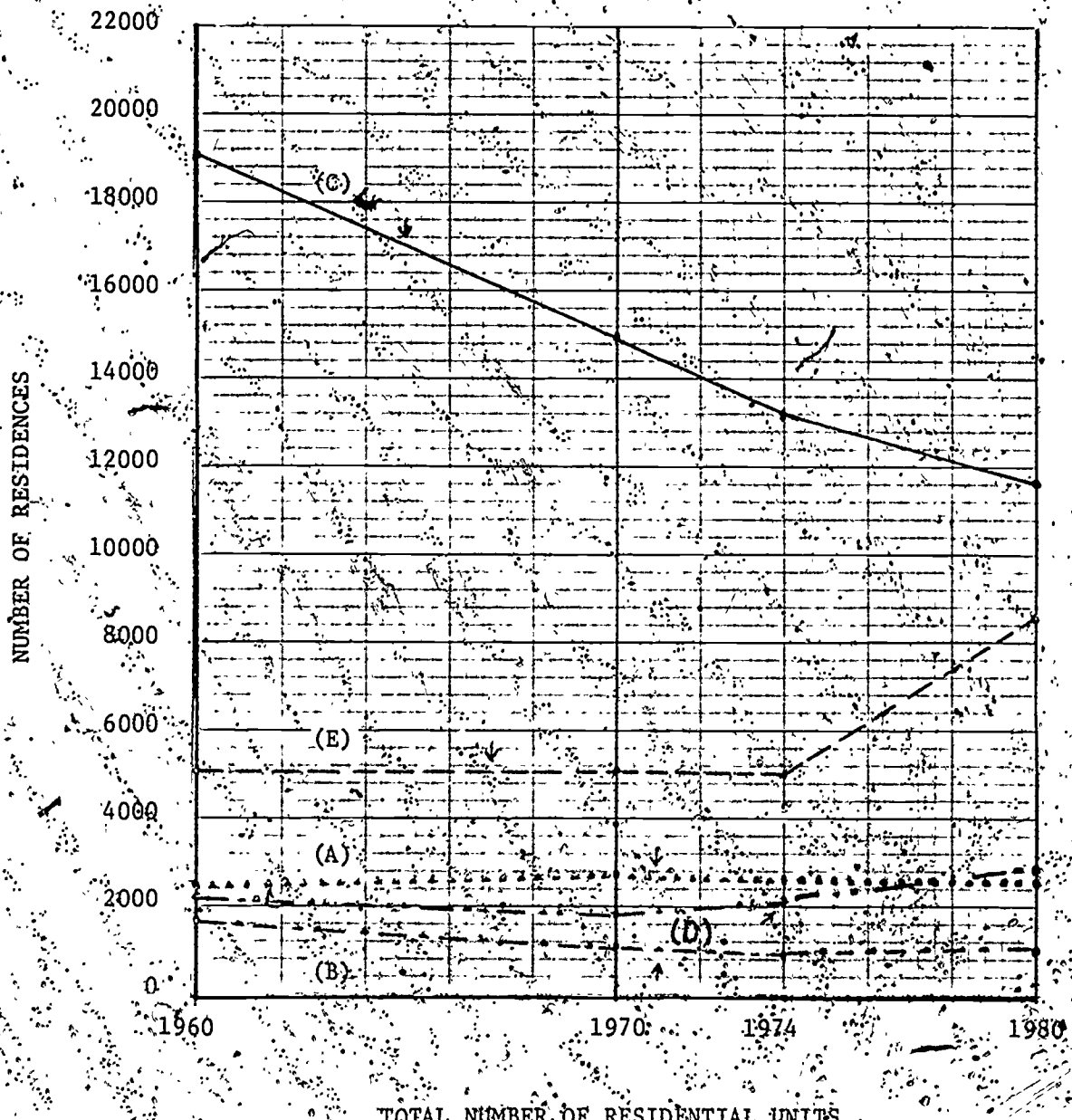
In order to provide some meaning to the data presented in Figures 1 through 11, values (based upon the direction and rate of change from year to year in the variable) were assigned to each variable for each school. The slope of any variable that was resulting in a change of 1 per cent or more per year in a negative direction was considered to be an undesirable condition or trend, thus producing conditions that were less "viable" (viz., fewer and/or lower percentages of children in the population, higher mobility, fewer owner-occupied residences, and fewer families). The slope of any variable that resulted in a change in positive direction was considered to be increasing the viability of the area and was assigned a positive value (+). Data for a given variable that was exhibiting a "flat" profile--less than one per cent per year--was assigned a neutral value of (o). The results of the application of these decision rules are presented in Table 2.

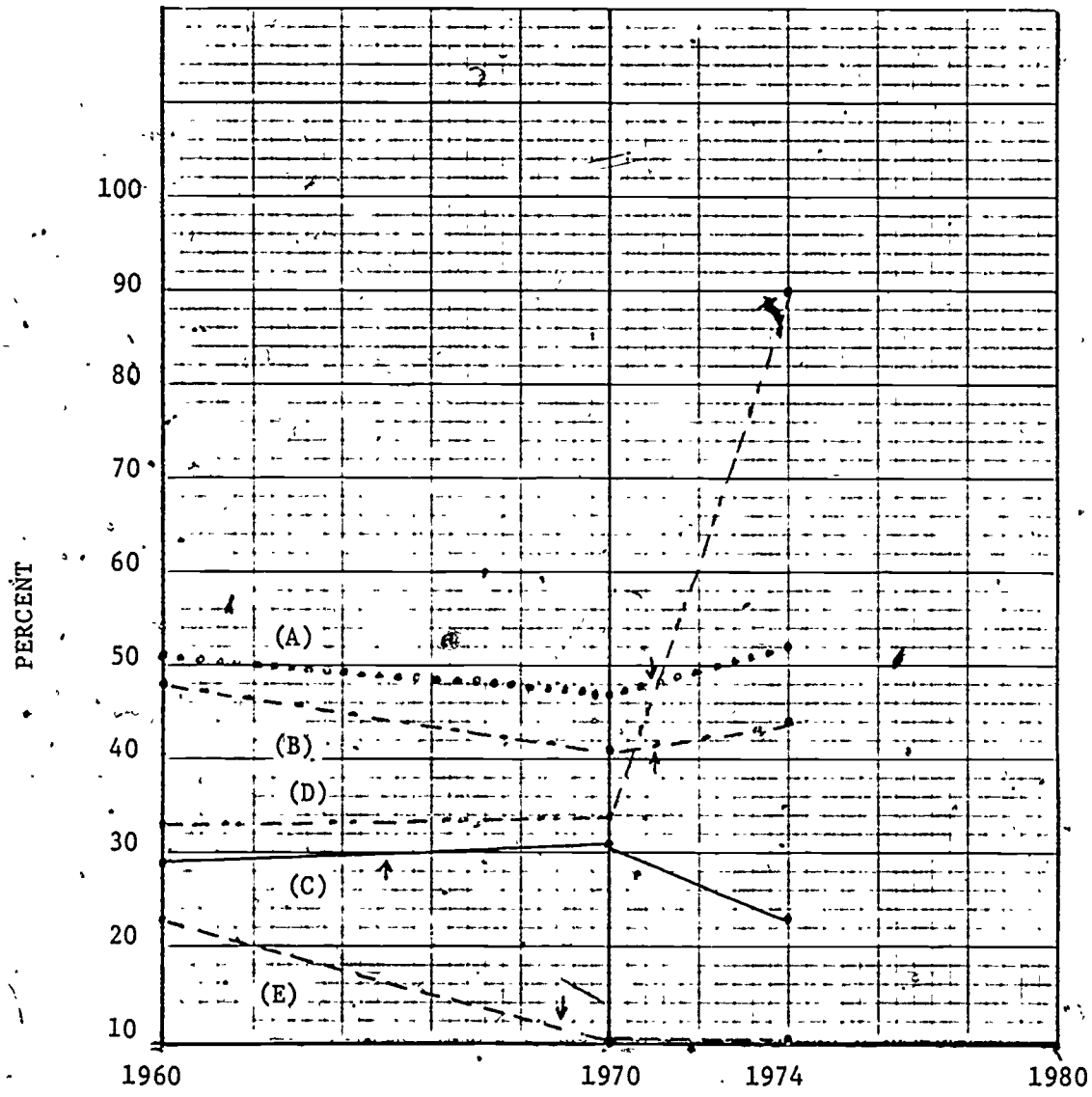


TOTAL POPULATION FOR EACH SCHOOL SITE 1960-80

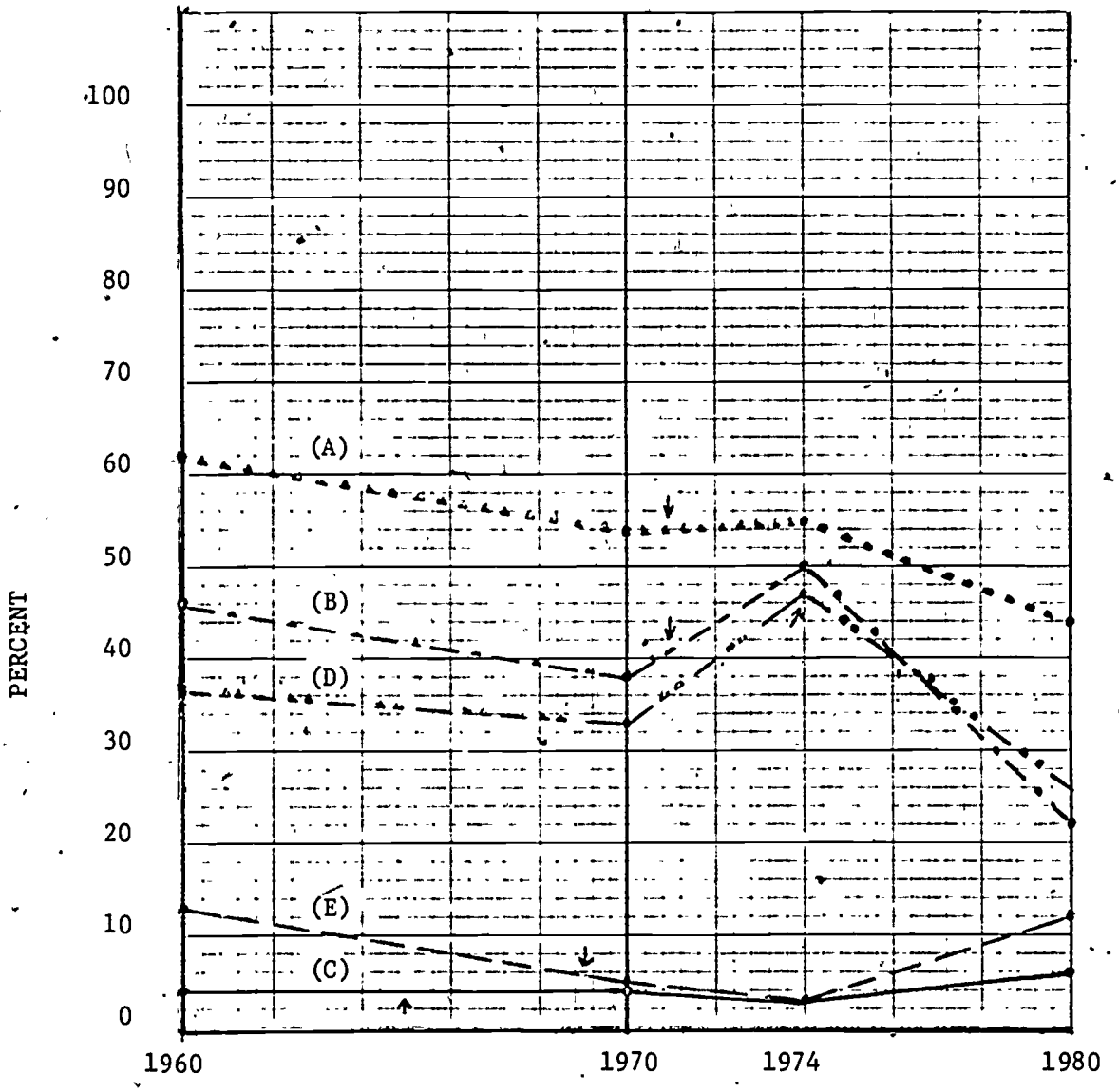


TOTAL POPULATION 1970, 1974 AND 1980 AS A PERCENT OF TOTAL POPULATION 1960

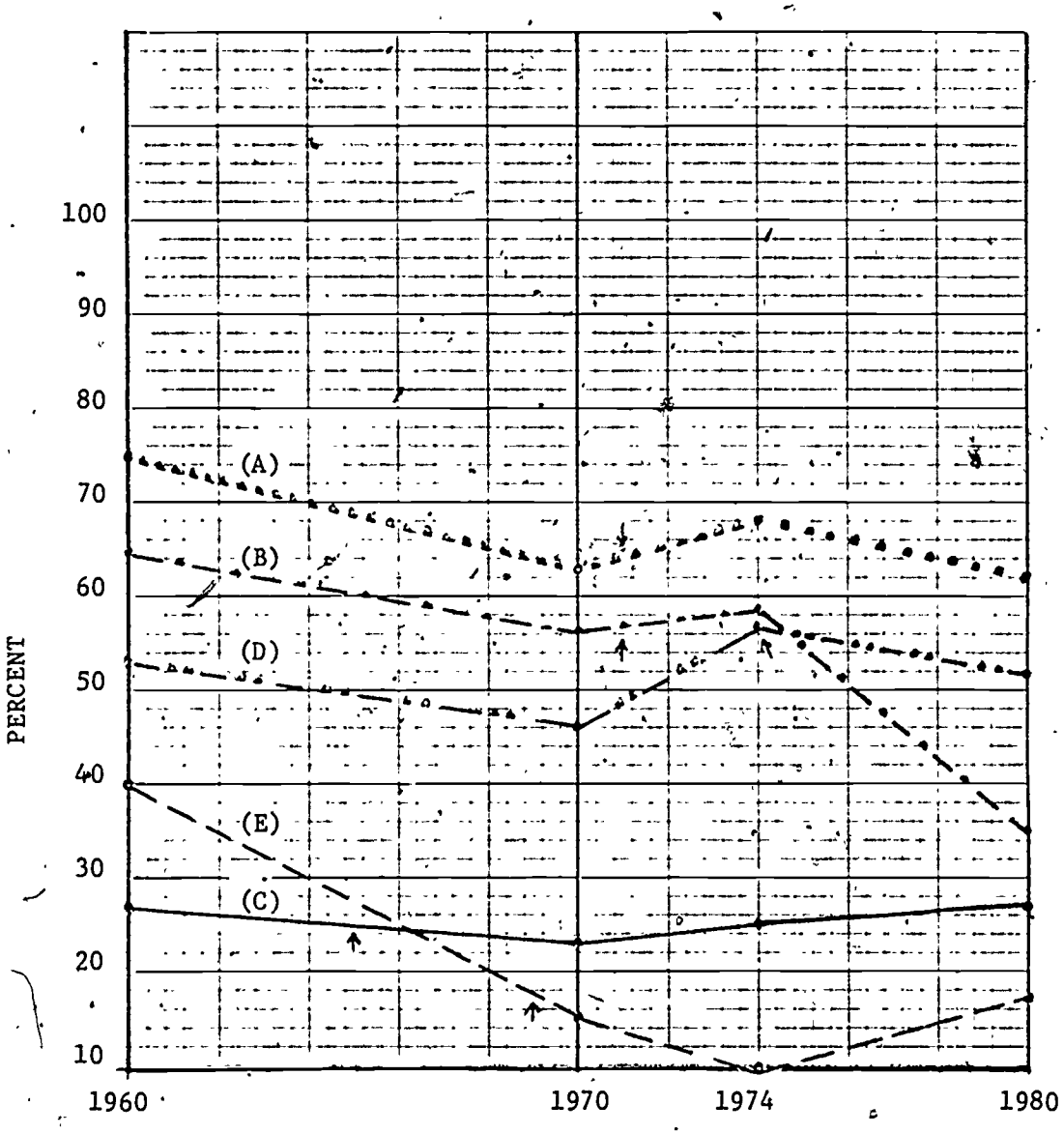

22000
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
NUMBER OF RESIDENCES
(C)
(E)
(A)
(B)
(D)
1960
1970
1974
1980
TOTAL NUMBER OF RESIDENTIAL UNITS



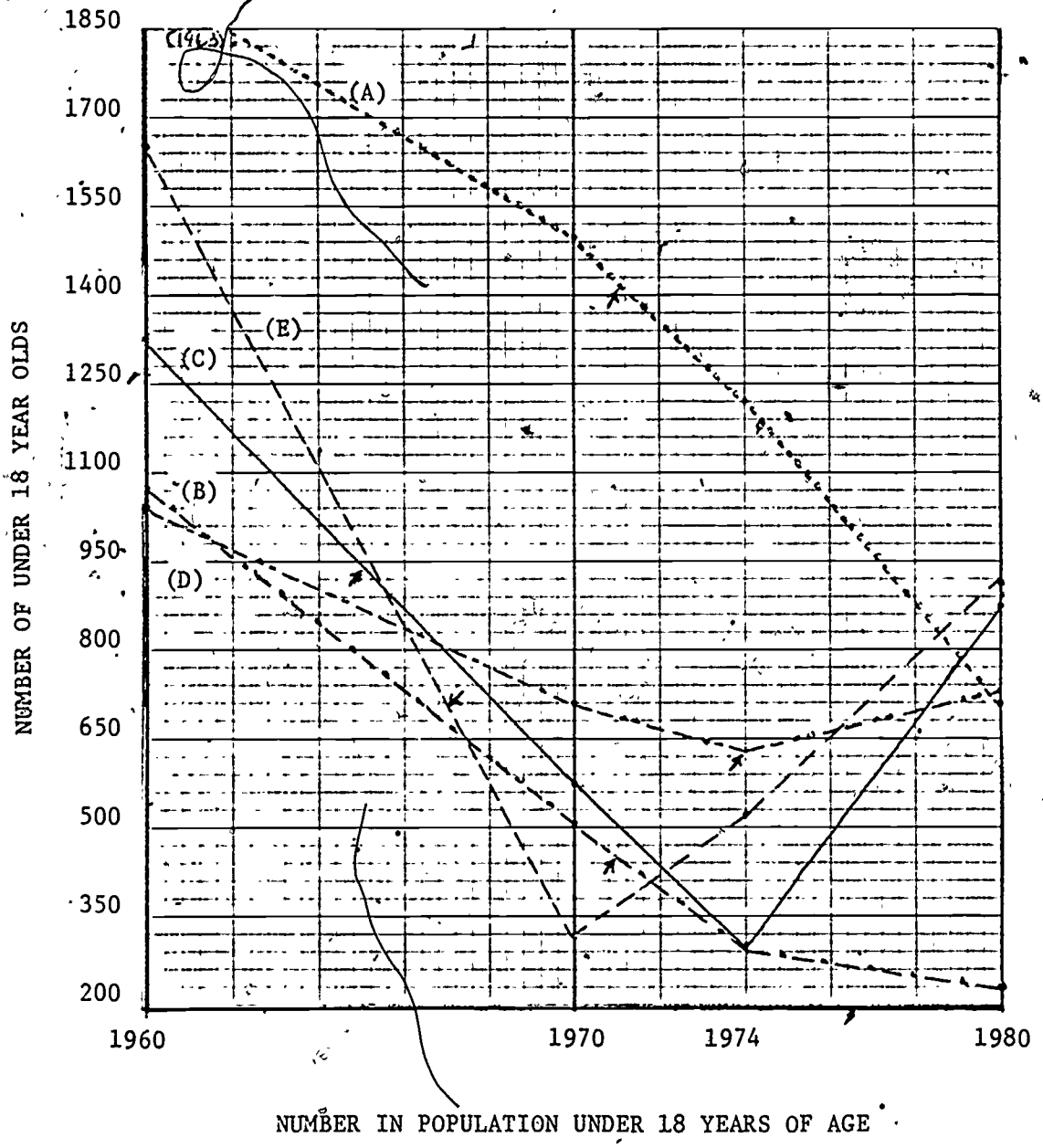
PERCENT RESIDING IN THE SAME RESIDENCE

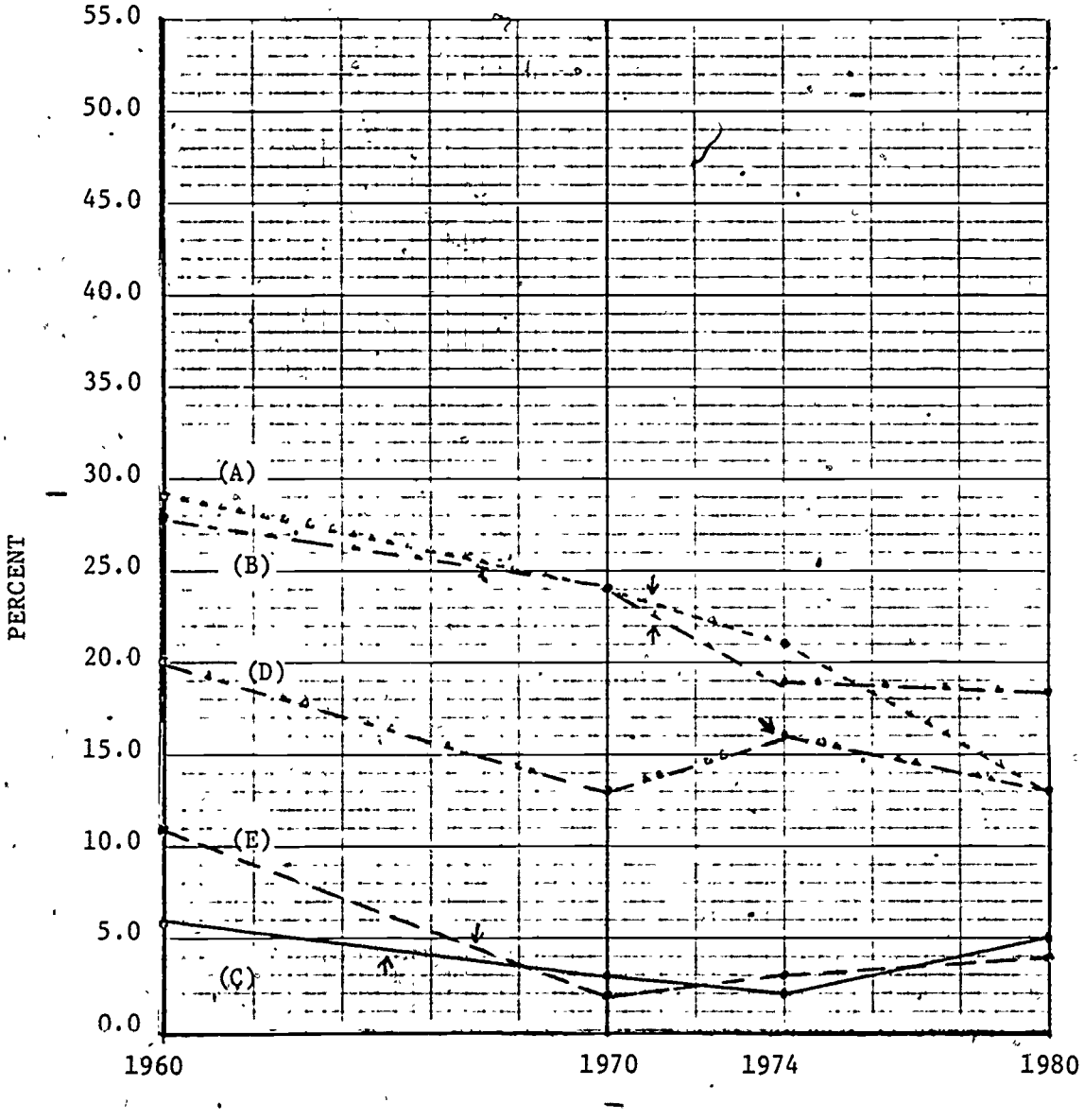


PERCENT OF OWNER OCCUPIED RESIDENCES

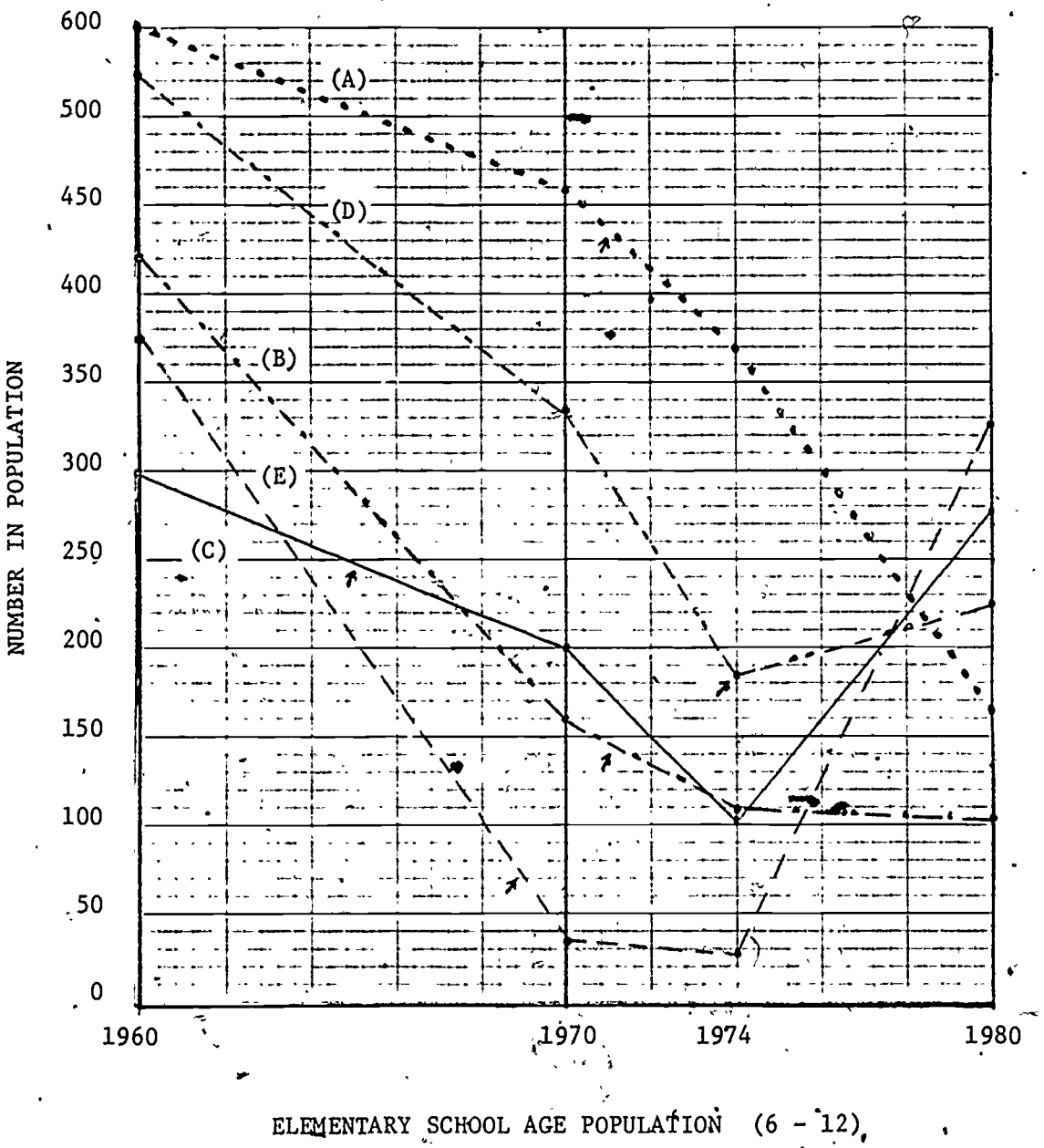


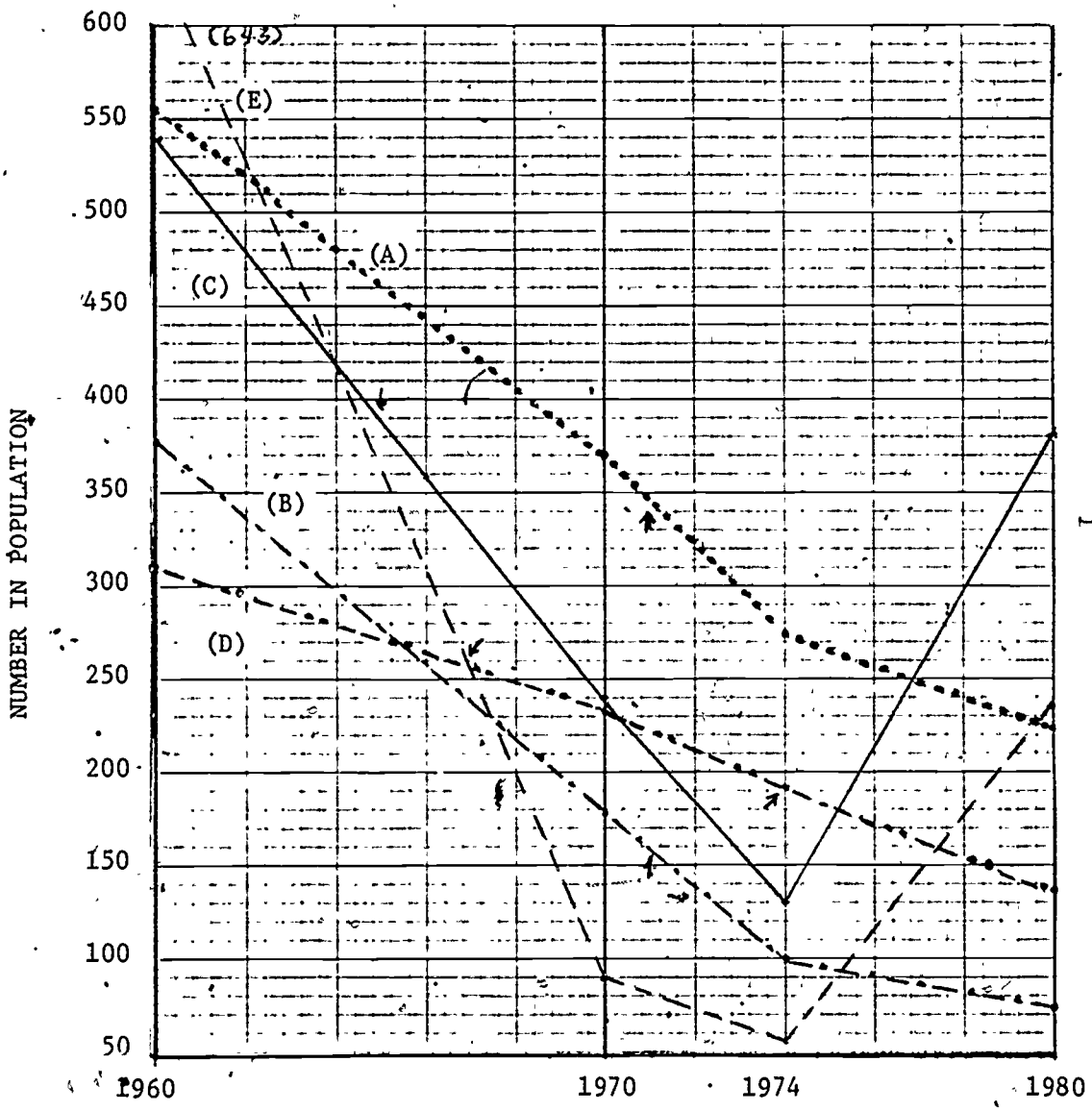
FAMILES AS A PERCENT OF TOTAL HOUSEHOLDS

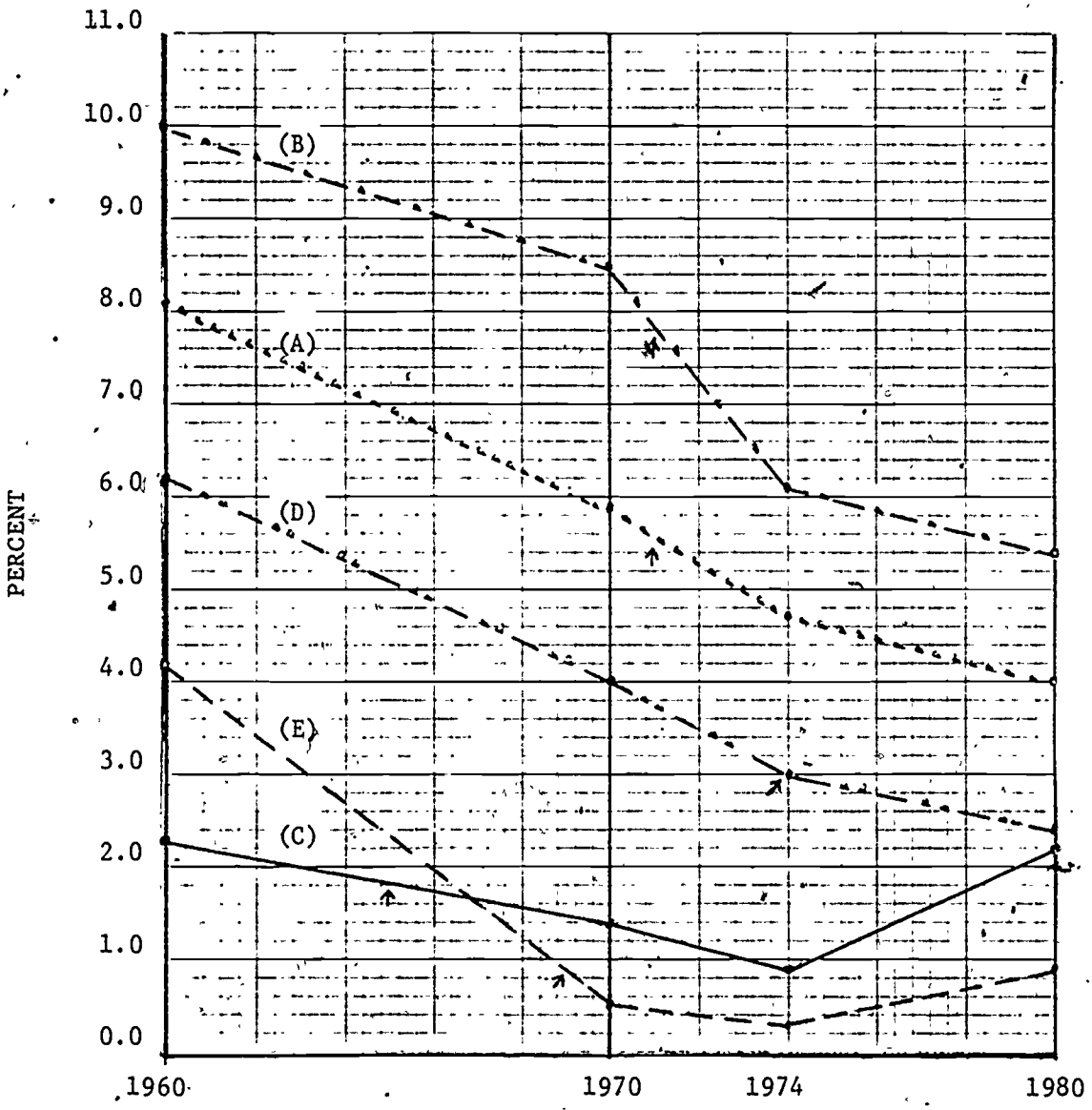

1850
1700
1550
1400
1250
1100
950
800
650
500
350
200
1960
1970
1974
1980
(1965)
(A)
(E)
(C)
(B)
(D)
NUMBER OF UNDER 18 YEAR OLDS
NUMBER IN POPULATION UNDER 18 YEARS OF AGE



PERCENT OF TOTAL POPULATION UNDER 18 YEARS OF AGE


600
500
450
400
350
300
250
200
150
100
50
0
NUMBER IN POPULATION
(A)
(D)
(B)
(E)
(C)
1960
1970
1974
1980
ELEMENTARY SCHOOL AGE POPULATION (6 - 12)


600
550
500
450
400
350
300
250
200
150
100
50
(643)
(E)
(A)
(C)
(B)
(D)
NUMBER IN POPULATION
1960
1970
1974
1980
NUMBER IN POPULATION UNDER 5 YEARS OF AGE



PERCENT OF TOTAL POPULATION UNDER 5 YEARS OF AGE.

As can be seen in Table 2, School A, which was closed in 1971, exhibited a general demographic negative direction. Five of the eleven variables were in a negative direction; the remaining six were neutral. Five of these variables were tending in a negative direction and only one variable was in a positive direction (% in same residence). The relationship between the closure decision and the demographic variables was neutral for five of the six variables identified as neutral before the decision; one variable (families as a % of householders) was positive and four were negative. Both before closure and at closure time, the negative relationships were those variables associated with total population characteristics, elementary-school-age children, and children under five years of age. The 1980 census data, however, suggest that initial impact upon the 0-5 age group was not long term, but that the initial impact on total population and elementary-school-age population continued to show negative relationships.

School B, which was closed in 1971, exhibited a general demographic negative profile similar to that of School A prior to closure, but more intense. Eight of the variables showed a negative trend; no variables showed a positive trend; the three remaining variables were neutral. Examination of the variables shortly after the closure decision, using the Polk Profiles of 1974, suggests that the closure decision had a neutral relationship to all demographic variables, except two per cent of population under 18 and those under five years of age.

On the other hand, the 1980 census data suggest that the long-term effects on the area showed a positive trend in none of the study variables, but the area experienced increased negative trends in three variables (total population, population as a per cent of 1960, and children under the age of 18). It should be noted that while total population decreased at an escalating rate, owner occupancy increased in relative representation in the area population. Since the group decreased in actual numbers during this period of time, one can only assume that the reduction in overall population was greater among renters than among those who owned their homes. Thus, it cannot be assumed that growth was occurring in this variable, but rather that its representation in the population was becoming more favorable.

School C exhibited a profile quite similar to School A and B before the closure decision. Six variables showed negative trends, the most crucial of which were the reduction in number of residential units, school-age children, and children under five years of age. The policy alternative chosen for this school was closure. The decision appears to have had little general impact on the area, but rather had a neutral relationship to the demographic variables (ten variables were neutral and the other showed a negative relationship). The variable that showed a negative relationship was total population. However, it should be noted that all variables continued in a negative direction.

TABLE 2

SCHOOLS, ACTION TAKEN AND DATE OF INTERVENTION	SCHOOL A (Action: Closure) 1971			SCHOOL B (Action: Closure) 1971			SCHOOL C (Action: Closure) 1965			SCHOOL D (Action: Shared Use) 1974			SCHOOL E (Action: Consolidation) 1967		
DIRECTION AND OBSERVATION TIMES OF DEMOGRAPHIC VARIABLES	BEFORE[a]	ACTION[b]	AFTER[c]	BEFORE	ACTION	AFTER	BEFORE	ACTION	AFTER	BEFORE	ACTION	AFTER	BEFORE	ACTION	AFTER
LIST OF VARIABLES															
1. Total Population	o	o	o	-	o	-	+	-	+	-	o	+	-	o	+
2. Population as a % of 1960	o	-	-	-	o	+	-	o	+	-	+	+	+	-	+
3. # of Residential Units	o	o	o	-	o	o	-	o	o	o	o	o	o	o	+
4. % in Same Residence	o	o	+	o	o	o	o	o	-	+	?	?	-	o	o
5. % Owner Occupied	o	o	-	-	o	o	o	o	o	+	-	-	-	o	+
6. Families as a % of Householders	-	+	o	o	o	-	o	o	o	+	o	o	-	o	+
7. N under 18 Years of Age	-	o	-	-	o	-	-	o	+	-	+	+	-	o	+
8. % of population under 18 Years	o	o	-	o	-	o	o	o	+	o	o	o	-	o	o
9. Elementary School Age Population	-	-	-	-	o	o	-	o	+	-	+	+	-	o	+
10. N under 5 years of Age	-	-	o	-	o	o	-	o	+	-	o	o	-	o	+
11. % of Population under 5 Years of Age	-	-	o	-	-	o	-	o	+	-	+	o	-	o	+
12. Source of Alternative land uses	Retail Bus Res. Multiplex			Ind/Comm. Wholesale			Retail Bus. Service Multiplex			Retail Bus. Service Multiplex			Retail Bus. Service Multiplex		

[a]BEFORE - The period of time from 1960 to the date of action; [b]ACTION - period of time within a year either side of the decision; [c]AFTER - Period of time from the action to 1980.

The profile of School C, while quite similar to Schools A and B for both before and action, is quite different from School A or B after the closure decision. The 1974 Polk Profiles and the 1980 census data suggest that this area now exhibits a very positive demographic profile in relation to seven demographic variables. In fact, it appears to be experiencing a rebirth. Among those with positive changes are both total population and the representation of both school-age and pre-school children residing in the area. The only negative variable was per cent of population in the same residence. Given the rebirth in families and younger population, one would expect to find the higher mobility rate at the last observation time.

School D is located in a residential area where the policy chosen was program enhancement through shared use of a compatible program housed in the building. This choice was made in 1974. In the period of time before the decision, the area was exhibiting negative trends in six variables, positive trends in three variables, and a neutral profile in the other two variables. In spite of the fact that it had a negative trend in only six variables, all of these were related to total population and representation of younger children in the population. The positive trends observed were a decrease in mobility, increase in owner occupancy, and an increase in the number of families in the area. This decision was only made in 1974; thus, we have but one data point for analysis--namely, the 1980 census data. These data suggest that the program enhancement was positively related to an increase in the number of elementary-school-age children, number of school-age-children in general, and total population. Data from the post-enhancement period suggest that the gains achieved during the period of intervention were sustained. Positive relationshps were found for school-age children and both general population measures. A negative trend was observed for owner occupied. However; the initial gains in the under-five age group seemed to level in the years after the initial intervention.

School E displayed the most negative profile of all the schools in 1960. Nine of the variables of interest met the decision rule test of a negative impact. The only variable showing a positive trend was the population growth when considered against the 1960 base. There was one neutral variable--the number of residential units.

The relationship between the contraction policy decision, consolidation, and the variables of interest was, for all practical purposes, neutral. Some ten variables fit neither the negative nor positive decision rule and thus were considered to have no relationship to the decision. The remaining variable, population as a percentage of 1960, met the negative decision rule. However, the profile of the area in 1980, appears to resemble a rebirth similar to that observed in School C. Of the eleven demographic variables, nine met the decision rule for the positive impact; the other two--per cent in the same residence and per cent under 18--were neutral. The area appears to be rapidly increasing in general population, spawned by an expanding number of residential units. In addition, it is

increasing in the number of families, owner-occupied residences, and households with pre-school and school-age children. For example, the area contained only 229 school-age chidren and 88 pre-school children in 1970; in 1980 the area contained 688 school-age and 234 pre-school children--an increase of 300 per cent and 267 per cent, respectively. From a demographic point-of-view, this area appears to be rapidly returning to an area of high viability.

Summary and Conclusions

The data gathered in this study suggest that there is a relationship between the contraction policy choice and the impact upon neighborhoods where there are a myriad of converging forces and competing uses for scarce resources.

The conclusions from our earlier and the Eisman study were that there are powerful environmental forces at work in these neighborhoods which, in the main, were experiencing a moderate to high degree of negative demographic trends. These trends were: (a) a shrinking general population base, (b) decreases in both school-age and pre-school populations, (c) stable to negative trends in numbers of housing units, and (d) increasingly less-stable populations with higher mobility rates, lower levels of owner occupancy, and less representation of families in the general populations.

The use of school closure as the policy choice was by and large neutral with respect to most variables. When there were immediate impacts they tended to be negative and related to reductions in elementary school-age and pre-school age children. Out of 33 possible cases, only one positive trend was found, which was an increase in per cent of families as homeowners.

When comparing closure sites on the long-term relationship between the variables and the closure policy, the impacts were directly related to the study sites. Two sites showed considerable continuing long-term negative trends in relation to total general population, and numbers and per cent of school-age children. On the other hand, the third site showed just the opposite--a dramatic upward trend in general population, number and per cent of school-age population, and number and per cent of pre-school-age children. That the changes in this area were of such magnitude fifteen years after closure, suggests a considerable population rebirth in the area. The turning point from the negative to a positive trend was between seven and nine years after the closure. The two sites still experiencing the negative trend have just entered the lower threshhold of these years. The ability of the one site to make such a transformation is somewhat hampered by the fact that the competition for land resources is between manu-

facuring and wholesale business/commercial, rather than between retail/service and multiplex-residential, as was the case with the rebirth site.

The site where shared-use was used as an intervention strategy also demonstrated a general negative trend in the demographic variables, particularly in terms of general population and school-age and pre-school children. Where it was possible to assess the relationshop between the intervention and the demographic variables, the relationship tended to be balanced between neutral and positive trends. Positive trends tended to be associated with increases in general population and school-age population, but neutral with respect to pre-school children. Longer term relationships tended to be consistent with the observed short-term positive and/or neutral impacts.

The use of consolidation at the fifth site in response to a highly negative profile on nearly all demographic variables, was as neutral in impact as the preceding non-intervention had been negative. Thus, it seems fair to conclude that consolidation neither disrupted the trend in the variables nor exacerbated the pre-existing condition. However, when viewed in the context of long-term impact on the demographic variables, quite the opposite was the case. Of the eleven variables, nine were found to have changed to positive trends; all population variables displayed positive trends to the extent that the area appears to be experiencing a population rebirth. To conclude that the consolidation was directly causal to the rebirth, however, would be misguiding. All evidence suggests that the consolidation showed little, if any, relationship to changes already in progress. If anything, the intervention allowed the area and its previous viability to die a peaceful death so that the next generation of housing could provide the vehicle for rebirth.

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