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ABSTRACT

This report discloses that, since the passage of Public Law 874 in 1950, about 2,000 districts or 20 percent of all districts receiving entitlement under the law in 1952-64 experienced some federal installation phaseouts. The study indicates that only in a small percentage of these districts were the effects of the phaseout sufficient to cause financial problems. Furthermore, most of these districts experienced only slight problems of short duration. The report notes that, in a study of those 45 districts most affected by phaseouts, few had severe financial problems. The report also examines proposed legislation dealing with the phaseout problem in school districts. A related document is EA 004 834. (JF)

STANFORD RESEARCH INSTITUTE
MENLO PARK, CALIFORNIA

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EFFECTS OF FEDERAL INSTALLATION PHASE-OUTS UPON SCHOOL DISTRICTS

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SRI Project IC-5611

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Effects of Federal Installation Phase-Outs upon School Districts

Project No. IU-5611
Stanford Research Institute
Menlo Park, California

p. 8, par. 1, lines 9 and 10

"revenue problems tend to arise with a decline in ADA, whereas expenditure problems tend to arise if ADA does not decline."

should read

"expenditure problems tend to arise with a decline in ADA, whereas revenue problems tend to arise if ADA does not decline."

PREFACE

This study was conducted by Stanford Research Institute's Economic Development Group under contract with the U.S. Office of Education. Phillip L. Adams was project leader and principal investigator; and Dr. Robert G. Spiegelman was project manager. The project was materially assisted by Paul Slawson. Joanna Paxson and Nancy Borgeson were research assistants; the latter was responsible for analyses of state aid financial programs. David A. Curry of the Management and Social Systems Area is author of Appendix C, a case study of Salina, Kansas.

During the field work phase of the study, data were gathered directly from about 40 school districts throughout the United States. The field studies were conducted by Phillip Adams, Paul Slawson, and Dr. Alan Lazar of the Institute staff, plus four consultants: William Paul O'Day of Salem, Oregon; and James Guthrie, James Kelly, and Conrad Potter, all of the School of Education at Stanford University.

The Institute is grateful to the many persons who furnished assistance during the study. These individuals include many school district superintendents and the personnel of SAFA (School Assistance for Federally Affected Areas), U.S. Office of Education.

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I INTRODUCTION

Federal Installation Phase-Outs

Since the early 1950s, more than 1,000 federal installations have been "phased out"--closed down, reduced in force, or consolidated. Although most of these installations were military, there were also nonmilitary ones, such as VA hospitals, federal prisons, and AEC facilities. As a result of the phase-out of military installations from 1961 to July 1964 alone, 32,921 civilian and 52,913 military positions were eliminated.* Schools were directly affected through the resulting changes in the status and location of children.

In November 1964, the Department of Defense announced new phase-outs, scheduled over varying periods up to 10 years, of some 80 relatively large domestic installations. It is estimated that 34,900 and 28,500 civilian jobs will be eliminated.† Considerable attention has been drawn to these phase-outs because of their magnitude and the significant general economic effect they might have. The phase-outs announced in November 1964 are not likely to be the last ones, military and nonmilitary, that will occur in the next several years.

Community and School District Impact and PL 874 and 815

Communities are affected by the presence of federal installations and therefore by changes in the level of activity at these installations. Churches, schools, highways, utilities, recreation centers, and other facilities are built and staffed, to serve employees of such federal installations and their families. Although a reduction in federal activity may create many problems for local governments and private citizens, only education receives specific reimbursement from the federal government for financial burdens imposed by the presence of federal installations. PL 874 and 815 are the laws under which the federal government recognizes an obligation to relieve cost burdens imposed on school districts by federal activity.‡

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* Memorandum for the President from the Secretary of Defense, Washington, D.C., October 8, 1964.

† Memorandum for the Select Advisory Committee to the Secretary of Defense from the Office of the Assistant Secretary of Defense, Washington 25, D.C., December 7, 1964.

‡ See SRI, Entitlements for Federally Affected School Districts Under PL 874 and 815, Vols. 1 & 2, Menlo Park, California, 1965.

The existing PL 874 legislation contains two provisions to compensate school districts for problems resulting from phasing out federal installations: (1) a district in which federally connected enrollment falls below the threshold required for eligibility (usually 3 percent of total ADA) may stay in the program for an additional two years; and (2) a district which incurs expenses for a certain number of federally connected pupils, and cannot reasonably reduce these expenses commensurate with a sudden substantial reduction in this number, may be given additional compensation by the Commissioner of Education.

Need for and Objectives of the Present Study

Federal installation phase-outs can have a number of adverse impacts upon school districts. These are discussed in detail in the report; examples are: (1) negative effects on local economic activity, causing a significant shrinking of the tax base, and (2) transfer of employees who leave their families behind, requiring the affected district to educate the children without the assistance of federal payments under PL 874.

Because of these adverse impacts, there may be a rationale for assistance to school districts affected by federal installation phase-outs. The first objective of the present study is to determine the extent to which such phase-outs have created financial problems for school districts. A second objective is to evaluate existing and proposed federal legislation dealing with transitional aid for schools affected by phase-outs, and to suggest the general guidelines that such legislation should include. The proposed legislation evaluated in this study was submitted to Stanford Research Institute by the U.S. Office of Education.

The analysis is based primarily upon quantitative data on student attendance and finances, obtained from the U.S. Office of Education for about 1,000 affected school districts, and additional data obtained for about 80 of these school districts by phone, mail, and personal visits.

II CONCLUSIONS AND RECOMMENDATIONS

The Question of Federal Responsibility for Phase-Out Effects

The significant reduction in force from the phase-out of a federal installation can create many problems for a community. Only those problems that affect public education are considered relevant to this study; other problems, such as unemployment, are considered only to the extent that they affect a school district's ability to finance education.

A previous study of PL 874 by the Institute has shown that where the federal government has an installation on tax exempt lands, it has an obligation to pay school districts for the education of pupils who reside, or whose parent works, on these lands.* But when such installations are phased out, no similar clear-cut obligation can be demonstrated for payment to districts experiencing phase-out. Two extreme views are (1) the government has no responsibility whatever for the phase-out effects on the community, and (2) the government is obligated in perpetuity to support a pre-phase-out level of education per pupil. A reasonable compromise to these conflicting views is that the federal government should make payments for a transitional period to assist the school district in moving from one level of revenue and expenditure to another, or to provide relief for temporary losses in revenue. It is also equally reasonable that the federal government should assume only a portion of the transitional costs, and that state and local agencies will share in these costs.

Effect of Past Phase-Outs on School Districts

Since the passage of PL 874 in 1950, about 2,000 school districts, or 20 percent of all districts receiving entitlement under the law in the period 1952-64, have experienced some federal installation phase-out (including both complete closings and significant reductions in force). Our study shows that in only a small percent of these districts could the effects of the phase-out have been sufficient to create financial problems. In a stratified random sample of 722 of these districts, 56 percent experienced net entitlement declines that were less than 6 percent of total current expenses of education (TCE)--about one year's normal increase in pupil expenditures. In about 60 percent of the districts experiencing some decline in total average daily attendance (ADA) because

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* See SRI report, Entitlements for Federally Affected School Districts Under PL 874 and 815, Menlo Park, California, 1965.

of phase-out, the decline was shortly followed by a rise, indicating the temporary nature of the problem for those districts.

There were several reasons why the past phase-outs generally did not cause a decline in entitlements, or a decline in pupils, of sufficient magnitude to create financial problems for school districts:

1. Most installations phased out were relatively small and affected few people.

2. Most school districts received only a small proportion of their revenues from PL 874.

3. Most districts had federally connected pupils attached to several installations, and hence phasing out any one installation did not eliminate all of the district's entitlement. The impact was further mitigated in this situation by the tendency of the local contribution rate (LCR) for PL 874 payment to rise substantially.

4. Most of the larger installations that were phased out had their pupils attending schools in a large number of school districts, so that the impact was dispersed.

5. In many areas when a phase-out occurred, the expansion of other federal facilities neutralized the effect of the phase-out.

6. Even where a potential problem did arise because of significant decline in entitlement, there were factors making it relatively easy for the state and local governments to compensate for the loss of entitlement. These factors are discussed in the following section.

Financial Problems of School Districts Experiencing Phase-Out

In addition to the overall study of several hundred school districts, we made a study in depth of 45 school districts, representing those most affected by the phase-outs. This study showed that even in this group of 45 most affected districts, relatively few had severe financial problems. Eight of the districts experienced declines in total revenue per ADA, and another 27 had declines in net entitlement which would have resulted in declines in revenue per ADA, except that revenue receipts from state and local sources increased sufficiently to prevent the potential problem from being actualized. Sixteen of the 45 districts had expenditure problems--meaning that revenues and ADA declined, but that expenditures for education could not be reduced sufficiently to prevent a rise in costs per pupil.

The analysis presented in Chapters III, IV, and V suggests certain conclusions concerning the causes, extent, and duration of financial

problems that can be expected to arise in school districts facing the phase-out of a federal installation:

1. A potential revenue problem (i.e., a decline in total revenue per pupil) can be expected whenever the decline in entitlement under PL 874 is not matched by a corresponding decline in total ADA--that is, when the pupils that were previously federally connected do not leave the district. But this potential revenue problem may not become actual.

2. The potential revenue problem will usually not become an actual problem to the district, mainly because of increases in state aid and local property tax receipts. State governments have been increasing their share of financial support for education, and increases in state aid per pupil will be a major factor in helping districts through the transition period. In urban districts especially, there has been a general upward movement in assessed values and in tax rates. These can be expected to be responsive to declines in other revenue sources, helping to ease the transition. Thus, only a minority of districts facing potential revenue problems will experience actual problems, and these problems will seldon be large.

3. Although declines in total ADA tend to preclude revenue problems, many districts can be expected to have expenditure problems--i.e., those resulting from an inability to reduce costs of education. While these problems may often be severe, they will also tend to be of short duration--seldom more than two years.

4. Severe debt service problems will seldom arise, because debt service is usually only a small proportion of total costs. A significant debt service problem will arise only under a unique combination of circumstances--recent construction without PL 815 assistance, and large decline in total revenue due to phase-out, either unaccompanied by a decline in ADA or by a decline in current expenses of education.

5. The problems can generally be expected to emerge in the year in which the phase-out occurs; that is, significant time lags are not anticipated.

6. The factors that can be expected to contribute to the emergence of financial problems are shown in Table 1.

Relation between Past and Future Problems Resulting from Phase-Out

Investigation as to whether our conclusions about past phase-outs will hold true for future phase-outs is beyond the scope of this study. An indication, however, that future phase-outs will not differ significantly from past ones is provided by the recent phase-out of the Schilling Air Force Base and the resultant problems in the Salina, Kansas,

Table 1

CAUSAL FACTORS IN THE CREATION OF SCHOOL FINANCIAL PROBLEMS DUE TO PHASE-OUTS

Causal Factor	Revenue Problem	Expenditure Problem	Reasons for Occurrence of Problem
Location of Installation			
Inside school district		Yes*	Larger federal involvement. District tends to be military and thus to lose pupils by transfer.
Outside school district	Yes*		District tends to be residential with few alternative sources of revenue. Pupils tend to remain in district.
Small size of school district	Yes†		Greater difficulties in increasing local revenues. Federal involvement tends to be greater.
		Yes†	Less cost flexibility makes it difficult to reduce total costs.
Type of Installation			
Manufacturing	Yes†		Pupils tend to remain in district.
Military base or construction project		Yes†	Pupils leave district.
Inadequate forewarning		Yes†	Prevents district from taking measures to reduce costs of education.
Annual expected decrease in entitlement equal to or greater than 7 percent of total revenue		Yes*	Greater tendency for pupils to leave district. Revenue may be enough, but expenditures per pupil do not decrease as fast as pupils leave.
Not located in a large city or within commuting distance to it	Yes*		Pupils tend to remain in the more rural isolated area. District has much greater difficulty increasing local revenues in response to declining entitlement.

* These causal factors are verified by x^2 statistical test at 90 percent confidence level.
† These causal factors do not show dependence at 90 percent confidence level, but are verified by case study investigations.

School District. The following paragraph presents the findings in this case, which is fully discussed in Appendix C.

Prior to the Schilling phase-out, federal ADA was 31 percent of total ADA in Salina, corresponding to an average of 34 percent for the 45 sample districts analyzed in our study. Net entitlement in Salina school districts is expected to decline from 15 percent to 2 percent of TCE in a two-year period, and 10 of the 45 districts in our study experienced annual declines of this proportion. It is estimated that the ratio of the decline in federal pupils (3(a) + 1/2 3(b)) to the decline in total ADA will be about 0.87. According to our analysis, no revenue problem should arise under this condition, and in fact no revenue problems are arising in Salina. Assessed property values are declining somewhat in total, but are increasing on a per pupil basis. There has been a moderate expenditure problem, because costs could not be reduced as rapidly as the decline in ADA. At least two districts in our sample reflect similar problem structures--California, SAFA#189, and Texas, SAFA#453.

Conclusions and Recommendations Regarding Legislation

As shown in Chapter V, many school administrators are confused by the existing legislation and do not know how to proceed after a phase-out occurs in their districts. Part of the reason is that existing legislation contains emphasis on special cases or atypical cases, without including basic principles that can be applied in the great majority of cases. Proposed legislation, as will be seen, is little better.

The following list of basic principles may be used as guidelines for legislation dealing with the phase-out problem in school districts.

1. Transition principle. The overall principle is the fundamental assumption that the payments to school districts should ease the financial strains of phase-out during the period of transition from one pattern of attendance and revenue to another. The Office of Education is assumed not to take responsibility for permanent subsidies to school districts, no matter what the economic plight of the area may be, since such responsibility belongs to other governmental functions.

2. Duration principle. Arising from the transition principle, the duration principle states that the transition period must have a reasonable limit--neither too short nor too long. If too short, the federal aid is inadequate, and if too long, the federal aid discourages reasonable local effort to make the transition. A duration of 3 years will cover the great majority of phase-out cases.

3. Problem definition principle. The financial problem due to phase-out should be defined more concretely--as either a revenue problem, or an expenditure problem. That is, transitional financial problems may arise for school districts either because

there is a decline in revenues without a decline in pupils (a revenue problem), or there is a decline in revenues and pupils, without a corresponding decline in costs of education (an expenditure problem). Since it is shown in Chapter V that state aid payments and property tax revenues do not usually decline in response to a phase-out, the decline in revenue may be directly related to changes in net entitlement under Sections 3 and 4 of PL 874. With regard to changes in ADA, the revenue and expenditure problems may be viewed as two ends of a seesaw: revenue problems tend to arise with a decline in ADA, whereas expenditure problems tend to arise if ADA does not decline. Thus, in devising legislation, one should consider changes in net entitlement, without concern to whether pupils remain in the district, or leave.

4. Principle of nonfederal aid. Although the recommended solution to the transitional problem is to compensate affected districts for declines in net entitlement, our study has shown that under most circumstances, increases in state and/or local revenues will occur to prevent actual revenue problems from arising. Since the federal aid, proposed or existing, should be transitory, it is reasonable to expect state and local governments to continue to assist in preventing or lessening the declines in revenue per pupil, and to take steps to reduce excess costs as soon as possible. There is no research that can precisely determine how much of the transitional cost should be borne each year by state and local governments, but a reasonable figure will be suggested in a later section.

5. Absorption principle. This principle combines the foregoing principles into a formula that can eliminate most special or atypical cases, and standardize the procedures for determining payments. Basically, the principle uses the economic fact that per pupil costs of education have been increasing at a rate of 5-6 percent per year.* Since this increase has been covered by local and state governments in the past, a total decline in entitlement equal to 5 percent or 6 percent of total current expenses of education should be absorbable by most districts, without recourse to federal aid. Twenty-eight of the 33 districts in our sample which had potential revenue problems realized annual state and local revenue increases at the 5-6 percent level or higher. On the other hand, a few districts (rural districts with poor tax base) would find it difficult to realize such revenue increases; therefore a lower absorption rate may be used.

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* The average annual increase in current expenses of education per ADA during the period 1950-63 was 5.8 percent (U.S. Office of Education, Digest of Educational Statistics, Edition 1956 to 1964; and Biennial Survey of Education in the United States).

Analysis of Existing Legislation on Phase-Out Effects

Existing legislation pertaining to the effects of phase-outs on school districts is contained in Section 3(f) of PL 874 and in the Purtell Amendment to this law.

Section 3(f)

Section 3(f) gives the Commissioner of Education wide discretionary authority to provide reasonable compensation in cases of significant impact of federal installation phase-outs on school districts. On the surface, Section 3(f) appears to offer a solution for almost all problems arising from a federal installation phase-out. Most school officials contacted during our field visits felt that treatment of claims under 3(f) were just and reasonably liberal.

Yet in practice, Section 3(f) falls considerably short of theoretical comprehensiveness. The important limitations of Section 3(f) are that it applies only to the year of phase-out (no duration principle), and applies only when there has not been reasonable forewarning (a special case). A major phase-out could cause problems extending beyond the single year when phase-out occurs. Severe economic dislocation may cause local revenues to decline, creating a revenue problem in excess of the decline in entitlement. The problem created by lack of forewarning can be better handled by more standardized procedures, as will be shown subsequently.

The Purtell Amendment

The Purtell Amendment is designed mainly to solve the problems of large urban school systems. However, such school systems represent a small fraction of the total number that are affected or could be affected by reductions in federal activity. The limitation of the Purtell Amendment is that it is designed basically to deal with problems caused by losses in federal ADA over a narrow range--from a little above the standard 3 percent of total ADA to a little below. In towns, rural districts, and smaller cities, the drop in federal ADA as a fraction of total ADA may be much greater than 3 percent from major phase-outs, as shown in Chapter V. The 3 percent standard is much less significant to these medium and small size districts than the actual loss in enrollment and net entitlement. Hence, the Purtell Amendment is usually of little help to these districts. Furthermore, this amendment permits entitlement only on residual federal ADA after the cut to below 3 percent. If federal ADA falls to zero, no payments may be made. The payments made under this amendment are not related to the magnitude of the impact, and this is its prime limitation. Even the amendment's recognition of the need for districts to receive payments over 2 years is insufficient; the duration of phase-out effects should be extended to 3 years.

Analysis of Proposed Legislation

Recently proposed federal legislation would amend Public Law 874 and 815, and would attempt to eliminate transitory problems resulting from the closing of federal installations. The contents of the proposed legislation are summarized below:

ANALYTICAL SUMMARY OF PROPOSED LEGISLATION
(Bills in House of Representatives or Senate, 89th Congress, 1st Session)

Proposed Law	Contents
H.R. 6704	Amends PL 874 and PL 815 to disregard the installation-closing order of 11/19/64; payments will be made for one year as if no order had been issued.
H.R. 7931	Districts meeting 3 percent requirement for federal ADA get help if percent drops below 3 percent, for 4 years. Payments: 1st year, full; 2nd year, 75 percent; 3rd year, 50 percent; 4th year, 25 percent.
	Districts faced with entitlement loss from phase-out get entitlement for year of phase-out, plus 2 succeeding years. Payments: 1st year, 75 percent; 2nd year, 50 percent; 3rd year, 25 percent.
H.R. 9022	Virtually the same as H.R. 7931, plus the following. All eligibility becomes 3 percent, and the 6 percent requirement for large districts (ADA over 35,000) is eliminated.
S.R. 1257	Schools facing phase-out need only 1 percent requirement if they previously qualified with 3 percent. If the federal ADA drops below 1 percent, even this requirement is waived; school gets payment for 1 percent--again by decreasing amounts for 4 years: full, 50 percent, 66-2/3 percent, and 75 percent.
S.R. 1527	Virtually the same as H.R. 7931.

All of the proposals relating to the phasing out of PL 874 funds suffer from the main basic weaknesses of the existing legislation. They are not based upon the annual magnitudes of the decreases in total revenue resulting from phase-outs, and the number of years such decreases occur. They do not contain an absorption principle.

Recommended Legislation

The recommended legislation would be applicable to most school districts in the United States. As a starting point, it would be assumed that most districts could absorb a given increase in cost per pupil, because of the normal annual increases already taken into account by state and local governments. In order to eliminate the number of special cases requiring federal assistance, the normal annual percent increase in cost of education (5-6 percent) need not be used. The absorption rate could be made lower--say, 3 percent--thereby minimizing the need for dealing with special cases under Section 3(f) of PL 874.

Another alteration in the calculation procedure is suggested in order to eliminate federal payments for normal increases in costs of education per pupil. Entitlement in year t+1 (year following phase-out) reflects not only the change in federally connected pupils, but changes in the LCR. Since the latter changes are presumably a reflection of education costs, the decline in entitlement requiring compensation should reflect only the decline in federally connected ADA. Thus, federally connected ADA in year t+1 should be multiplied by the LCR in year t in determining the basis for payment in year t+1, and the recommended equation to determine the transitory payment in any year after phase-out is:

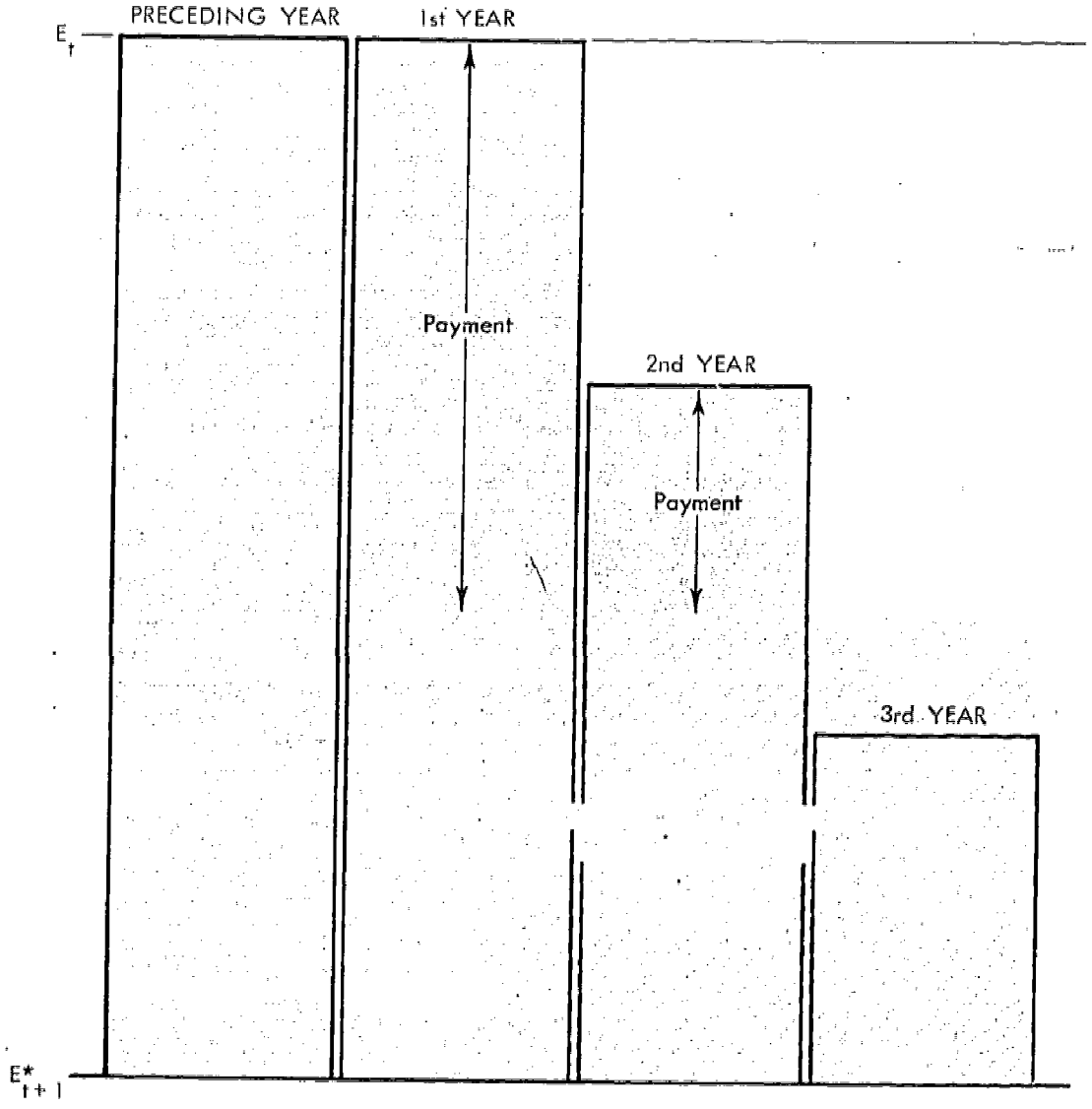
$$\text{Payment}_{t+1} = \text{Entitlement}_{t} - \text{LCR}_{t} \left(3(a) + \tfrac{1}{2}\, 3(b)\right) \text{ADA}_{t+1} - 0.03\ (\text{TCE})_{t}.$$

If a change in entitlement is greater than 3 percent of total current expenses, so that a federal payment is required, then additional payments should also be calculated for two more years. It is suggested that the payment in the second year be based upon two-thirds, and the payment in the third year, upon one-third of the change in entitlement which occurred in the first year. These subsequent payments should also be subject to the same level of absorption as the first payment; that is, 3 percent of current expenses in the base year should be subtracted in determining net payment due in each of the years. Note that in the hypothetical example shown in Figure 1, no payment would be made in the third year. It can readily be seen that payments would be made for the full three years only if the reduction in entitlement (using the base year LCR) is greater than 9 percent of current expenses of education in the base year. Seven of the 45 districts analyzed in Chapter V fall into this category.

Each year in which there is a decline in entitlement because of a reduction in force at an installation is treated separately. Thus, it is possible for a district to be receiving three separate payments in one year. This situation is shown algebraically in Figure 2. In the hypothetical situation, net entitlement is reduced to zero in three annual reductions: i.e., net entitlement in year t+3 is zero. Total phase-out payment in year t+3 is equal to the sum of the following payments: (1) third year payment for reduction in entitlement from year t to year t+1; (2) second year payment for reduction in entitlement from year t+1 to year t+2; and (3) first year payment for reduction in entitlement from

FIGURE 1

HYPOTHETICAL EXAMPLE OF ANNUAL FEDERAL PAYMENTS TO A SCHOOL DISTRICT DUE TO A PHASE-OUT



E_t = Net entitlement under Sections 3 and 4, PL 874, in year t.

E^*_{t+1} = Net entitlement under Sections 3 and 4, PL 874, in year t+1, calculated by using the LCR in year t. E^*_{t+1} may be zero.

SOURCE: Stanford Research Institute.

FIGURE 2

ALGEBRAIC FORMULATION OF ANNUAL PHASE-OUT PAYMENTS
UNDER PROPOSED LEGISLATION

POSSIBLE PHASE-OUT PAYMENTS IN ONE YEAR	YEAR t	YEAR t + 1	YEAR t + 2	YEAR t + 3	YEAR t + 4	YEAR t + 5
a. Payment for reduction in entitlement from year t to year t + 1		$E_t - E^*_{t+1} - 0.03\ TCE_t$	$\frac{2}{3}(E_t - E^*_{t+1}) - 0.03\ TCE_t$	$\frac{1}{3}(E_t - E^*_{t+1}) - 0.03\ TCE_t$		
b. Payment for reduction in entitlement from year t + 1 to year t + 2			$E_{t+1} - E^*_{t+2} - 0.03\ TCE_{t+1}$	$\frac{2}{3}(E_{t+1} - E^*_{t+2}) - 0.03\ TCE_{t+1}$	$\frac{1}{3}(E_{t+1} - E^*_{t+2}) - 0.03\ TCE_{t+1}$	
c. Payment for reduction in entitlement from year t + 2 to year t + 3				$E_{t+2} - E^*_{t+3} - 0.03\ TCE_{t+2}$	$\frac{2}{3}(E_{t+2} - E^*_{t+3}) - 0.03\ TCE_{t+2}$	$\frac{1}{3}(E_{t+2} - E^*_{t+3}) - 0.03\ TCE_{t+2}$

E_t = net entitlement under Sections 3 and 4, PL 874, in year t

E^*_t = net entitlement under Sections 3 and 4, PL 874, in year t, calculated using ADA of previous year

TCE = total current expenses of education

t, t+1, t+2, etc. = the various years in sequence from the start of phase-out

SOURCE: Stanford Research Institute.

year t+2 to year t+3. Such a situation would occur only where entitlements were a very large proportion of total expenses in year t,* and where very substantial reductions occurred in each of 3 years.

A 3-year schedule of decreasing payments is recommended for the following reasons: (1) 3 years is believed to be ample time to adjust to new circumstances; (2) none of the school districts surveyed in this study had financial problems lasting longer than 3 years, and most had problems for only 1 year; (3) the imposition of an absorption requirement means that payments for as long as 3 years will be made only to districts experiencing substantial decreases in revenue, and needing the longer period for adjustment.

There is a definite need for a clause to take care of special cases, but not the special cases of the type now being provided for--i.e., inadequate forewarning, better handled by general legislation, as suggested below. The new clause for special cases would cover situations such as debt service problems, unusual cases of economic depression leading to significant reductions in assessed property values, and other situations not reasonably covered by the above formulas.

This study has shown that local authorities will be better able to alleviate financial, especially expenditure, problems if there is adequate forewarning of a phase-out. The absorption principle, in fact, assumes that there will be sufficient forewarning to permit some alteration to be made in the school budget for the first year of the phase-out. If this is not the case, then absorption of 3 percent of TCE may be suspended for the first year payment.

The recommended legislation arises from the experience of phase-outs occurring during the 1950s and early 1960s when the economy was generally experiencing economic growth, and the military phase-outs were a small proportion of the U.S. defense establishment. Under these conditions, it appears that most districts can adjust to the phase-out without impairing educational values, and will require only transitional assistance of relatively short duration. If, however, there were to be major disarmament accompanied by widespread economic dislocation, an entirely different situation might arise. The recommended legislation might then prove inadequate to the task, because of failure to take into account declines in state and local revenues. At present, such declines are rare, and can be handled by special consideration under an expanded Section 3(f). In addition, these declines generally reflect the poor economic health of the community, a situation beyond the jurisdiction of the Office of Education. In the case of general disarmament, an entirely different form

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* Entitlement in year t would have to be at least 15 percent of total current expenses in order to qualify. As noted in the previous SRI study, only 10 percent of entitled districts meet this condition. (See Table 3, Vol. 1, SRI, op. cit.)

of assistance may be needed to preserve education values in affected communities. It is suggested that the Office of Education undertake a study to devise standby legislation that might be invoked in the case of general disarmament.

School Administrator Need for Specific Information: A Handbook

For many school administrators, the phase-out of a major federal installation is a new occurrence. They cannot draw upon their experience and readily assess the magnitude or scope of the problems they are likely to face. Though they may know their school system well, they are much less certain of the impact of such a phase-out on the community and how it will affect local response to the needs of education. See Appendix C on how this problem applies to Salina, Kansas. Field trips by SRI staff members in this study indicate that many administrators are uncertain about what help is available to them, particularly from the federal government, and of exactly how they should present their problems, to whom, and when. We have found that local officials' lack of familiarity with already legislated assistance frequently and unnecessarily increased the problems caused by phase-outs.

Hence there is an apparent need for an instrument such as a handbook, that brings to school administrators the experience of others, and distills for them the several laws and many procedures that may apply to their problems. By having in one book all available information and experience, these local officials can better analyze their own problems. They will then be able to use all available tools and take appropriate action that will be prompt and direct.

The handbook could have three principal parts.

Case Studies. Description in the handbook of the categories of school districts and of federal installations would enable the school superintendent to determine which other districts are in situations similar to that of his own district. For each category, the historical experience of all such districts could be summarized, and several representative case studies could be presented and analyzed in detail.

Outside Help. The several applicable laws and recent amendments would be summarized, along with concise statements of specific criteria that are currently applied in administering these laws. Such information would clear up the doubts that many school superintendents have about Section 3(f) of PL 874. This part of the handbook could also include administrative formats for effective and complete presentation of school problems and requirements. Not only would sections of public laws 815 and 874 be included, but also other legislation which might provide some relief. In this latter category, certain aspects of recent anti-poverty legislation would be explored, as well as other varied new programs which provide increased federal aid to education.

Self-Help. A review would be made of effective techniques used in the past by local administrators to solve, within their own authority and resources, the problems caused by major federal base phase-outs. A summary of these techniques would be provided. Also discussed would be: various economic measures; methods of developing community understanding of the school system problems; and alternative uses that could be made of surplus facilities.

The Office of Education might also wish to consider sending a consulting team to school districts that were having particularly severe problems, and that wanted consulting assistance. Such a team, in several days, could review and analyze on the spot all aspects of the situation. They could then discuss the numerous alternative solutions and courses of action available to local school administrators. The function of this team would parallel that of the consulting teams of the Office of Economic Adjustment (Department of Defense) which deal with broad community problems or even regional problems of economic development.

III CONCEPTS IN THE STUDY OF FEDERAL INSTALLATION PHASE-OUTS

Definition of the Problems

This study is concerned with financial problems created in school districts when federal installations are phased out. Problems created for agencies other than school districts are not considered in this study, because such problems are not the concern of the Office of Education. Although non-financial problems, such as those related to pupil aspirations and quality of education, may also arise due to phase-out, they are considered in this study only to the extent that they are reflected in district finances. Financial problems are emphasized for four reasons: (1) Nonfinancial problems are more likely to be permanent than transitory; (2) the federal government can directly assist in alleviating the financial problems; (3) many nonfinancial problems have a financial counterpart in the school budget, and can be handled by financial assistance; and (4) nonfinancial problems are difficult to quantify in a consistent manner.

A financial problem is said to arise for a school district whenever the phase-out results in revenues falling, or costs of education rising, in relation to the number of pupils in the district requiring public education. Financial problems are expressed in per pupil terms, because of the assumption that the task of the educational agencies is to provide education for individual pupils. Thus, if the phase-out causes a reduction in pupils, and all revenues and costs are reduced in the same proportion, without sacrifice of educational quality, then the phase-out has not caused any financial problem of education.

For purposes of this study, we recognize three types of financial problems:

1. Revenue Problems. Where revenue per pupil declines for either of two reasons: (a) there is a decline in net entitlement under PL 874 without a corresponding decline in pupils, or, (b) for a variety of reasons, the phase-out results in declines in state or local revenues greater than the decline in number of pupils.

2. Expenditure Problems. Where costs of education per pupil rise because of the inability to reduce certain costs of education, even though the number of pupils to be educated declines.

3. Debt Service Problems. The fixed obligation of debt service creates a significant problem for the school district whenever (a) recent construction leads to debt service which is a high proportion of total costs (usually over 10 percent), or (b) debt

service is a moderate proportion of total costs, but revenues have declined severely.

The financial problems of school districts may arise from either direct or induced effects. A direct effect is a change in school revenues or costs resulting directly from changes in the status or location of federally connected pupils and their families. An induced effect is a change due to the economic impact on a community from an installation phase-out.

Direct Effects on School District Revenues

Federal Entitlement under PL 874

Phase-out of a federal installation can result in an immediate reduction in revenue because of elimination of entitlement under PL 874. However, there are two sections of PL 874 that are specifically designed to mitigate the impact of a federal phase-out. Section 3(f) authorizes the Commissioner of Education to use different entitlement criteria in situations such as phase-out. Thus, when a school district has made reasonable preparations for a number of federal children, only to see this number substantially reduced (at least 10 percent) by federal action, the school district is compensated as follows. The Commissioner uses his judgment as to how much of the financial problem the federal government should assume, but only for the one year when the drop in federal enrollment occurs. In this case, the school is expected to reduce some of its educational costs by adjusting its services to decreased enrollment, and then the payment of federal money is based on the original entitlement (when federal children were there) minus the value of the economies made or expected to be made by the school after the federal children have gone.

Under the Purtell Amendment of 1959-60, a school district which had previously qualified for entitlement (3 percent or more of its ADA being federal children), and which then experiences a loss in this ADA that brings it below the 3 percent level, can still qualify for federal support. Full entitlement will be paid for the actual federal ADA in the fiscal year in which the drop occurs. Payment for the following fiscal year is reduced by 50 percent of what the local contribution rate (LCR) for that year would normally be. After this second year there is no payment.

Occurrence of Direct Effects

Direct effects occur in two steps: (1) a change in the status of the federally connected pupil; and (2) actions of the family because of the installation phase-out. The pupil would have been entitled under one of three subsections of PL 874: (1) Section 3(a)--the pupil lives on a federal installation, and has a parent who works on a federal installation; (2) Section 3(b)1--the pupil lives on an installation, but has no parent working on an installation; and (3) Section 3(b)2--the pupil lives in

private housing, and has a parent working on a federal installation. Entitlement for a Section 3(b) pupil is at one-half the rate for a Section 3(a) pupil. If the federal payment to a district is just meeting the intent of PL 874, then this payment is equal to the amount of local revenues that the district would receive from normal tax sources if the pupil was not federally connected. As was found in the Institute's previous study of PL 874, the payment differs from the required payment in a majority of districts. The effects of this divergence are discussed later. At present, the effects are discussed as if the correct federal payment was being made prior to the installation phase-out.

Parents of pupils under Section 3(a) are usually members of the armed forces, or temporary construction workers. In either case, phase-out of the installation (or completion of construction) simultaneously eliminates the federal entitlement and the federal pupil, since phase-out of the installation is usually accompanied by the transfer of the family to a new location. The PL 874 payment per 3(a) pupil should have been just equal to the local revenues for each of the nonfederal pupils; withdrawal of the pupil and the associated federal revenue, therefore, does not alter the federal and local revenues available per pupil.* Under this condition, elimination of pupils under Section 3(a) through installation phase-out should not result in any revenue problems for the local school district.

Effects on Local Revenues for 3(b) Pupils

Because the working parents of many 3(b) pupils are civilian employees, a variety of responses could follow phase-out of a federal installation. In the case of 3(b)1 pupils--those living in federal housing--it is highly likely that the family will move to private housing in the same area, to permit the working parent to continue in the same job. The school district will lose the federal entitlement when the public housing is phased out. If the family finds existing housing in the district, reducing the vacancy rate, this will not change district revenues from property taxes, but will result in a decline in federal revenue per pupil, because of the loss of PL 874 entitlement. If the family builds a new home that makes a net addition to the tax rolls, then the increase in local property tax revenues will compensate for loss of PL 874 funds. If the family finds private housing outside the school district, then the school will also lose the pupil. In this situation, local revenues per pupil will increase, because the loss of federal funds will be equal to only one-half the normal local revenues per pupil.

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* If there are no other federal installations for which the community receives entitlement, then the closing will result in federal payments declining to zero, under our previously stated assumptions.

For 3(b)2 pupils--those living in tax paying residences, with a parent working on federal property--five alternative situations can arise:

1. Family leaves area, seeking employment elsewhere.

2. Family remains in district, and parent is unemployed.

3. Family remains in district, and parent replaces somebody else in an existing job.

4. Family remains in district, and parent takes a job outside the district.

5. Family remains in district, and parent takes a newly created job in the district.

If the family leaves the area, creating a rental vacancy, there is no immediate effect on local revenues from property tax, and the result is that local revenues per pupil rise. However, in time, the additional vacancies could drive down property values, and local revenues might decline.

If the family remains, and the parent is unemployed, then there is a decline in federal revenues, without any other change in local revenues or number of pupils; therefore, total revenues per pupil decline. The same effect on school district revenues occurs if the family remains and the parent replaces an existing worker in a job, or commutes to a job outside the district. In none of these cases is any additional revenue generated to supplant the federal payments.

If the family remains and a new job is created for the worker, then the decline in revenues per pupil will be only temporary. As soon as the new business activity represented by the new job is on the tax rolls, the total revenues per pupil (not considering the secondary income-generating effects of the new activity) will be approximately the same as previously--perhaps more or less, depending upon the relationship between the tax payments of the increased business activity and the federal entitlements.

Effects of State Aid Payments on Local Districts

On a national average, state aid makes up about 40 percent of total revenues for school purposes and is therefore a major factor in school financing. Consequently, the response of state aid to federal installation phase-out is important to this study.

A state aid program may be classified as one of three major types: (a) flat or nonequalization aid per ADA, (b) equalization aid, with a pupil support level set by the state at some dollar figure and with local effort defined in terms of assessed valuation or an economic wealth (nonproperty) index, and (c) equalization aid, with the state paying some percentage of district-set total program costs, the percentage being determined according to the district's assessed valuation per ADA.

Total flat aid decreases if federally connected pupils leave the district, thus producing a declining total ADA, but remains the same if pupils remain even when there is a shift from federal to nonfederal ADA. Aid per pupil is independent of the parental job status or location, so long as the children stay.

Equalization formulas, with a base support level and local effort defined by assessed valuation, will decrease state aid per ADA any time that valuation per pupil rises, as in the following situations:

1. The 3(a) pupils leave the area, resulting in a smaller ADA with no change in assessed value.

2. The 3(a) pupils become 3(b)2, or the 3(b)1 pupils become nonfederal, with a consequent substitution of private for public housing, resulting in an increased assessed value with a constant ADA.

3. A parent of a 3(b)2 pupil becomes employed at a new job, not federally connected, in the district, producing an increase in assessed industrial or commercial values, with no change in ADA.

When an economic wealth index is substituted for assessed valuation, the equalization formula should produce a more accurate estimate of a district's ability to support schools and should become more sensitive to local changes. But the accuracy and sensitivity depend on the selection and updating of index inputs. Theoretically, the equalization formula responds the same with either measure.

State equalization aid may be computed as some percentage of actual cost. In such a formula, if the phase-out results in a decline in ADA with a less than proportionate drop in per-pupil costs because of scale effects (discussed later), then state aid per ADA does not decrease as much and can actually increase in situation 1 cited above.

If the increase in assessed value (or economic wealth) or decrease in ADA (or costs) results in local revenues rising just enough to counterbalance the decline in federal payment, then the decline in state aid for the above situations causes a decline in total revenue per pupil.

Several states with equalization programs offset part or all of the PL 874 payments. (See Chapter 6 in the previous SRI study on PL 874.)* In such states, PL 874 funds are usually treated as an increase in the local ability to support schools. For districts in these states, the negative effects on state aid due to a federal phase-out are lessened. That is, the decline or elimination of the federal funds would cause state aid per pupil to decrease less severely under the conditions outlined above.

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* Throughout this report, the "previous SRI study" referred to is: Entitlements for Federally Affected School Districts Under Public Laws 874 and 815, Vols. 1 & 2, Menlo Park, California, May 1965.

The After-Effects of Windfall Federal Payments

As described in the previous Institute study of PL 874, a majority of school districts receive payments per pupil in excess of payments necessary to equalize the revenues from families of federal and nonfederal pupils. These windfalls will disappear upon the closing of the federal installation.

Districts receiving these windfalls can suffer a reduction in total revenue per pupil even when a pupil leaves the district. For example, suppose local revenue per pupil for nonfederal pupils is $50, PL 874 payment per federal pupil is $150, total ADA is 10,000, and federal ADA is 1,000 (all Section 3(a) pupils). In this case, total local revenue is $450,000 (9,000 x $50), federal payment is $150,000, and total revenue (federal and local) per ADA is $60. Phase-out of the installation results in ADA declining to 9,000, and total revenue per ADA declining to $50. On the other hand, it is possible that a district can build up a large surplus fund through not spending these windfall payments, and can use such a fund as a cushion during a phase-out to avoid actual revenue problems.

Induced Effects on School District Revenues

Phase-out of a federal facility can have effects on a community similar to those that result from a major factory shutdown or layoff, or the phase-out of any other major activity that essentially exports its products and creates local income through employment and purchasing. These effects reverberate through the community, causing unemployment, declines in retail sales, and loss of property values. Some of these effects strike immediately, while others occur after some time lag.

Examples of Induced Effects

There are many examples of a depressing economic effect upon a community from phase-out of a federal installation. A few examples follow:

1. Fort Polk, Louisiana. This was the economic base of both Leesville (seat of Vernon Parish School District) and De Ridder (seat of Beauregard Parish School District) in Louisiana. The majority of businesses in both towns were oriented toward servicing the military personnel of the Fort. When the installation was phased out, business failures increased significantly, the assessed valuations declined, and the populations decreased.

2. Naval Station, Astoria, Oregon. This was phased-out in 1952, and again in 1961, at both times resulting in large commercial losses; the 1961 phase-out caused 20 percent of the population to leave.

3. Mojave, California. In 1959, this town had geared itself to an announced $80 million construction program at the Marine Corps Auxiliary Air Station, and had made investments in anticipation. The sudden cancellation of the construction program and the very quick phase-out of the Air Station left the town in a relatively depressed state.

4. Presque Isle, Maine. This small town was hard hit by the phase-out of the Presque Isle Air Force Base.*

The relation between induced effects and changes in school finance is complex and certainly not obvious, because loss of personal income in a community is not immediately translated to a loss of school revenue, but only after a time lag of indeterminate duration. This income loss will be transferred in the following ways: (1) loss of income results in pressure to reduce the tax rate, or in failure to approve increases in tax rates; (2) declines in market values of property are eventually reflected in lower assessed values, and thus in reduced revenues; and (3) lower incomes and increases in rental vacancies result in increased delinquencies. There is no theory to explain these quantitative relationships; furthermore, transfer of reductions in income to school finances is not automatic. For instance, the community may decide to maintain the level of education in the face of falling incomes, and in this case, school revenues may never reflect the economic deprivation in the community. Thus, to understand the economic impacts of a phase-out on a community, we need to know the magnitude and the timing of specific induced effects on school revenues. We conclude, therefore, that without a significant research effort over a considerable period of time, it will not be possible to anticipate the induced effects on school revenues that accompany particular economic impacts in the community.

Time Lag and Complexity of Induced Effects

The fact that the induced effects generally occur over a period of time and with a lag provides a time span during which other economic events can occur in the community. During the period of the 1950s, and early 1960s, communities in metropolitan areas have been generally experiencing economic growth, and any contraction that would have resulted from a phase-out has been reduced or eliminated by the general effects of economic growth.

One aspect complicating the analysis of induced effects is that phase-outs, although looked upon by communities as being detrimental when

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* See Chapter V for a discussion of the financial problems created for school districts under conditions of significant economic impact, including those mentioned here.

they occur, actually turn out in many cases to be beneficial. A few examples are given below:

1. In 1961-62, an Army Signal Depot, employing 1,300 people, was phased out in Decatur, Illinois. Within a very short time, however, the Firestone Tire & Rubber Company bought the depot plant, and the General Electric Company acquired a plant site. Within four years, these companies employed 2,300 persons and added to the tax base significantly. The city of Decatur is better off because of these events.

2. In York, Pennsylvania, a Navy installation that was phased out was taken over almost immediately by American Machine & Foundry Co. The plant's payroll went from $5.5 million to $16 million, with obvious beneficial effects on the economic life of York.

3. In Presque Isle, Maine, an Air Force base that was phased out was turned into an industrial park that provided employment for about 200 people.

4. The economy of Edenton, North Carolina, suffered a significant slump as the result of the phase-out of the Edenton Marine Air Base, beginning in 1958-59. Through local initiative, the tax base has been increased, and the area is economically sound.

5. In Pittsburg, California, the phase-out of Camp Stoneman had a depressing effect upon the local economy but the townspeople thought they were better off, since undesirable commercial establishments were eliminated.

There is no obvious connection between the rate of growth of a community and its ability to finance education. Rapid growth implies higher per pupil capital expenditures to provide new schools, but this increase is somewhat counterbalanced by the tendency to have a higher percentage of young teachers at beginning salaries, thus decreasing the current cost of education. The complexity of the relationship between growth and financial ability leads us to conclude that the induced effects can create significant and quantifiable financial problems only where the phase-out results in a net decline in economic activity.

The Duration of the Financial Problem

The duration of the financial problem will vary because the adjustments required to alleviate them will vary. Some districts may take more than a year to recover from phase-out effects. The time depends upon the amount of forewarning, the abruptness of the federal phase-out, and the rate of change in population and economic activity in the community. For example, the immediate effect may be a rise in unemployment, with a corresponding fall in revenue per pupil, followed by creation of new jobs or outmigration, with corresponding recovery of revenue per pupil.

The Effects on Costs of Education

Although there may be effects of the phase-out on educational programming, because the federally connected pupils may have had different interests and needs than the rest of the community, the only induced effect that responds to financial aid is an effect that is related to the cost of a given program. Substantial declines in the number of pupils in the district can increase the costs per pupil because of scale effects. Three types of scale effects may be recognized: (1) overhead expenses that are unalterable, resulting in a permanent increase in costs per pupil; e.g., debt service and some administrative expenses; (2) overhead expenses that temporarily must be spread over the smaller student body, but that can be reduced in time; and (3) educational expenses that can only be reduced by a reduction in the program, e.g., reduction of special offerings, such as music or art, that are provided by a single teacher for the district. At worst, the proportionate increase in these costs cannot exceed the ratio of total ADA prior to the installation phase-out to total ADA after phase-out, because the increases in costs per ADA are due to the decline in ADA and not to actual increases in costs.

Teachers present a special case. Some have protected positions, and cannot be summarily released. Furthermore, if a basic course must be offered, such as plane geometry or English literature, a teacher must be maintained to teach it, despite the fact that the individual class may be reduced from 25 to 5 students. Release of other staff members may involve significant severance expense.

The specific problems caused by teacher tenure statutes for a school district that wishes to decrease its staff cannot be determined without reference to court decisions on a state-by-state basis--a task that is outside the scope of the present study. However, a preliminary check of the Education Codes of the statutes of six states indicates that four of these states do provide for dismissal of teachers with lifetime tenure if the pupil population decreases substantially. Also, the National Education Association, Washington, D.C., indicated that 14 states do not have teacher tenure laws at all. In some of the other 37 states, the teacher tenure laws are not statewide; they may apply only to school districts in cities over a certain size.

In the California statutes that deal with teacher tenure, there is provision for rehiring laid-off teachers as soon as possible. These teachers retain their seniority, and the period of time they spend between jobs is treated as a leave of absence. These teachers are given preference when a job opening occurs; they have ". . . a preferred right to reappointment. . . ."

Contributing Causes of Financial Problems

The extent to which financial problems are created depends mainly upon the following: (1) the relative importance of the federal payments;

(2) characteristics of the federal installations, and of the federal families, including the speed and degree at which the families leave the area after the phase-out of the facility; (3) the location of the federal facility; (4) the timing of the phase-out and amount of forewarning; (5) the economic viability and structure of the community; (6) the managerial ability of school district administrators and community leaders.

Relative Importance of Federal Payments

The importance of a federal payment to a school district can be defined only when the payment is related to the total revenues of the district. For example, if the total ADA remains unchanged, the elimination of $1 million in federal entitlements creates more of a problem for a district with total revenues of $5 million than for a district with revenues of $50 million. In fact, the problem in this case would be expected to be about ten times greater. Yet, whether the problem will actually be ten times greater depends also on certain characteristics of the federal payments. Federal payment as a proportion of total revenue is determined by the following: (1) the proportion of pupils who are federally connected; (2) the classification of federally connected pupils as 3(a) or 3(b); and (3) how the local contribution rate used to determine entitlement compares with the actual local share of current expenses in the district. The first point is self-explanatory. The importance of the second point derives from the fact that pupils under Section 3(b) receive payment at half the rate of a pupil under Section 3(a). Thus, if a given proportion of pupils are under Section 3(b), the district receives only half as much federal entitlement for them as it would if they were under Section 3(a).

Pupils under Section 3(a) are mostly children of military families; the only other situation in which federal housing is normally provided for employees is in major construction projects, which are by nature temporary. The 3(a) pupil is relatively uncommon, only 15 percent of federally connected pupils being currently under this section.

As was demonstrated in the previous SRI study of PL 874, the intent of PL 874 is to pay for federally connected pupils at a rate equal to the revenues that would normally accrue to the district for pupils who were not federally connected. There are, however, provisions in the law that permit payment at rates substantially in excess of this amount, providing windfalls for the recipient districts. Where a windfall occurs, a decline in federally connected ADA at phase-out causes a larger proportionate decline in revenues, and such a loss of revenues tends to intensify the school district's financial difficulties.

Although approximately 4,000 districts receive entitlement under PL 874, in only a minority of the districts are these funds a significant proportion of total revenues. In 1959-60, only 18 percent of the entitled districts had PL 874 funds that were more than 10 percent of the current expenses of education; in 64 percent of the districts, these funds were

less than 5 percent of expenses. Thus, if it should be found that a district can reasonably be expected to absorb revenue declines of 5 percent in one year, then most entitled districts would require little or no assistance in making the adjustment (except when a phase-out negatively affects other sources of revenue).

The Characteristics of Federal Installations and Connected Families

Phase-out of an installation has different effects on revenues, other than entitlement, and on ADA, depending upon both the characteristics of the installation and the characteristics of the families connected with the installation.

Federal Installation Characteristics

Different types of federal installation support families with different characteristics relevant to problems of public school financing:

1. Military bases mainly have families that tend to have a relatively large number of children (excluding unmarried personnel who generally live on the base), tend to live in a high proportion of rental properties when they live off the base, and mostly leave the area upon phase-out of the base.

2. Defense plants such as NASA centers and AEC production centers tend to have a high proportion of civilian personnel with higher than average incomes, property values, and educational expectation. These people leave the area at phase-out, unless it contains suitable alternative employment opportunities, though their departure may be less rapid than that of the military families. Their assessed value per pupil is higher than that of the military; their departure has a larger effect on school revenues and on school program requirements.

3. Nonmilitary federal installations such as VA hospitals and shipyards have varied characteristics, with a high percentage of nonpermanent skilled civilian workers. Upon phase-out of these facilities, the personnel tend to remain in the area, or leave slowly to find work elsewhere. They include more permanent, home-owning residents.

4. Construction projects attract employees both from inside the local community and from outside. Short term construction, such as that of Titan missile silos, typically causes a frenzy of activity in the area. The whole economy is distorted by short run competition for goods and services. Little capital is attracted to provide additional facilities because of the temporary nature of the work. Housing is usually not on federal property, and students (and there are proportionately few) are 3(b).

Longer run projects, such as dam construction, have different characteristics because they take longer to build (e.g., 4 to 6 years) and result in more permanent employment. The community is able to attract capital and is willing to provide additional services. Federal housing and schools are frequently constructed. Thus, because more money and effort have gone into establishment and expansion, the phase-out may cause greater problems. The workers remain if other construction activities provide employment; otherwise they leave.

5. Federal housing projects are mostly left over from World War II. Initially, space was allocated to federal employees, so that all students were 3(a). As time passed, nonfederal families were admitted in increasing numbers, and the percentage of 3(b)1 students has grown accordingly. Almost every such project today is inside a school district. The federal government has disposed of many of these housing facilities, with a corresponding loss in federal entitlement for the school districts. The pattern of disposition has varied: private home owners have sometimes purchased individual units; civic corporations have been established and have purchased others and redeveloped the entire area; and in still other cases, the structures themselves have been sold and moved away, the land being disposed of separately. Since most of the families have local employment, they remain in the area, increasing the demand for, and eventually the supply of, private housing.

Family Characteristics

Several family characteristics affect school revenues:

1. Military personnel and permanent civil servants are transferred immediately upon phase-out, whereas other employees may remain.

2. Because of the absence of retired couples, federal personnel may tend to have more children per family unit.

3. Federal installations have employees of a certain income bracket, which may significantly alter their per family property values compared with the average of the surrounding community. For example, military personnel in Salina, Kansas, have property values per family only three-fourths of the average of the families that are not federally connected. On the other hand, the personnel of Cape Kennedy have drastically raised the per family property values in the area.

4. Federal installations of impermanent nature or with frequent personnel turnover may have either cheaper houses or more rental units than houses. This condition again tends to reduce the per family property values associated with federally connected families.

Rights of Employees in Moving Families

Military personnel and their families who are living on a base in military housing have little or no choice as to when they move. If the military man's family is living in the community, it is up to him whether they stay on. The military authorities, however, try to move families at a convenient time whenever possible, such as at the end of the school year.

A permanent civil servant living in the community theoretically has two years in which to have his household effects moved by the government. However, he often transfers at the government's convenience. A temporary civil servant has no tenure and receives no assistance in job placement. He is simply terminated, and may return to the work force.

There has been an increase in the concern and in the feeling of responsibility of the Department of Defense toward people whose jobs are eliminated because of phase-outs. This increase started around 1957 when some of the larger phase-outs took place and adverse impacts began to appear. By the time some phase-outs were announced in March 1961, a placement program had been worked out with the aim of guaranteeing everyone a chance to get another civil service job. This placement program proved so successful that some bases were able to phase out ahead of time.

Federal legislation that has been passed authorizes the Secretary of Defense to purchase an employee's home if the value has dropped substantially because of a phase-out. This legislation also provides a temporary suspension of payments on FHA and VA mortgages for an unemployed civil servant who is unable to meet his obligations. The legislation still awaits funds from Congress. In November 1965, the Secretary of Defense presented to the Bureau of the Budget the budgetary needs for implementing the legislative program.

Federal Installation Location

One important aspect of federal installation location is whether it is located inside or outside of the school district under consideration. If it is inside the district, the alternative use of the "former" federal land after phase-out of the federal activity could, in the long run, provide revenue to compensate for the problems caused by the loss in federal entitlement.

If a federal installation outside the school district is phased out, PL 874 payments are eliminated. Regardless of what subsequent nonfederal disposition is made of the federal assets, the source of revenue to the district is permanently removed. If the ex-federal children continue to attend district schools (e.g., their parents remain in the district), revenues must be raised from remaining residents and existing commercial property.

In a so-called "bedroom community" (i.e., predominately residential) if the families remain, or if their residences are quickly refilled with families having nonentitled students, then the school district can turn only to residents' taxes for school revenue. After phase-out, it has essentially the same ADA and tax base, but not the benefit of the PL 874 payments. The community must then make a greater contribution, or accept a decrease in the quality of education. One can argue with some justification that the "bedroom community" should not have received full federal entitlement in the first place.* However, since the payments have been made, and since their loss results in a drop of revenue per ADA, the school district is confronted with immediate problems. This case is one variation of the "windfall" problem already discussed.

Timing

The timing of a phase-out is a critical factor in determining the magnitude and number of problems caused. The length of forewarning and the duration of phase-out have interrelated effects.

If, for example, the starting date of the phase-out is known two years in advance, school district officials can take action that greatly attenuates the impact. The current and following year's budgets can be adjusted for the change in projected enrollment. Expansion plans can be curtailed or eliminated, cash reserves can be built up, and future contracts can be written to reflect the reduced requirement for services. With adequate forewarning, school officials can carefully control new hiring so that if reductions are required, they can come from normal attrition. The greater the forewarning the better, but the point at which warning is critical for the following school year is usually in February or March. At this time, plans and the budget are set, and teachers' contracts are signed. If warning of a reduction in enrollment for the following school year comes after February or March, excessive expenditures are likely to result.

The duration of phase-out is equally important. Even if warning of a major cutback is minimal, a gradual phase-out over, say, a 3 or 4-year period will greatly ease the burden. However, if the school system must absorb the total loss over one year, the degree of impact is markedly increased.

The interrelationship of phase-out duration and length of forewarning is clearly shown in the worst case: the greatest financial burden occurs in a school district when there is little or no forewarning and when the phase-out is only one year.

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* The previous SRI study of PL 874, p. 93, recommends that a district receive federal compensation for 3(b)2 pupils in proportion to the percentage of its workers that typically remain within the school district for work.

Economic Viability and Structure of the Community

The economic character of a community is a major determinant of its ability to overcome the problems caused by a federal phase-out. For example, the nature and level of the tax base are important. If a significant portion of the tax base of the school district consists of valuable and prospering industrial property, an increase in commercial tax rates to offset the financial loss from phase-out will impose little hardship. At the other extreme, any loss in revenue in a low-income bedroom community may be difficult to offset, and the loss further reduces an already marginal educational effort.

In addition to the nature and level of the tax base of the local community, the economic direction of the entire area surrounding the school district is important. If the surrounding area is expanding greatly, other economic factors in the community may well offset the negative influence of the federal phase-out. If the economy is static or contracting, the problems for the school district may be well beyond the capacity of the community to solve without outside help.

Managerial Ability of School Administrators and Community Leaders

The level of ability of school administrators can markedly affect the fiscal soundness of the district when a phase-out occurs. Their ability also determines the relative effectiveness of the school district's responses to problems caused.

The best possible situation for coping with a federal phase-out is afforded by the school district superintendent who has produced a school system that has a modest and manageable debt, sound annual budgets, ample equipment, up-to-date plant maintenance, and no large contractual commitment extending into the future. When warning of the phase-out comes, such an administrator can take further steps to minimize impact. The amount he can do will depend largely on the amount of forewarning he receives. His personal leadership can greatly influence the kind of cooperation he receives from his staff.

The main task in adjusting to phase-out is to start cutting current and projected costs without affecting quality. Perhaps some contracts can be renegotiated to reflect reduced future requirements. Maintenance expenses of future excess physical plant can be held to a bare minimum. Staff members likely to be affected can be given early enough warning so that they can make alternative plans, and then can be released when they are ready and their services can be spared. It is important to build up cash reserves as much as possible. With the uncertainties of the future, such reserves can provide flexibility, and can be used later where they are most needed.

Federal Responsibility to Districts Facing Phase-Outs

Responsibility in Phase-Out vs Responsibility in Expansion

In a previous study, SRI has shown that the federal government has a clear-cut obligation to communities when it establishes an installation on tax-exempt property. The obligation arises because a burden is imposed on the school district to educate federally connected pupils, without receiving funds from the normal property tax channels. Payment under PL 874 is made to compensate for this burden. No such clear-cut obligation can be demonstrated for payment to districts experiencing phase-out. On the one hand, it may be claimed that the federal government can close an installation without concern for the effects on the community. The other extreme would be to claim that the federal government has an obligation in perpetuity to support a level of education attained prior to phase-out, when the phase-out causes declines in revenues per pupil. A reasonable compromise to these conflicting views is that the federal government should make payments for a transitional period to assist the school district in moving from one level of revenue and expenditure to another, or to provide relief for temporary losses in revenue. It is also equally reasonable that the federal government should assume only a portion of the transitional costs, and that the state and local agencies will share in the costs of transition.

A possible exception to short run assistance is the case of school districts confronted by long term debts. There may be some claim for longer run payment to assist with debt service when the federal withdrawal has created excess school building capacity and when that capacity has been built with local money because of capacity needs created by the federal presence. Such payments would be made only until such time as the excess capacity was eliminated through normal increases in enrollment or through retirement of obsolete capacity. To the extent that additions to capacity were financed by PL 815 funds, there is no special obligation for the federal government to provide funds for debt service upon withdrawal.

In general, phase-out of the installation can create financial problems for a school district in five ways: (1) immediate loss of PL 874 funds, (2) decline in local revenues received from 3(b) families, (3) decline in revenues due to income multiplier effects, (4) decline in state revenues, or (5) increase in per pupil costs due to decline in enrollment. A loss of PL 874 funds does not create any problem if the rate of payment conforms to the intent of the law, just compensating the district for its local expenses not met through normal revenues, and if the federal pupils connected with the phased-out facility leave the district. However, if this condition occurs suddenly, there is apt to be an increase in costs per pupil for the remaining pupils, because of inability to adjust total costs rapidly.

As noted previously, withdrawal of federally connected pupils in states with equalization aid can result in a decline in the aid on a

per pupil basis. But this would seem to be a problem in the relation between the state and the local district, and need not concern the federal government.

Income multiplier effects and reduced local revenues because of departure of 3(b) families are uncertain in terms of likelihood of occurrence, amount, or timing. To cushion these effects, it would be necessary to measure their occurrence in individual districts. In a relatively stable community that is not experiencing economic growth in other respects, there could be a long run deterioration in the economic position of the community and in the revenue structure of the school district. There is, however, no basis in the present law for placing upon the federal government, through the Office of Education, a responsibility for permanent support to such a community. Such support really should be transferred to agencies concerned with economic development. The problem is fundamentally related to the lack of viable growth potential in the community and not to the withdrawal of the federal installation. Thus, again, the Office of Education responsibility deriving from phase-out of an installation can only be considered transitory, even if the problem is long run.

Responsibility Resulting from Windfall Under PL 874

If payments under PL 874 are in excess of the amount needed to equal the normal revenue receipts per pupil, then withdrawal of these funds is an even greater financial hardship. These windfall payments are mostly the result of the provision permitting payment at minimum rates equal to one-half the state or national costs of education. Such a provision is an expressed part of the law; the fact that they are windfall payments to the district is not at issue. The district undoubtedly has its expenditure pattern adjusted to these receipts; therefore, their withdrawal creates the same kind of financial problem as if the payment rate was without windfall. Thus, any transitory payments should not discriminate between PL 874 payments that are in excess of the costs of education for the federally connected pupils and those that are not.

Responsibility Related to Need

Since payments to compensate for phase-out problems should be transitory in nature, they need only be made where an actual problem exists. If the community is expanding in enrollments and revenues, and the installation phase-out does not result in revenues per pupil declining, or costs per pupil rising, then clearly there is no transitory problem and no need for federal assistance. Note that, unlike payments under PL 874, payments under phase-out are not for a service rendered, but are strictly aid payments. Thus, they should be made only where a need is demonstrated, or can reasonably be expected to occur if remedial action is not taken.

In general, a need can be expected to arise under the following conditions: (1) the phase-out occurs without previous warning, when obligations have been incurred by the district on the expectation of a larger enrollment and PL 874 payments; (2) the phase-out causes a sharp change in revenue and/or enrollment; (3) the federal revenue is such a large proportion of district revenues and enrollment that even a gradual change, with warning, causes large proportionate changes for the district that cannot be readily accommodated; or (4) the district is stable (or declining) in all other respects, so that there are no usual annual increases in nonfederal revenues to help offset the decline in PL 874 payments. Determination of the levels at which a problem emerges is the subject of the quantitative sections of this report (see Chapter V).

Expectations of Reasonable Response from Nonfederal Agencies

If the federal government did not undertake to ease the burden of installation phase-out, any revenue or cost problem would be met in some fashion by the local or state agencies. Tax rates would be increased, state aid payments would be increased, or costs would be somehow reduced. The fact that the federal government does undertake to ease the pain of transition does not imply that the local and state agencies are relieved of responsibility. The relative roles of the various government levels cannot be specifically decided on the basis of equity. Increases in tax rates by amounts corresponding to long run trends of rising costs of education in the state can certainly be expected. Cost reductions that do not impair the educational program of the district can also be expected. Another way of viewing the situation is to require that the local district absorb reductions that do not exceed a certain percent each year. This possibility is discussed later in the report.

For payments in excess of one year, the payments should decline in each succeeding year to be consistent with the principle that the payments are aids for transitional purposes. By its nature, transition implies a gradual adjustment from one level to another; part of the transition should be made in each year, requiring lower aid payments from the federal government in each successive year.

IV PAST PHASE-OUTS AND THEIR EFFECTS ON SCHOOL DISTRICTS

Nature of the Installations

Although as shown in Chapter III, many branches of the federal government have been involved in phase-outs, the great majority of the phase-outs have been military. Between 1957 and 1964, the Department of Defense had about 824 installation phase-outs. Table 2 lists these phase-outs, by year and by major type. All such phase-outs were examined in deriving a list of installations that offered the greatest relative potential for having significantly affected school districts since the early 1950s. This research phase is discussed in more detail in Appendix B.

At some federal installations, events affecting school districts cannot be considered as "normal" installation phase-outs; such cases were eliminated from the sample of school districts analyzed in this report. Three special cases are given as illustrations.

1. Between 1961 and 1962, Crystal Union School District in Suisun City, California, experienced a drop of 980 3(a) students and a drop of about 1,000 in total ADA. The drop, however, was not due to phase-out of Travis Air Force Base but rather to the fact that Travis Air Force Base was organized into its own school district.

2. There was a drop of about 400 federal pupils at the Tillamook County School District, Oregon, in 1962, and the total ADA was only about 2,200 at that time. Again, the drop was not due to phase-out of the Tillamook Naval Air Station but rather to a decision by the Office of Education that the Air Station was not federal property in the sense defined in PL 874.

3. The town of Page, Arizona, was created in 1957 by the Bureau of Reclamation to provide residential and commercial facilities for the Glen Canyon Dam construction workers. The town is almost entirely owned by the Bureau. There have been significant decreases in federal and total ADA due to the phase-out of the construction, but the Page Accommodation School is not incorporated and the school is not districted. No local school taxes can be levied, and the school is ineligible for county school equalization aid. The Bureau is responsible for meeting budget deficits, and financing under PL 874 does not directly apply.

Table 2

TYPES OF MILITARY INSTALLATION PHASED OUT
1957-1964

Type of Installation	1957	1958	1959	1960	1961	1962	1963	1964	Total
Air force base	11	8	7	6	9	7	5	4	57
Air force station	6	3	3	7	5	1	3	1	29
Airport	5	6	2	5	--	--	1	1	20
Army base	1	4	3	--	10	7	5	20	50
Arsenal	2	2	--	--	4	2	--	2	12
Auxiliary field	2	9	2	3	6	2	--	1	25
Building	--	--	--	--	3	2	4	6	15
Contract office	--	--	--	--	--	--	--	29	29
Housing	--	1	1	2	8	6	7	2	27
Hospital	2	--	2	2	--	--	--	--	6
Naval air station	1	6	--	2	3	3	2	6	23
Navy station	--	--	2	1	1	--	1	1	6
Nike site	--	--	--	--	5	7	30	7	49
Manufacturing and assembly plant	4	12	1	6	37	20	8	9	97
Ordnance works	8	3	3	3	4	6	10	2	39
Outlying field	11	4	--	--	--	--	--	--	15
Radar site	--	--	--	--	--	--	17	1	18
SAGE and radio direction center	1	--	--	--	--	1	6	1	9
Storage activity	8	5	3	3	6	4	3	1	33
Supply depot	2	7	2	1	14	10	2	11	49
Unimproved land	--	--	--	--	6	3	7	1	17
Other	8	12	13	17	41	31	42	35	199
Total	72	82	44	58	162	112	153	141	824

Note: "Other" includes a total of 70 types of facility, including bomb target ranges, port facilities, DEW sites, annexes, reserve training centers, Texas towers, gap filler sites, military reservations, air force ranges, harbor defense units, barracks, naval air facilities, construction battalion centers, missile sites, and degaussing stations.

Source: Stanford Research Institute from lists of closings, reductions, and consolidations obtained from Dept. of Defense.

Conditions of Federal Involvement Leading to Phase-Out Problems

Of the approximately 10,000 districts that received entitlement under PL 874 in the period 1952 to 1964, about 2,000, or 20%, experienced federal installation phase-outs. Data were gathered on approximately 900 of these districts in this study.* To be considered as experiencing a phase-out, a district merely had to receive entitlement for some pupils attached to an installation being closed or significantly reduced. In only a few of these districts, however, could the impact from the phase-out have been sufficiently large to create financial problems. There were six main reasons for the absence of significant impact in most districts:

1. Although the number of installations phased-out was large, most of the installations were relatively small and affected few students.

2. Prior to the phase-out, most of the districts received only a small percentage of their current revenues from PL 874.

3. Many districts received entitlement based on students from several installations, and phase-out of any single installation did not eliminate all of the entitlement.

4. Most of the larger installations affected many different school districts, which minimized the effect of a phase-out on any one district.

5. Most of the school districts experienced large population growth from other sources, which overshadowed changes in federal activity.

6. In many cases, other government activities were expanding in the same areas that had phase-outs. The following paragraphs discuss all of these reasons.

Small Installations

Of the approximately 1,000 federal installations phased out since the early 1950s, most were relatively small. This is illustrated by Table 2 in the previous subsection, where a significant proportion of the total of 824 installations are seen to be airports, auxiliary fields, buildings, contract offices, NIKE sites, outlying fields, radar sites, and "other"--all relatively small in terms of the personnel that would be connected with them.

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* See Appendix B for a discussion of the procedures used to select districts for study.

Net Entitlement as a Percent of TCE

Table 3 shows the ranking according to net entitlement as a percent of total current expenses of education (TCE) for districts experiencing phase-outs and experiencing actual decline in federal ADA. Only 16 percent of the districts received more than 10 percent of their expenses from entitlement.* About two-thirds of the districts received 5 percent or less of current expenses from entitlement. Since current expenses of education per ADA have been rising nationally at about 5 percent per annum, elimination of entitlement represents about one year's increase in cost for these districts.

Number and Relative Importance of Installations

Table 4 shows, for the districts experiencing phase-outs, the number of installations contributing to entitlement prior to the phase-outs. Almost one-half of the districts received entitlement from seven or more installations. Obviously, where there are several installations, a phase-out in one does not eliminate all of the entitlement. For example, the Richland and Pasco School Districts in Washington were affected by the AEC Hanford Plant phase-out. However, because there were about 38 other installations in the area creating entitlement in the school districts, the one phase-out was hardly felt.

The converse of the above is that where more than one of the several installations in an area have phase-outs concurrently or within a few years of each other, the results are additive. There are several examples of this situation; three are briefly described below.

1. New Albany, Indiana, was affected by phase-out of the Charlestown Ordnance Plant, starting in 1955, and then by phase-out of a federal housing project, starting in 1957.

2. Berea, Ohio, felt an impact from phase-out of the Berea Homes Federal Housing Project, starting about 1954, as well as from phase-out of Cleveland Tank Automotive a few years later.

3. In 1962, Martin Aircraft Company began phasing out a very large Titan missile construction project near Moses Lake, Washington. A few months later, there was a significant reduction in personnel at Larson Air Force Base from phase-out of a SAGE installation and a KC-135 USAF tanker aircraft unit. Among the districts affected was Moses Lake School District #101.

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* The distribution for all entitled districts in 1960 was very similar, indicating that districts experiencing phase-out are not different in this respect from all entitled districts. See SRI study, op. cit., Vol. I, Table 3, pp. 34-6.

Table 3

RANKING OF NET ENTITLEMENT AS A PERCENT OF TCE FOR A SELECTED SAMPLE OF SCHOOL DISTRICTS AFFECTED BY PHASE-OUTS

Percent of TCE	Number of School Districts	Percent of Total School Districts	Cumulative Percent of School Districts
<0.5%	2	0.6%	0.6%
1	46	12.7	13.3
2	67	18.4	31.7
3	44	12.1	43.8
4	41	11.3	55.1
5	34	9.4	64.5
6	23	6.3	70.8
7	19	5.2	76.0
8	11	3.0	79.0
9	11	3.0	82.0
10	6	1.6	83.6
11	12	3.3	86.9
12	5	1.4	88.3
13	5	1.4	89.7
14	1	0.3	90.0
15	3	0.8	90.8
16	6	1.6	92.4
17	1	0.3	92.7
18	3	0.8	93.5
19	5	1.4	94.9
20	--	--	--
21	1	0.3	95.2
22	3	0.8	96.0
23	4	1.1	97.1
24	--	--	--
25	2	0.6	97.7
26	--	--	--
27	1	0.3	98.0
28	1	0.3	98.3
29	1	0.3	98.6
30+	5	1.4	100.0

Source: Stanford Research Institute.

Table 4

NUMBER OF INSTALLATIONS PER SCHOOL DISTRICT INVOLVED IN PL 874 CLAIMS 1963

Number of Installations	Number of School Districts Claiming	Percent of Total School Districts	Cumulative Percent of of Total School Districts
1	36	5.1%	5.1%
2	46	6.5	11.6
3	59	8.4	20.0
4	86	12.2	32.2
5	65	9.2	41.4
6	69	9.8	51.2
7	57	8.1	59.3
8	72	10.2	69.5
9	50	7.1	76.6
10	64	9.1	85.7
11	47	6.7	92.4
12	21	3.0	95.4
13	17	2.4	97.8
14	3	0.4	98.2
15	1	0.1	98.3
16	1	0.1	98.4
17	2	0.3	98.7
18	2	0.3	99.0
19	1	0.1	99.1
20	2	0.3	99.4
21	1	0.1	99.5
22	1	0.1	99.6
23	--	--	--
24	--	--	--
25	1	0.1	99.7
Total	704	100.0*	100.0*

* Does not add because of rounding.

Source: Stanford Research Institute.

Table 5 lists the percentage of total federal ADA accounted for by one to three of the installations against which a district's largest claims were made in 1963. In only 30 percent of the school districts did one installation account for 80 percent or more of the federal ADA. In 60 percent of the school districts, three installations accounted for 80 percent or more of the federal ADA.

Number of School Districts Affected by Large Installations

Each of a significant number of the larger installations affects a very large number of school districts. Consequently, the phase-out impact of these large installations is spread among the many school districts, minimizing the effect on any one district. An example is the Redstone Arsenal in Alabama, which has about 100 school districts claiming federally connected students.

Urban Population and Growth

In the large urban areas where populations and school districts are usually large, the proportion of federal ADA to total ADA tends to be relatively small. This fact and the relatively high growth rates in urban areas as against rural areas tend to minimize the impact of phase-outs.* An example of both factors working together is the San Francisco Unified School District in California, which had an ADA of about 80,000 in 1955-56 when about 1,200 in federal ADA was lost because of the phase-out of some Navy housing. The large size of the district and the fact that its ADA was expanding at an average annual rate of about 3 percent completely overshadowed the phase-out.

Expansion of Other Federal Facilities

In many cases, the potential impact of a phase-out was counterbalanced by the expansion of an existing federal installation, or the creation of a new one. An example is in Richland and Pasco, Washington, where the reduction in the Hanford AEC Plant was balanced by expansion in other activities, such as the huge Columbia River Basin project. Another example is in Berea, Ohio, where the phasing out of cleveland Tank Automotive was offset by increased employment at a NASA facility as well as at other defense production plants.

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* According to the Statistical Abstract of the United States, 1965, Table 20, U.S. Department of Commerce, Bureau of the Census, there was a population increase of about 29 percent in the urban areas between 1950 and 1960, whereas there was a decrease of 1 percent in rural areas.

Table 5

PROPORTION OF TOTAL FEDERAL ADA ACCOUNTED FOR
BY ONE, TWO, OR THREE INSTALLATIONS

Percent of Total Federal ADA	One Installation			Two Installations			Three Installations		
	Number of School Districts	Percent	Cumulative Percent	Number of School Districts	Percent	Cumulative Percent	Number of School Districts	Percent	Cumulative Percent
90-100	143	20.2%	20.2%	232	34.2%	34.2%	294	46.6%	46.6%
80-89	71	10.0	30.2	127	18.7	52.9	133	21.1	67.7
70-79	79	11.2	41.4	96	14.2	67.1	80	12.7	80.4
60-69	86	12.1	53.5	93	13.7	80.8	63	10.0	90.4
50-59	99	14.0	67.5	66	9.7	90.5	38	6.0	96.4
40-49	92	13.0	80.5	39	5.8	96.3	15	2.4	98.8
30-39	77	10.9	91.4	15	2.2	98.5	7	1.1	99.9
20-29	46	6.5	97.9	9	1.3	99.8	1	0.2	100.1
10-19	15	2.1	100.0	1	0.1	99.9	--	--	
0-9	--	--		--	--		--	--	
Total	708	100.0%	100.0%	678	100.0%*	100.0%*	631	100.0%*	100.0%*

* Does not add because of rounding.

Source: Stanford Research Institute.

Changes in ADA and Entitlement in Affected Districts

In a sample of 722 school districts affected by phase-out, it was found that in 179, or 25 percent, of these districts, the decline in federal ADA was not significant, because: (1) the phase-out did not result in a significant drop in entitled ADA--either the reduction in force was small, or there were other federal installations in the area that were growing; or (2) federal ADA was too small a percent of total ADA to make any difference, even if the proportionate decline in federal ADA was large. See Table 6.

In about 62 percent of the cases where there were declines in 3(a) pupils, the declines were followed at some later date by a growth in the number of 3(a) pupils. In about 57 percent of the cases where there were declines in 3(b) pupils, the declines were followed by increases. These declines followed by growth indicate, to some extent, the temporary nature of the declines, because of subsequent growth in the installations phased out, or because of growth in other installations in the area.

Table 6

EFFECT OF PHASE-OUT ON 722 SCHOOL DISTRICTS

	Total ADA		
	Declined	Did Not Decline	Totals
Expected Relative Impact of Federal Phase-Out*			
Significant	123	420	543
Negligible	17	162	179
	140	582	722

* Cutoff points for significance were chosen by judgment as follows: federal ADA prior to the phase-out had to be more than 5 percent of total ADA, and the phase-out had to result in a decline in federal ADA of at least 25 percent if federal ADA was between 6 and 15 percent of total ADA, and a decline of 10 percent if federal ADA was more than 15 percent of total ADA.

The problems caused by significant decline in entitlement may be more or less severe because of trends in other sources of revenue and in ADA. Since the impact on entitlement may be cushioned by increasing entitlement per pupil for any remaining federal pupils in the district or by payments under Section 3(f), another indication of potential problems may be shown by the ratio of the decline in federal ADA to total ADA. See Table 8. In this case, a decline in federal ADA of more than 0.10 is considered the symptom of a potential financial problem, and from the table, 33 percent of the districts had one-year declines in federal ADA exceeding this level.

From this historical investigation, we conclude that for most districts previously experiencing some phase-out, serious financial difficulty was rare, either because federal entitlement was not a significant revenue factor in the first place, or because the phase-out did not significantly reduce federal involvement. However, a minority of districts, possibly one-fourth, had sufficient federal involvement and sufficient change in federal entitlement because of the phase-out to have a potential revenue problem. A closer investigation of 45 districts, reported in the next chapter, indicates the conditions under which financial problems of different types were actually generated.

In 77 percent of the 543 districts in which there was a significant decline in federal ADA, there was no decline in total ADA. The absence of decline may mean either that the families of the ex-federal pupils remained in the district, or that other forces were acting to cause growth in total ADA, counteracting the negative influence of the phase-out. Nevertheless, districts with significant declines in federal ADA were more likely to have declines in total ADA than districts without significant declines in federal ADA.*

In 23 percent of districts with declines in federal ADA, there was a decline in total ADA. In more than half of these cases, the decline in total ADA was followed by growth, indicating that the effect of installation phase-out tended to be temporary.

Most of the phase-outs were completed in one or two years. In about one-third of the districts, however, the blow was cushioned by the fact that the decline in federal ADA was stretched out over 3 or more years.

If entitlement is a very small portion of total revenue, or if the decline in entitlement is relatively small, then it is unlikely that a decline in entitlement will create a financial problem for the district. On the other hand, if entitlement relative to the district's total expenditures on education is large, or if the decline is significant, then a financial problem for the district may emerge. These conditions are shown in Table 7; in 56 percent of the districts, the entitlement change in any year was never more than 0.05 of that year's total current expenditures on education. In only 23 percent of the districts was the decline in entitlement greater than 0.10 of the total current expenses prior to decline. Severe financial problems were probably confined to this group.

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* Application of x^2 test showed that declining ADA is statistically related to federal phase-out with better than a 99 percent degree of confidence.

Table 7

PROPORTION OF DISTRICTS EXPERIENCING VARIOUS MAXIMUM ONE-YEAR CHANGES IN ENTITLEMENT AS A RATIO OF TCE

Entitlement Change Relative to TCE*	Proportion of Districts (percent)
0.01-0.05	56.0%
0.06-0.10	20.6
0.11-0.15	7.6
0.16-0.20	6.0
0.21-0.25	2.2
0.26-0.30	1.3
0.31-1.00	5.3
Total	100.0%†

* $\frac{Ent._{t+1} - Ent._{t}}{TCE_{t}}$

where $Ent._{t}$ is entitlement in a given year t

$Ent._{t+1}$ is entitlement in the following year

TCE_{t} is total current expenses of education in in given year.

† Does not add to 100% because of rounding.

Source: Stanford Research Institute.

Table 8

PROPORTION OF DISTRICTS EXPERIENCING VARIOUS MAXIMUM ONE-YEAR CHANGES IN FEDERAL ADA AS A RATIO OF TOTAL ADA

Federal ADA Change Relative to Total ADA*	Proportion of Districts (percent)
0.01-0.05	41.7%
0.06-0.10	25.2
0.11-0.15	10.8
0.16-0.20	7.1
0.21-0.25	3.4
0.26-0.30	3.0
0.31-1.00	8.8
Total	100.0%

* $$\frac{\left(3(a) + \frac{1}{2}3(b)\right)_{t+1} - \left(3(a) + \frac{1}{2}3(b)\right)_{t}}{ADA_{t}}$$

where 3(a) is number of pupils under Section 3(a), PL 874
3(b) is number of pupils under Section 3(b), PL 874
t is a given year
t+1 is the following year.

To correspond to entitlements, the pupils under Section 3(b) are counted as half-pupils.

Source: Stanford Research Institute.

V FINANCIAL PROBLEMS OF SCHOOL DISTRICTS INVOLVED IN PHASE-OUTS

Method of Financial Problem Measurement

General Approach

Conclusions as to the financial problems created by past installation phase-outs are based primarily upon analysis of data obtained from 45 school districts in 24 states. These 45 districts are representative of those that should have received the greatest impact from phase-outs. The method of selecting this sample, and the types of data and the means for collecting them, are described in Appendix B. A summary of the data collected for these 45 districts, with conclusions as to financial problems created, is presented in Table 9. This chapter of the report is based mainly on the quantitative contents of Table 9. Qualitative information obtained by mail, telephone, and personal interviews is also included, where applicable.

Revenue Problem Measurement

Revenues include all receipts on a fairly recurring basis. The four types of revenue included in the present analysis are: state aid, local property tax, other local revenues (including county), and PL 874 net entitlements (other federal payments are not considered). Nonrecurring receipts, such as those from bond issues, are omitted. Revenue problems, both actual and potential, are classified as very small, small, moderate, and large, as defined in the explanatory notes for columns in Table 9. A potential problem is considered to exist if there is a decline in net entitlement unaccompanied by a proportionate drop in total ADA. An actual problem is considered to exist when there is an actual decrease in revenues per ADA and there is evidence that the decrease was due to the phase-out. The number of years duration of an actual problem, and the number of years after the drop in federal net entitlement before such a problem emerged were determined from the available data for the sample school districts, and are indicated in Table 9.

A potential or actual problem due to a phase-out does not necessarily arise because net entitlement decreases. Since a revenue problem arises only if revenue per pupil declines, changes in total ADA must be taken into account. If there is a decline in total ADA (see Column 10, Table 9) proportionately equal to the decline in revenue, there is no decline in revenue per pupil and no revenue problem. This is taken into account in

the following formula, which was used to determine potential revenue problems (PRP) on an annual basis:

If $ADA_{t+n} \leq ADA_t$, then

$$\frac{PRP}{N} = \frac{1}{N}\left[\frac{S_t + L_t + E_t}{ADA_t} - \frac{S_t \cdot \frac{ADA_{t+n}}{ADA_t} + L_t + LCR_t\left(3a + \frac{1}{2}\,3b\right)_{t+n}}{ADA_{t+n}}\right]$$

If $ADA_{t+n} > ADA_t$, then

$$\frac{PRP}{N} = \frac{1}{N}\left[\frac{S_t + L_t + E_t}{ADA_t} - \frac{S_t + L_t \cdot \frac{ADA_{t+n}}{ADA_t} + LCR_t\left(3a + \frac{1}{2}\,3b\right)_{t+n}}{ADA_{t+n}}\right]$$

where: E = net entitlement
L = local revenue
S = state revenue
LCR = local contribution rate for PL 874
3a = federal ADA, Section 3(a) pupils
3b = federal ADA, Section 3(b) pupils
ADA = total ADA
t = the year just prior to the start of the major portion of the phase-out
t+n = the year in which the major portion of the phase-out terminates
N = number of years duration of major portion of phase-out.

Expenditure Problem Measurement

Total current expenditures on education (TCE) include all normally recurring current expenses such as teachers' salaries, administrative expenses, payments for operating the school cafeteria, transportation costs, and workbook funds. Nonrecurring items such as permanent improvements and building construction (even where periodic payments are made into a fund for such purposes) are not included.

As was mentioned previously, in Chapter III, expenditure problems arise when there is a reduction in total ADA because of the phase-out, and TCE per ADA increases. This increase in TCE per ADA, however, must be the result of an inability to reduce costs proportionate to students, and not the result of having more money per student available and deciding to expend it. Where there is no decrease in ADA there can be no expenditure problem due to phase-out.

Column 1

Size of the school district at the time the phase-out commences:

Small: total ADA from 1 to 1,000
Medium: total ADA from 1,001 to 5,000
Large: total ADA over 5,000

Column 2

Location of installation--in or out of the school district being considered.

Column 3

Type of installation or activity:

A. Primarily a base for military operations
B. Federal housing
C. Construction of a federal facility
D. Primarily manufacturing, assembling, or storing
E. Other

Column 4

Percentage of total work force by type of employee residing in or moving to the school district at the time of commencing work at the federal installation. The total percentages for the four types equal 100 percent:

A. Housewives and underemployed
B. Military and permanent civil service
C. Others originating inside the school district
D. Others originating outside of the school district

Column 5

Amount of forewarning given the school district of the installation phase-out (based upon replies received through personal interview):

A. Short-inadequate--few months
B. Adequate--one year or more

Column 6

Percentage that federal ADA (3a + 3b) of all
of total ADA in the year just prior to the s

Column 7

Percentage of TCE that PL 874 net entitlemen
prior to the start of the phase-out.

Column 8

Percentage magnitude of the total decline in
whole phase-out period:

A. Using 3(a) plus 3(b) as a measure of fed
B. Using 3(a) plus $\frac{1}{2}$ of 3(b) as a measure o
start and the finish of the period

Column 9

The maximum percentage of expected revenue d
and the number of years duration of such a d
method of calculation.

Column 10

A reduction in total ADA lasting one year or

Column 11

Approximate total duration of phase-out.

Column 12

Community organization of the school district

A. Inside, or within 50 miles (commuting dis
large city,* and

1. Is predominantly residential or agric
some commercial or industrial activit

* A relatively large city is defined as one with a population of 100,000 or more with a strong commercial and/or industrial ba

EXPLANATORY NOTES FOR COLUMNS IN TABLE 9.

olumn 6

Percentage that federal ADA (3a + 3b) of all federal installations is of total ADA in the year just prior to the start of the phase-out.

olumn 7

Percentage of TCE that PL 874 net entitlement was in the year just prior to the start of the phase-out.

olumn 8

Percentage magnitude of the total decline in federal ADA over the whole phase-out period:

A. Using 3(a) plus 3(b) as a measure of federal ADA
B. Using 3(a) plus ½ of 3(b) as a measure of federal ADA at both the start and the fin of the period

olumn 9

The maximum percentage of expected revenue drop due to the phase-out and the number of years duration of such a drop. See Chapter V for method of calculation.

olumn 10

A reduction in total ADA lasting one year or more than one year.

olumn 11

Approximate total duration of phase-out.

olumn 12

Community urbanization of the school district:

A. Inside, or within 50 miles (commuting distance) of a relatively large city,* and

1. Is predominantly residential or agricultural, possibly with some commercial or industrial activity,

ith a strong commercial and/or industrial base.

2. Is a moderate to high level commercial center with so dential, agricultural, and industrial activity.

3. Has a moderate to high level industrial base, with so dential, agricultural, and commercial activity.

B. Not inside or within 50 miles of a relatively large city,*

1. Is predominantly residential or agricultural, possibly some commercial or industrial activity.

2. Is a moderate to high level commercial center with so dential, agricultural, and industrial activity.

3. Has a moderate to high level industrial base, with so dential, agricultural, and commercial activity.

Column 13

Economic growth status of the general area:

High: includes moderate to high growth in economic activity
Low: includes stagnant or low levels of economic activity

Column 14

Indicates whether the Purcell Amendment or PL 874 is applicabl

Column 15

Revenue (potential and actual) and expenditure problems create any. The problem is defined as very small (referred to as "sm the reduction in revenues (expected and actual) or expenditure due to the phase-out was less than 1 percent; small reduction 5 percent; moderate if the reduction was 6 to 10 percent; and the reduction was over 10 percent.

Column 16

Problem duration in years for both expenditure and actual reve problems.

high level commercial center with some resi-
ural, and industrial activity,

high level industrial base, with some resi-
ural, and commercial activity,

50 miles of a relatively large city, and

residential or agricultural, possibly with
r industrial activity,

high level commercial center with some resi-
ural, and industrial activity,

high level industrial base, with some resi-
ural, and commercial activity,

the general area:

to high growth in economic activity
or low levels of economic activity

Tell Amendment or PL 874 is applicable,

ual) and expenditure problems created, it
ned as very small (referred to as "small^{++}") if
(expected and actual) or expenditures per ADA
less than 1 percent; small reduction was 1 to
reduction was 6 to 10 percent; and large if
percent,

for both expenditure and actual revenue

Column 17

Problem time lag--i.e., the number of years after the phase-out began that actual revenue problems were created,

Column 18

Principal means by which a potential revenue problem was averted or reduced,

Column 19

Whether there was an actual allocation of funds under PL 874 Section 3(f) to help alleviate a potential problem: Yes or No,

Column 20

Whether a debt service problem was probably created--yes or no. (See Chapter III for the definition of a debt service problem and the conditions under which it arises.) If yes, then duration in years is indicated.

Column 21

Proportion of PL 874 change to total ADA change. The PL 874 change is measured in terms of the decrease of 3(a) plus $\frac{1}{2}$ 3(b) pupils over the period corresponding to a decline in total ADA. Where there has been no decline in total ADA, there is no ratio.

Column 22

Percent of debt service to total revenue in year just prior to start of major portion of phase-out.

State and SAFA Project Number	(1) Size of School District	(2) Location of Installation	(3) Type of Installation or Activity	(4) Percent of Employees by Type				(5) Adequate Fore-warning?	(6) Total Federal ADA as Percent of Total ADA	(7) Net Entitlement as Percent of TCE	(8) Percent Decrease		(9) Maximum Expected Revenue Drop and Duration		
				A	B	C	D				A	B	Percent	Years	
Alabama #20	Medium	Out	C	0%	0%	50%	50%	Yes	27%	5%	-11%	-11%	-1%	-1	
Arizona #701‡	Small	n.o.	C,D	n.o.	n.o.	n.o.	n.o.	n.o.	25	6	39	39	2	1	
Arkansas #13‡	Medium	Out	D	n.o.	n.o.	n.o.	n.o.	n.o.	22	10	90	90	-1	1	
Arkansas #23	Small	Out	D	30	10	30	30	Yes	40	10	100	100	5	2	
California #18	Small	In	B	n.a.	n.a.	n.a.	n.a.	Yes	63	23	81	79	9	2	
California #27	Large	In	B	n.a.	n.a.	n.a.	n.a.	Yes	71	23	37	51	2	5	
California #33	Medium	In	A	0	90	5	5	Yes	25	6	80	98	3	2	*
California #130	Large	Out	A	5	75	10	10	No	14	-1	10	10	-1	1	*
California #189‡	Small	In	A	n.o.	n.o.	n.o.	n.o.	n.o.	35	11	82	90	10	1	
California #501	Small	In	A	5	85	5	5	No	39	9	62	73	3	2	
Connecticut #1	Large	In	D	10	0	60	30	No	54	25	17	6	2	1	X
Indiana #107	Medium	In	B,D	20	10	30	40	n.o.	18	-1	68	68	1	6	X
Kansas #212	Medium	In	D	50	5	25	20	No	30	11	100	100	2	6	
Kentucky #34	Medium	In	C	0	0	50	50	Yes	57	27	88	88	12	2	
Kentucky #35	Small	In	C	0	0	50	50	Yes	28	8	70	72	2	-1	
Louisiana #204	Medium	In	A	5	80	10	5	No	40	12	90	91	11	1	
Louisiana #206	Medium	Both	A	5	80	10	5	No	12	3	100	100	2	2	
Maine #1007‡	Medium	Out	A	10	75	10	5	No	24	12	51	53	6	1	X
Michigan #1	Medium	In	B	n.a.	n.a.	n.a.	n.a.	Yes	74	16	100	100	13	1	
Michigan #3	Medium	In	B	n.a.	n.a.	n.a.	n.a.	No	55	7	95	95	2	3	X
Mississippi #2	Medium	In	E	20	0	50	30	No	46	16	100	100	5	3	X
Nebraska #17	Medium	Out	D	50	2	35	13	Yes	21	19	84	86	3	7	
New Jersey #6	Medium	In	B	n.a.	n.a.	n.a.	n.a.	No	39	8	17	36	-1	2	X
New Mexico #4	Large	Out	C	0	0	10	90	Yes	30	9	38	38	1	3	
North Carolina #502	Medium	In	A	0	100	0	0	Yes	11	-1	100	100	2	2	X
Ohio #2	Medium	In	B	n.a.	n.a.	n.a.	n.a.	Yes	26	9	55	55	-1	1	
Ohio #9	Medium	In	B,D	40	5	25	30	Yes	78	26	100	100	22	1	
Ohio #227	Medium	Out	D	60	0	0	40	Yes	22	7	80	81	1	5	X
Ohio #601	Medium	In	B	n.a.	n.a.	n.a.	n.a.	Yes	30	7	100	100	2	3	X
Oregon #20	Medium	In	A	0	68	32	0	No	20	12	56	71	9	1	
Tennessee #3	Large	In	A	10	70	10	10	Yes	33	5	38	38	2	1	
Tennessee #6	Medium	n.o.	C	10	0	45	45	Yes	30	6	45	45	2	1	
Tennessee #8‡	Medium	In	C	n.o.	n.o.	n.o.	n.o.	Yes	28	6	38	38	2	1	
Tenessee #20	Medium	In	C	20	0	40	40	Yes	22	8	57	59	3	2	
Texas #19	Large	In	D	0	0	25	75	No	46	14	38	37	2	3	X
Texas #41	Medium	Out	D	0	0	100	0	No	42	10	25	25	1	4	X
Texas #238	Medium	In	E	0	0	95	5	No	20	6	65	66	4	1	
Texas #453	Medium	In	E	0	0	12	88	No	29	9	87	87	8	1	
Utah #801‡	Small	Out	C	n.o.	n.o.	n.o.	n.o.	Yes	38	10	28	28	1	3	
Virginia #3‡	Medium	In	A	n.o.	n.o.	n.o.	n.o.	n.o.	19	7	100	100	6	1	
Washington #1‡	Large	In	E	n.o.	n.o.	n.o.	n.o.	Yes	17	-1	59	59	2	1	X
Washington #21‡	Medium	Out	D	n.o.	n.o.	n.o.	n.o.	n.o.	14	5	45	45	1	2	X
Washington #44	Large	In	A,C	0	19	0	81	No	55	19	32	24	-1	1	
Washington #48	Large	In	B	n.a.	n.a.	n.a.	n.a.	Yes	39	2	82	84	1	2	X
Wisconsin #401	Small	Out	D	25	0	25	50	Yes	29	16	85	83	3	-1	

* Only applied when total ADA decreased.
† Expenditures/ADA increased, but not due to phase-out.
‡ Districts not visited.
n.o.--data not obtained.
** n.a.--not applicable.
++ Very small.

Table 9

DATA SUMMARY RELATING TO FINANCIAL PROBLEMS RESULTING FROM PHASE-OUTS FOR 45 SELECTED SCHOOL DISTRICTS

(8)		(9)		(10)			(11)	(12)	(13)	(14)	(15)			(16)	(17)	
Percent Decrease		Maximum Expected Revenue Drop and Duration		Reduction in Total ADA			Approximate Total Duration of Phase-Out (years)	Community Organization	Area's Economic Growth	Purtell Amendment Applicable?	Financial Problems Created (Other than Debt Service)			Expenditure and Actual Revenue Problem Duration (years)	Actual Revenue Problem Time Lag (years)	Potentia
											Revenues		Expenditures			Increased Tax Rate
A	B	Percent	Years	0 Yr	1 Yr	+1 Yr					Actual	Potential				
41*	41*	1*	1			X	1	A-3	Low	No	--	--	+			
39	39	2	1	X			1	A-2	High	No	Small	Small		2	0	
90	90	4	1			X	6	B-2	Low	Yes	Small	Small	+	2	0	
100	100	5	2			X	3	B-1	Low	No	--	Moderate	+			
81	79	9	2			X	2	A-1	High	No	--	--	Large	2		
37	51	2	3			X	5	A-1	High	No	--	Small	Moderate	2		X
80	98	3	2	X			3	A-3	High	No	--	Small	--	--	--	--
10	10	1	1	X			1	A-1	Low	No	--	Small**	--	--	--	
82	90	10	1		X		1	A-1	High	No	--	--	Moderate	1		
62	73	3	2			X	2	A-2	Low	No	--	Small	Moderate	2		
17	6	2	1	X			1	A-2	High	No	--	Small	--	--		X
68	68	1	6	X			6	A-1	High	n.o.	--	Small**	--	--		X
100	100	2	6			X	6	B-1	High	Yes	--	--	Moderate	1		
88	88	12	2			X	3	B-1	Low	No	--	--	Moderate	2		
70	72	2	4			X	4	B-1	Low	No	Small	Small	Small	1&2	0&0	
90	91	11	1			X	2	B-2	High	No		--	Moderate	2		
100	100	2	2		X		4	B-1	High	Yes	--	--	Large	1		
51	53	6	1	X			1	B-1	High	No	Moderate	Moderate	--	1	0	
100	100	13	1			X	3	A-3	High	Yes	--	Large	Moderate	1		
95	95	2	3	X			4	A-1	High	Yes	--	Small	--	--		
100	100	5	3	X			4	A-2	High	Yes	--	Moderate				X
84	86	3	7		X		7	B-1	Low	No	--	Small	+			X
17	36	1	2	X			2	A-1	High	No		Small**		--		X
38	38	1	3			X	3	B-1	High	No	--	--	+	--		
100	100	2	2	X			2	B-1	Low	No	--	Small				
55	55	4	1		X		4	A-1	High	No	--	--	+			
100	100	22	1			X	6	A-1	Low	No	Moderate	Large	Moderate	1&1	0	X
80	81	1	5	X			6	A-1	High	No	--	Small	--	--	--	X
100	100	2	3	X			3	A-1	High	No	--	Small		--	--	X
56	71	9	1		X		1	B-1	Low	No		Moderate	+	--		
38	38	2	1		X		2	A-3	Low	No	--	Small	Small	1		
45	45	2	1		X		3	A-1	Low	No	--	--	+	--		
38	38	2	1			X	2	A-1	Low	No	--	Small	Small	1		
57	59	3	2			X	2	B-1	Low	No	--	--	Moderate	1		
38	37	2	3	X			3	A-3	High	No	--	Small	--	--	--	
25	25	1	4	X			4	A-1	High	No	--	Small**	--	--	--	
65	66	4	1		X		1	A-2	High	No	--	Small	Small	1		
87	87	8	1		X		1	A-1	High	No	--	Moderate	+	--		
28	28	1	3		X		3	B-1	Low	No	--	--	+	1		
100	100	6	1		X		2	A-1	Low	Yes	--	Small	Moderate	1		
59	59	2	1	X			2	A-3	High	No	--	Small	--	--	--	X
45	45	1	2	X			3	B-1	High	No	Small	Small	--	1	0	
32	24	4	1			X	2	B-1	High	No	Small	Small	Large	1&1	0&0	
82	84	1	2	X			2	A-3	High	No	--	Small	--	--	--	
85	89	3	4		X		4	A-1	Low	No	Small	Small	--	2	0	X

(15)		(16)	(17)	(18)					(19)		(20)		(21)	(22)
neral Created bt Service)		Expenditure and Actual Revenue Problem Duration (years)	Actual Revenue Problem Time Lag (years)	Potential Revenue Problem Mainly Covered by:					Section 3(f) Received		Debt Service Problem Created by Phase-Out		Ratio of PL 874 Revenue Change to Total ADA Change*	Debt Service as a Percent of Total Revenue
	Expenditures			Increased Tax Rate	Reassessment	Increase Assessment per ADA	Increase State Revenue per ADA	Increase ICR	Yes	No	Yes and Duration (years)	No		
										X		X	0.18	0 %
11		2	0							X	2		--	14.6
11		2	0							X		X	2.12	n.a.**
ate							X	X		X		X	--	n.a.
	Large	2								X		X	0.48	n.a.
11	Moderate	2		X	X	X			n.a.	n.a.		X	4.17	n.a.
11	--	--	--	--		X				X		X	--	n.a.
**	--	--	--				X			X		X	--	4.9
	Moderate	1								X		X	0.17	1.6
11	Moderate	2				X			X			X	1.40	7.4
11	--	--		X		X	X		X			X	--	8.3
**	--	--		X	X	X				X		X	--	n.a.
	Moderate	1								X		X	0.38	0.4
	Moderate	2								X		X	0.91	n.a.
11	Small	1&2	0&0			X				X	2		3.66	n.a.
	Moderate	2							X		2		0.98	6.9
	Large	1							n.a.	n.a.		X	0.81	7.9
ate	--	1	0							X		X	--	15.8
ge	Moderate	1			X	X	X			X		X	2.75	10.0
11	--	--			X			X		X		X	--	2.2
ate				X		X	X		X			X	--	9.1
11				X		X				X		X	1.24	0.2
**				X	X		X			X		X	--	3.1
										X		X	0.86	12.6
11						X	X			X		X	3.93	n.a.
										X		X	0.56	11.1
ge	Moderate	1&1	0	X					X			X	2.16	n.a.
11	--	--	--	X			X			X		X	--	n.a.
11		--	--	X		X	X			X		X	--	18.1
ate		--				X	X			X		X	1.01	13.3
1	Small	1					X	X		X		X	1.80	3.4
		--								X		X	0.17	n.a.
1	Small	1					X	X		X		X	1.49	5.8
	Moderate	1								X		X	0.78	6.6
1	--	--	--				X		X			X	--	9.0
**	--	--	--			X	X	X		X		X	--	8.2
1	Small	1			X		X			X		X	1.36	7.3
ate		--					X			X		X	6.60	n.a.
		1								X		X	0.71	7.7
1	Moderate	1				X	X			X		X	1.30	4.7
1	--	--	--	X		X	X			X		X	--	16.9
1	--	1	0				X			X		X	--	4.9
1	Large	1&1	0&0				X		n.a.			X	1.23	4.9
1	--	--	--			X		X		X		X	--	n.a.
1	--	2	0	X						X	1		2.19	17.2

Expenditure problems are classified as very small, small, moderate, and large, as defined in the explanatory notes to Table 9. The number of years duration of problems were determined from the data, and the results were indicated in Column 16 of Table 9.

There were general trends upward in costs of education in most areas, so that some increase in costs per pupil would be expected. These expected increases were considered in our analysis, in determining whether there was a problem: absolute changes found in the school districts were divided by average annual increases per pupil found in each state. Consequently, if an increase in expenditures per ADA is found in a particular year, but the state average increase is equal to or greater than this change, there is no actual expenditure problem for the purposes of this study.

A more exact statement of the method to determine the existence of, and measure the magnitude of, expenditure problems is given by the following formula:

For each phase-out year (t+1) in which $ADA_{t+1} < ADA_t$ and the $R_{t+1} < (1+k)R_t$,

$$\frac{\text{Expenditure Problem}}{\text{ADA}} = \frac{TCE_t}{ADA_t} - \frac{TCE_{t+1}}{(1+k)ADA_{t+1}}$$

if the latter term in brackets is negative, and where

ADA = total ADA
TCE = total current expenses of education
R = total recurring revenues
k = percent increase in state costs of education, from time t to t+1.

Debt Service Problem Measurement

The conditions under which debt service problems arise were listed in Chapter III. These conditions, in addition to the personal statements of school administrators in the field interviews conducted for this study, were considered in the data analysis in reaching conclusions as to whether significant debt service problems actually existed. Conclusions as to the existence of such problems, along with their duration in years, are shown in Table 9, Column 20.

There are a few states, such as Alabama, Kentucky, and Florida, that give money to school districts for debt service payments. These actions were taken into account in the analysis.

Potential vs Actual Revenue Problems

Of the 45 districts in the sample, 33 had potential revenue problems that were due to a phase-out. The other 12 could not have had such problems because total ADA fell at least proportionately to declines in federal net entitlement. The magnitudes of the 33 potential problems* are as follows:

Size of Problem	Number of Districts With Potential Problems
Very Small	4
Small	22
Moderate	5
Large	2
Total	33

Only 8 of the 33 districts with potential problems had actual problems (see Column 15, Table 9). Five districts had problems lasting for one year only, and 3 districts had problems lasting for two years. Of these 8 districts, 6 had small and 2 had moderate problems.

Table 9 indicates that there was no significant time lag between (1) the reduction in federal ADA and net entitlement, and (2) the creation of an actual problem. It may be concluded that actual problems seldom emerged as the result of phase-outs, and that when they did, they were short-lived. Even in the five example school districts given in Chapter III, which had severe economic depression effects on their communities because of the phase-outs, only one had an actual revenue problem, and it was moderate in size (Presque Isle, Maine). Two of the five could not have had revenue problems since their ADA decreased proportionately to the decrease in revenues (La. #204 and #206). Two others had potential revenue problems that were not actualized: Mojave, California (Project #501), and Astoria, Oregon (Project #20). In the former district, private firms moved quickly into the federal property and raised the tax base significantly. In addition, the school district received federal funds as a result of applying PL 874, Section 3(f). In Astoria, Oregon, state aid went up significantly; and even though the tax base did not increase to any great extent, assessed value per ADA did rise substantially because of a significant drop in total ADA.

Although the various factors tending to raise revenues are discussed in the following subsection, it will be seen that the two main forces are

* Each problem could last one or more years, depending upon the duration of the major portion of the phase-out. (See Column 9, Table 9.)

increases in state aid per ADA, and local property tax revenues per ADA. Table 10 illustrates this fact. The median value of the annual change in state and local revenues during the time of the major protions of the phase-outs was a minus 2.6 percent for districts whose potential problems were actualized; whereas, for districts whose potential problems were not actualized, the median value was a plus 14.7 percent. In other words, in most cases there was a significant increase in state and local revenues, and these did offset the negative revenue effects of phase-outs in most cases. However, regarding the increases in local revenue, the study found two factors that operated to prevent a rapid response in tax rates:

1. Since increases in assessed value are brought about by the activities of local tax administrators, there is considerable lag in placing such property on tax rolls and making reassessments in districts where such administrators are inadequately trained or overburdened because of lack of staff. In general, the poorer quality of administration was found in the rural districts.

2. Some states have regulations or organizational structures that prevent local tax effort from responding to the needs of the school district. For example, in Alabama, a school district must have permission of the state legislature to increase the existing level of millage. In Tennessee, since the school systems are a part of city and county governments, they have no taxing authority of their own. Hence, local responsiveness to changing educational needs is difficult to separate from other varying requirements of local government.

Factors Alleviating Potential Revenue Problems

There are six main factors that could, and quite often do, contribute to the alleviation of potential revenue problems. Such factors, when they were the main alleviating causes, are indicated in Table 9, Column 18. The six factors are: (1) increase in the local property tax rate; (2) reassessment of local property values; (3) increase in local property tax assessments per ADA, because of additions to the tax base; (4) increase in state revenue per ADA; (5) significant increase in the LCR for PL 874 payments; and (6) receipt of revenues based on PL 874 Section 3(f). The actual application of the six factors in the 33 sample districts that had potential problems is discussed below. In addition to these factors, receipt of phase-out funds from application of the PL 874 Purtell Amendment is also analyzed, even though such revenues are not true receipts resulting from an outside response to a phase-out. A few school districts receiving windfall PL 874 payments built up surplus funds that they used (or could have used) in balancing off losses in net entitlement receipts due to phase-outs. This is not considered to be a main factor, in most cases, in alleviating potential revenue problems, and is not included in the six factors analyzed here.

Table 10

RELATIONSHIP BETWEEN CHANGES IN STATE AND LOCAL REVENUE PER ADA AND ACTUALIZATION OF POTENTIAL REVENUE PROBLEMS

Changes in State and Local Revenues/ADA	Districts With Potential Problems	
	Actualized	Not Actualized*
< 0	6	0
0-4.9	0	2
5-9.9	0	7
10-14.9	1	5
15-19.9	0	5
20-24.9	1	4
25-29.9	0	0
30-34.9	0	2
35-39.9	0	1
40-44.9	0	1
50-54.9	0	1
Insufficient Data	0	1
Total	8	29

* Included are four districts that had actual problems in some years, and potential but not actualized problems in other years. The data in this column cover the years during which there were potential problems.

Source: Stanford Research Institute.

In most cases, the six factors operated in combination to alleviate potential revenue problems. Of the 29 districts where there were potential revenue problems not fully actualized, 5 had one factor, 14 had two factors, 8 had three factors, and 2 had four factors operating.

Increases in Local Property Tax Rates

In 11 of the 29 districts, an increase in the local property tax rates was one of the factors that precluded potential revenue problems.

Reassessments of Local Property Values

Only in 6 of the districts was reassessment of local property values listed as a major factor in alleviating potential revenue problems. This factor is therefore very unresponsive to the financial needs of a school district, for reasons mentioned above.

Increases in Local Property Assessment Values per ADA

In most of the districts in the sample, property assessments (tax base), due to new properties being placed on the tax rates, rose throughout the years of the phase-outs, as well as subsequently. These rises were mainly due to the generally expanding economy and population growth prevalent throughout the United States. Only in those districts where the local economy was significantly depressed was there a decline in assessed value, but the decline was usually of short duration. One reason for the increasing values in some districts was that the federal installation became part of the tax base. When federal housing projects and manufacturing and assembling plants are sold to private owners, the property fairly quickly gets onto the tax rolls. An example was in Renton, Washington, where Boeing purchased from the federal government the land and factories it had been using all along. The new assessed valuation under private ownership produced more tax money than PL 874.

Table 9 shows that of the 29 districts having potential revenue problems, 15 or over half had significant increases in assessed value per ADA. Thus, normal economic growth forces tended, in most cases, to help neutralize the impact of phase-outs.

Increased State Aid Program Revenue per ADA

Increased state revenue per ADA was by far the most common factor helping to alleviate potential revenue problems: 20 out of the total of 29 districts listed this factor (see Table 9). As discussed in Chapter III, such increases would not be expected when phase-out has resulted in increased assessed value or increased wealth per pupil. This viewpoint, however, considers changes only in pupils or in district resources, but omits dynamic factors--changes in the aid formula itself, increases in the per pupil level of state support, and the effects of lagged variables. And it is these factors that are primarily responsible for increasing per capita aid.

Table 11 summarizes the probable reasons for increased state aid per ADA in the 20 districts. In six states, aid is given largely in flat grant form; the flat per pupil allotments were increased, over the years examined, because of total fund growth. One state changed its whole formula, and as a result, its payments. Five states with equalization formulas raised their support levels and hence the mandated per pupil expenditures. And three states employed lagged variables, thus postponing by one or two years any reaction to changes in local conditions. In one case, a change was effected through offsetting PL 874 funds in the state aid formula.

Because of the strong tendency of most states to increase per pupil assistance, it is reasonable to expect that state aid will continue in the foreseeable future to be a major force alleviating potential revenue problems.

Increases in the LCR

There have been gradual increases in the Local Contribution Rate (LCR) in most years and for most districts since the inception of PL 874. However, these "normal" increases cannot be classified as having been a main factor in alleviating potential revenue problems mainly because of the number of federal pupils reduced by the phase-out. However, in 1957, there was a drastic increase in the LCR, which more than doubled in many cases. These increases were the result of adding, to the options available in setting the LCR, the use of one-half the national average.* These options and a more detailed discussion of the LCR are contained in the previous SRI study on PL 874.

In the sample of districts represented in Table 9, an increase in LCR was a main factor in alleviating or minimizing problems in only 6 districts of the 29 that had potential revenue problems not fully actualized. Since such a large increase is needed before increased LCR can become a main factor, since the increase in 1957 was a one-time event, and since increases of such magnitude probably will not occur in the future, LCR variation can be eliminated as a future principal minimizing factor.

Application of PL 874 Section 3(f)

A general description of Section 3(f) was given previously, in Chapter III. Theoretically, Section 3(f) appears to offer a solution for most problems that result from impact due to federal installation phase-outs. However, the Section does have the limitations discussed in Chapter II.

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* In the first year of this change, the option was one-half the average under PL 874. In the next year, it was changed to one-half the national average.

Table 11

PROBABLE PRINCIPAL REASONS FOR INCREASED STATE AID PER PUPIL IN SAMPLE DISTRICTS

District	Aid Program Largely Flat Grant, Which Increased	New Formula	New Equalization Support Level	Lagging of Variables in Calculations	Offsetting Formula
Arkansas #23			X		
California #130					X
Connecticut #4	X				
Michigan #1			X	X	
Mississippi #2				X	
New Jersey #6				X	
North Carolina #502	X				
Ohio #227		X	X		
Ohio #601		X	X		
Oregon #20	X				
Tennessee #3			X		
Tennessee #8			X		
Texas #19	X		X		
Texas #41	X		X		
Texas #238	X		X		
Texas #453	X		X		
Virginia #3	X				
Washington #1	X				
Washington #21	X				
Washington #44	X				
Total	11	2	10	3	1

Source: Stanford Research Institute.

Seven districts out of the sample included in Table 9 claimed and received funds under Section 3(f). In 6 of the 7 districts, Section 3(f) payment was one of the factors that prevented actual revenue problems. One claim covered an expenditure as well as a debt service problem, and three claims covered expenditure problems as well as potential revenue problems. Two of these latter claimants were still left with actual revenue problems even after receiving Section 3(f) revenues.

In the field interviews conducted for this study, we found that nearly all school superintendents were familiar with Section 3(f). However, certain aspects of their knowledge and attitudes affected the receipt of Section 3(f) revenues. School superintendents, in general, were found to have little understanding of what constituted a legitimate case for a claim under Section 3(f). The major questions were: "What is a substantial change?" "What are reasonable economies?" and "What is inadequate forewarning of the phase-out?" They seemed to know of no guidelines to the criteria used in deciding upon applications made under Section 3(f). Claims were usually made upon the advice of either state educational representatives or local Congressmen. In somewhat less urgent cases, a claim may or may not have been made, depending upon the attitude of the school administration and particularly on its awareness of the provisions of PL 874. There appeared to be no knowledge of what constituted "standard practice" in these cases. As an illustration of this point, a superintendent related his experience in a "less than critical" case. In this federal phase-out, at least two other school districts were affected, though somewhat less than his own. They made Section 3(f) claims, and received funds. He did not. His decision against making the claim was based upon his conviction that nearly all the problems arising from this phase-out--for himself and the other districts--could be largely eliminated with prudent management. The coming phase-out had been known by all for some 12 months in advance, and the superintendent thought this provided adequate time to take action. So the school district with greater impact solved its own problems, and those with somewhat less impact received federal assistance.

Applicability of the Purtell Amendment

The Purtell Amendment to PL 874 was applicable to only seven out of the 45 sample districts included in Table 9 (see Column 14), indicating that in the majority of phase-outs, federal ADA did not drop below the 3 percent threshold level required (see Chapter III for discussion). Several districts were not included because, even though phase-outs resulted in their federal ADA dropping below the 3 percent threshold requirement, the drops took place before the amendment was put into effect. Still others were not included because their federal ADA, when it did drop below the 3 percent level, dropped to zero. In this latter case, no payments were made, since they were based on the actual number of federal ADA remaining in the district. There are several limitations to the Purtell Amendment as a solution to the financial problems resulting from phase-outs. These weaknesses are discussed in Chapter II.

Expenditure Problems

Of the 45 districts shown in Table 9, there were 17 that had expenditure problems. However, only 28 could have had such problems under the problem definitions used in this study, since 17 districts did not have declines in total ADA. Ten districts had actual increases in expenditures per ADA, but analysis of available data indicates that the increases probably were not due to an inability to reduce costs proportionately to decreased ADA.

Three of the 5 districts listed in Chapter III as experiencing significant depressing economic effects because of phase-outs had expenditure problems resulting from decreases in total ADA. These were La. #204, La. #206, and Calif. #501. Maine #1007 had no reduction in total ADA; for Oregon #20, even though it had a reduction in total ADA and an increase in expenditures per ADA, there is evidence that the increase was voluntary.

The average magnitudes of the expenditure problems for the 17 districts ranged from small to large: 4 were small, 10 were moderate, and 3 were large. As shown in Column 16, Table 9, the problems did not last more than two years, and the great majority lasted only one year.

Debt Service Problems

As is shown in Table 9, Column 20, there were only four districts that had significant debt service problems, and the duration of the individual problems was no more than two years. The general absence of such problems indicates the relatively low percentage that debt service was of total revenue, at the time the phase-outs began--averaging about 7.9 percent (see Column 22, Table 9)--and also indicates the relatively small reductions in total revenue per ADA. The absence of debt service problems also probably indicates that construction caused by federal involvement was done with PL 815 funds, which does not result in a debt service. In two of the four districts with debt service problems, the proportion of debt service to total revenue was very high (14.6 percent and 17.2 percent), even though the expected decreases in revenue per year were fairly low (2 percent and 3 percent respectively). In a third case, although the proportion of debt service to total revenue was about average (6.9 percent), the expected drop in revenue was very high--11 percent for one year. Data were not available for the fourth case to determine the proportion of debt service to total revenue; the existence of the problem was based primarily upon statements from personal interviews in the field.

District and Installation Characteristics Related to Problem Causation

Seven principal characteristics of school districts and of federal installations and their phase-outs, which possibly could contribute to the emergence of financial problems, were studied in some depth for the

45 sample districts. The results of the analyses are tabulated in Columns 1 through 13 in Table 9, with the exception of Column 10. The changes in total ADA (Column 10) are considered not to contribute, since they are taken into account in determining whether the problems could or did arise. The seven characteristics are: (1) size of the school district, (2) location of the federal installation, (3) type of federal installation and employment, (4) amount of forewarning given to the school districts, (5) the federal involvement, and the magnitude and duration of phase-out, (6) the urbanization of the area, and (7) the economic growth status of the area. The relation of each of these characteristics to financial problem creation is discussed in the following subsections. In many cases, more than one characteristic would be involved.

Size of School District

Of the 45 districts in the sample, 8 were small in size, 28 were medium, and 9 were large (see Column 1, Table 9). There seems to be a relation between small districts and the existence of actual revenue and expenditure problems, although the x^2 statistical test does not show dependence at 90 percent confidence levels. Table 12 shows that there were actual revenue problems in 11 percent of the large districts, 14 percent of the medium-size districts, and 38 percent of the small districts. There were expenditure problems in 33 percent of the large districts, 36 percent of the medium-size districts, and 50 percent of the small districts. We expect expenditure problems to arise more often in small districts, because of scale economies that make costs more inflexible. More revenue problems arise because federal ADA tends to be a larger percentage of total ADA, prior to phase-out, in small districts.

Location of Federal Installation

In 30 of the 45 sample cases, the federal installations that were phased out were located inside the district, and in 12, they were located outside. In one district, the installation was located both inside and outside, and for two districts insufficient data were available. Table 13 indicates that there were actual revenue problems in 33 percent of the districts that had the installations located outside, whereas only 10 percent of the districts having the installations located inside had such problems. These figures indicate a correlation between an "outside" location and actual revenue problem creation, and the statistical x^2 test showed dependence at the 90 percent confidence level. Table 13 also indicates that none of the districts with the federal installations outside had expenditure problems; whereas, 53 percent of those with the installations inside had expenditure problems. These figures show a definite correlation between "inside" locations and expenditure problem creation, and this correlation is verified by the statistical x^2 test at the 90 percent confidence level. The two correlations are seen to be opposite; outside location of the installation causes a revenue problem, and inside location causes an expenditure problem. A facility being outside the

Table 12

PROBLEM CREATION RELATED TO SCHOOL DISTRICT SIZE
(Based Upon a Sample of 45 Districts)

School District Size	Actual Problem Created (No. of school districts)					
	Revenue			Expenditure		
	Yes	No	Total	Yes	No	Total
Small	3	5	8	4	4	8
Medium	4	24	28	10	18	28
Large	1	8	9	3	6	9
Total	8	37	45	17	28	45

Source: Stanford Research Institute.

Table 13

PROBLEM CREATION RELATED TO LOCATION OF
FEDERAL INSTALLATION PHASED OUT
(Based Upon a Sample of 45 Districts)

Location of Installation	Actual Problem Created (No. of school districts)					
	Revenue			Expenditure		
	Yes	No	Total	Yes	No	Total
Inside	3	27	30	16	14	30
Outside	4	8	12	0	12	12
Inside and Outside	0	1	1	1	0	1
Unknown	1	1	2	0	2	2
Total	8	37	45	17	28	45

Source: Stanford Research Institute.

district contributes to revenue problems, because such districts tend to be residential, with few alternative revenue sources, and the pupils tend to remain in the district; whereas, having a facility inside the district contributes to expenditure problems, because such districts have larger federal involvement, tend to be military, and therefore tend to lose pupils.

Type of Installation

Qualitative data gathered in the field in the course of the study indicated that there were different effects upon the community and the school district depending upon the type of installation phased out: a military base (whose high percentage of military personnel and permanent civil service employees tend to leave the district); a construction project (of whose employees many leave but many remain); and a manufacturing or assembling plant (some of whose personnel usually leave but most of whom remain). Column 3 in Table 9 indicates the type of installation, and Column 4 the type of employee. Since there is a high correlation between type of installation and type of employee, only the data on type of installation are analyzed here, to see if there was any correlation between type of installation and problem creation.

As shown in Table 14 (as well as in field trip results), there is a greater tendency for revenue problems to arise in manufacturing plant phase-outs then in phase-outs of other types of installation. (The x^2 statistical test, however, shows no dependence between types of installation and revenue problem creation at the 90 percent confidence level.)

Table 14

PROBLEM CREATION RELATED TO THE TYPE OF FEDERAL INSTALLATION
(Based Upon a Sample of 45 Districts)

Type of Installation or Activity	Actual Problem Created (No. of school districts)					
	Revenue			Expenditure		
	Yes	No	Total	Yes	No	Total
(A) Military base	1	10	11	6	5	11
(B) Housing	0	8	8	3	5	8
(C) Construction	1	7	8	4	4	8
(D) Manufacturing	3	7	10	1	9	10
(E) Other	0	4	4	1	3	4
(F) Combinations	3	1	4	2	2	4
Total	8	37	45	17	28	45

Source: Stanford Research Institute.

This greater tendency might be because employees stay in the area for some time before other new jobs are generated. Although persons connected with housing projects also usually stay in the area, fewer revenue problems occur, possibly because of the rapid transfer of the housing property, as well as other new residences, to the private tax base. Table 14 and the field interviews also indicate a higher tendency for expenditure problems to occur in military base and construction phase-outs relative to the other types, even though the statistical x^2 test does not show dependence between type of installation and the creation of expenditure problems at the 90 percent confidence level. This greater tendency would be expected, since personnel tend to leave the area to a larger degree in the case of military base and construction phase-outs.

Amount of Phase-Out Forewarning

Table 15 indicates, for the 45 sample school districts, the relationship between amount of forewarning of the phase-out and the creation of revenue and expenditure problems. Out of the total 39 districts for which data were available for forewarning, 23 had adequate forewarning and 16 had inadequate forewarning. (For definitions of adequate and inadequate see explanatory notes to Table 9.) The data in Table 15 imply that there is no correlation between amount of warning and a resulting revenue problem, indicating that local and state revenue response is not generally affected by amount of forewarning. Concerning expenditure problems, 38 percent of the districts that had inadequate warning had such problems, and 39 percent that had adequate warning also had problems. These nearly identical percentages with and without adequate warning indicate that there was no correlation between forewarning and the creation of expenditure problems. However, it is known from the field trips that certain actions could be taken and were taken in some districts to reduce costs when there was forewarning of an ADA reduction.

Table 15

PROBLEM CREATION RELATED TO AMOUNT OF FOREWARNING AS TO PHASE-OUTS
(Based Upon a Sample of 45 School Districts)

Amount of Forewarning	Actual Problem Created (No. of school districts)					
	Revenue			Expenditure		
	Yes	No	Total	Yes	No	Total
Adequate	3	20	23	9	14	23
Inadequate	2	14	16	6	10	16
Unknown	3	3	6	2	4	6
Total	8	37	45	17	28	45

Source: Stanford Research Institute.

Federal Involvement and Magnitude and Duration of Phase-Out

Table 9, Columns 6 and 7, indicates that the sample of 45 school districts analyzed had a relatively high degree of federal involvement before the phase-outs began. Federal ADA averaged 34 percent of total ADA, and net entitlement was 11 percent of TCE. On the average, federal ADA, or net entitlement, decreased by two-thirds during the phase-outs. In 30 of the 45 districts, the major portion of the phase-out lasted for no more than two years.

Table 16 includes the relationship between creation of revenue and expenditure problems, and the magnitudes and duration of the expected annual decreases in entitlement revenues. Twenty-one districts, almost half, had expected annual revenue decreases of 3 percent or less, lasting two years or less; 16 districts, over one-third, had expected annual decreases of 4 percent or more. There were no districts with expected decreases of 7 percent or more which lasted more than two years.

The sample of 8 districts that had actual revenue problems is too small and its distribution too wide to draw any definite conclusions regarding the correlation of such problems with the magnitude and duration of the expected revenue decreases from phase-outs. However, the data in Table 16 prompt the following implications: (1) the longer durations, over two years, do not seem to indicate a greater tendency for actual problems to arise; (2) there is no indication that revenue problems are more likely to arise as the ratio of decline in entitlement to total revenue increases. There is some indication that more expenditure problems arise when the expected annual revenue decrease is 7 percent and over.

Urbanization of the Community

As shown in Table 17, two-thirds of the school districts in the sample were located in large urban centers (cities of 100,000 population or more), or were within commuting distance of such cities. One-third of the districts were relatively isolated from an urban center. It was found that being oriented to such an urban center was a significant help in preventing revenue problems from arising. Table 17 indicates that districts not in, or within commuting distance of, a large urban center are more likely to have revenue problems than urban-oriented districts.*

Several aspects of the urban environment probably contribute to the lower susceptibility to revenue problems: (1) the higher per capita

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* Table 17 shows that 3 out of 10 districts not urban-oriented, and 1 out of 10 urban-oriented districts, can expect to have revenue problems. The difference is statistically significant at the 90 percent confidence level.

Table 16

PROBLEM CREATION RELATED TO THE ANNUAL EXPECTED DECREASES IN REVENUES OVER VARYING TIME DURATIONS
(Based Upon a Sample of 45 School Districts)

Annual Expected Decrease in Revenues & Duration	Actual Problem Created (number of school districts)					
	Revenue			Expenditure		
	Yes	No	Total	Yes	No	Total
1% or less for all durations	1	9	10	0	10	10
2 and 3% for 2 yr duration and less	1	10	11	5	6	11
2 and 3% for over 2 yr duration	2	6	8	3	5	8
4, 5, and 6% for 2 yr and less	3	4	7	3	4	7
4, 5, and 6% for over 2 yr	0	1	1	0	1	1
7% and over for 2 yr and less	1	7	8	6	2	8
7% and over for over 2 yr	0	0	0	0	0	0
Total	8	37	45	17	28	45

Source: Stanford Research Institute.

Table 17

PROBLEM CREATION RELATED TO THE ECONOMIC STRUCTURE OF THE SCHOOL DISTRICT AREA
(Based Upon a Sample of 45 Districts)

Economic Structure of the Area*	Actual Problem Created (No. of school districts)					
	Revenue			Expenditure		
	Yes	No	Total	Yes	No	Total
A-1	2	15	17	6	11	17
A-2	1	4	5	2	3	5
A-3	0	7	7	2	5	7
B-1	4	10	14	6	8	14
B-2	1	1	2	1	1	2
B-3	0	0	0	0	0	0
Total	8	37	45	17	28	45

* See explanatory notes to Table 9 for definition of types.

Source: Stanford Research Institute.

incomes make it easier to raise tax rates when confronted with potential problems; (2) economic and demographic growth is concentrated in the urban areas,* which means that new activities are more likely to replace a phased out federal facility in such areas, and that assessed values are more likely to be rising from all causes; and (3) urban populations tend to be more mobile, so that if compensating economic opportunities did not arise to replace federal employment, the families would be more likely to leave.

Economic Growth Status of the Area

The 45 school districts in the sample were divided according to their level of economic growth (Column 13, Table 9). A stagnant-to-low level was referred to as "low," and a moderate-to-high level was referred to as

* From 1950 to 1960, population grew 29 percent in urban areas, and declined by 1 percent in rural areas.

"high." Of the 45 districts, 27 were classified as having high levels of economic growth, and 18 were classified as having low levels.

Table 18 presents data that compare revenue and expenditure problems to the level of economic growth. The data indicate no statistically significant relationship between revenue or expenditure problems and economic growth.

Table 18

PROBLEM CREATION RELATED TO THE ECONOMIC GROWTH STATUS OF THE SCHOOL DISTRICT AREA
(Based Upon a Sample of 45 Districts)

Economic Growth Status of Area	Actual Problem Created (No. of school districts)					
	Revenue			Expenditure		
	Yes	No	Total	Yes	No	Total
Low	4	14	18	8	10	18
High	4	23	27	9	18	27
Total	8	37	45	17	28	45

Source: Stanford Research Institute.

Appendix A

COMMENTS ON THE SCHOOL DISTRICTS INCLUDED IN TABLE 9

Alabama #20: There were about 16 federal installations affecting federal ADA in the middle 1950s, most of them being connected with TVA. The federal ADA decrease was due mainly to construction phase-outs at the Wilson Dam and Reservoir and the Colbert Steam Plant, although there were smaller changes in several of the other installations. Another period of decrease in federal ADA, starting in 1963, is not considered in this study.

Arkansas #23: Total ADA remained fairly constant throughout the main 4-year phase-out period. It then dropped about 11 percent four years after the phase-out began, indicating a lag between the moving-out of families and the initial unemployment increases.

California #18: When a federal housing project was closed, many of the people moved to other school districts, accounting for a drop in total ADA of 43 percent over a 2-year period. The phase-out, at a later date, of Benicia Arsenal did not significantly affect the federal ADA of the school district, since most of the employees who lived in the district obtained employment at one of the many other federal installations within commuting distance.

California #27: Several federal housing projects were phased out during several years, causing an overall drop of about 6 percent in total ADA. Most of the families moved to other locations farther from the school but still in the school district. Most of the pupils involved were Section 3(a) pupils who became Section 3(b) pupils. Phase-out of Benicia Arsenal did not affect the school district because of a simultaneous rise in employment at Mare Island Shipyards.

California #33: Camp Stoneman was a staging area. When the military families left after the Korean War, they were replaced by others because of the general economic expansion of the surrounding area. Therefore, there was no decline in total ADA. The decline in net

entitlement was more than offset by increases in assessed value because of the arrival of PG&E. Any potential problem was also minimized by payment in-lieu-of-taxes by the county, which took over the Camp Stoneman land for a few years.

California #130: The school district is a medium-to-low-rent housing area with a very high turnover and with the highest school tax rate in the country. The phase-out of several squadrons at the Naval Air Station caused a small decrease in federal ADA for one year only, although total ADA went up significantly. Later decreases in federal and total ADA were not due to any installation phase-out but to the fact that as people became more affluent in the early 1960s, they moved to better housing areas.

California #501: Federal ADA came mainly from Edwards Air Force Base and the Air Station. The phase-out of the Air Station was totally unexpected; the town was gearing itself to an announced $80 million expansion program at the Station. The population of the city was reduced, and there is still a vacancy rate of about 75 percent for small establishments.

Connecticut #4: There were two phase-outs that affected the school district. The first was closure of three housing projects, starting about 1958. The second was the sale by the government of the Electric Boat Division to General Dynamics. The second phase-out is the only one treated in this analysis. Prior to the sale of the federal activity to General Dynamics, the Division had been considered 30 percent private, so that the school district received only 70 percent of the normally entitled PL 874 funds.

Indiana #407: The Charlestown Ordnance Plant started to phase out in 1954, and a federal housing project was phased out in 1957. These are treated together in the analysis. A rapid rise in total ADA (over 100 percent in six years) overshadowed other events, such as the loss of federal ADA and net entitlement. Although local property tax revenue, which accounted for about 50 percent of TCE, increased significantly after the phase-outs began, the relatively greater increase in ADA did create a revenue problem, but it was not due to the federal phase-outs.

Kentucky #35: Barkley Dam took over a great deal of the best land in the area. As a result, population decreased even though total ADA remained fairly constant, after an initial small decline when construction began to phase out.

Louisiana #204: In 1957-58, the school district obtained PL 815 funds. Also, a local bond issue was passed to construct new classrooms for the increased federal pupils. Part of this money went to build a new elementary school, which was about one-half empty when the federal pupils left.

Louisiana #206: Although the phase-out of Fort Polk did cause a small drop in total ADA, it would have been much more drastic if several new industrial plants had not opened in the area at the same time. A problem of reducing the number of teachers to correspond with the decrease in total ADA did not arise, because many of the teachers were wives of the military personnel who left the area.

Michigan #1: A general economic recession was a major factor in total ADA reduction, as well as the phase-out of the federal housing. The decreases in ADA were factors in the increased revenue per ADA.

Michigan #3: A drop in total revenue/ADA the first year after the phase-out began was due to a 9 percent increase in total ADA, whereas state aid, which accounted for about 73 percent of revenues, increased only 3 percent. The decrease in revenue/ADA, therefore, was not due to the phase-out. Reassessments were also not due to phase-outs.

Mississippi #2: The phase-out was caused by the Maritime Commission's allowing the lease to expire on the Ingles Shipyard, a combined Lytton Industries and federal operation. Although net entitlement dropped, the federal pupils remained. PL 815 funds were used to construct a large proportion of the school facilities.

Nebraska #17: Increases in property tax revenue, which accounted for about 75 percent of total revenue and which resulted from forces mainly unrelated to the phase-out, more than offset the decline in net entitlement. There were no reassessments.

New Jersey #6: The federal housing accounted for almost all of the 3(a) pupils, and these in turn made up about 45 percent of the total federal ADA. When the housing project was sold, most of the 3(a) pupils became 3(b) pupils, and this change minimized the drop in federal ADA. Total ADA increased by over 100 percent through the phase-out period, because of an influx of construction workers for a new highway. State and property tax revenues each accounted for

about 40 percent of TCE. A reduction in each of these per ADA in the first year after the start of the phase-out was mainly due to the large increase in total ADA, from children of the construction workers.

North Carolina #502: There was an insignificant reduction in total ADA over a 2-year period, caused mainly by the phase-out. Although a slight economic slump in the local economy resulted and there were several hundred empty houses on the market, total assessed property values increased. State aid, which accounted for about 80 percent of TCE, kept rising significantly on a per ADA basis during the phase-out period.

Ohio #2: There was a phase-out of a tank automotive installation in the late 1950s, which did not have a noticeable effect upon total federal ADA because of increases in other federal installations in the area. Table 9 analyzes only the results of the phase-out of federal housing in about 1954. With the exception of the third year after the beginning of the phase-out, there was a rapid growth in total ADA. In the third year, there was an 11 percent drop. The total revenue per ADA dropped in the first year after the phase-out started, but this drop was mainly due to a decrease in the tax rate and to an approximate 11 percent increase in total ADA. This decline in revenue was lessened where the housing became part of the tax base. Property tax revenues accounted for 80 to 90 percent of TCE; hence the gradual tax rate increases after the first year and the assessed value increases overshadowed any decrease in net entitlement.

Ohio #9: A general decline in the population of the area led to a decreasing total ADA four years after the phase-out began. This decline was due mainly to the phase-out of the housing and the arsenal. Adding the federal housing property to the tax base in the first year of the phase-out helped to relieve the initial financial impact.

Ohio #227: Total ADA rose at an annual average rate of about 6 percent throughout the 1950s, which includes the phase-out period. Increased state revenue per ADA and the increased tax rates were not a response to the phase-out but rather to increased ADA.

Ohio #601: Total ADA increased at an average annual rate of about 4 percent throughout the phase-out period.

Local property tax revenue, which accounted for about 80 percent of total revenue, increased on a per ADA basis, mainly because of a large rise in tax rates but also because of a gradually expanding tax base. Part of the latter was caused by some of the housing entering the tax rolls.

Oregon #20: There were two phase-out periods, one beginning in 1952 and one in 1961. Only the first is considered in Table 9. Although the phase-out had a significant depressing effect on the local economy, total ADA increased at an average annual rate of about 3 percent with the exception of 1952, when there was a reduction in total ADA of about 10 percent. A new economic boom started in 1963. Section 3(f) funds were received for the 1961 phase-out. The depressing economic effect of the phase-out definitely retarded growth in assessed property values, and this, along with increasing ADA, was one of the main reasons for the decreases in revenue per ADA.

Texas #19: Total ADA continually increased throughout the phase-out period because the area was a suburb of Dallas, which was economically expanding and which gave new employment to the federal workers laid off because of the phase-out. Most of the federally connected families, therefore, did not have to move. The buildup (in years prior to the phase-out) of substantial cash reserves permitted the school district to continue the educational programs substantially unaltered, even though there was a small loss of net entitlement.

Texas #41: Although there were significant layoffs by General Dynamics, the total ADA increased slowly from 1959 through 1964. This increase was due mainly to the fact that the general Fort Worth area was expanding economically and offered adequate employment opportunities.

Texas #238 Gary Air Force Base was phased out in early 1957. At the same time, the Air Force awarded a contract to the firm of Graham and Sons to operate a large flight school. This company absorbed a great many of the civilians laid off at the Base. This flight school was terminated in 1959.

Texas #453: The termination of the federal flight training activity corresponded with good rains, bringing increased farm employment. Therefore, most people remained, and total ADA fell only very slightly.

Washington #1:	There was no reduction of an installation as such; rather, Boeing bought the federal properties that it was operating, eliminating the eligibility for PL 874 payments.

Appendix B

METHOD OF DATA COLLECTION AND ANALYSIS

General Requirements

Data had to be gathered on two sets of school districts in order to derive conclusions as to the actual impact of phase-outs: one was a set of all school districts potentially affected by phase-outs over the past 10 to 15 years; the second was a set of districts most likely to have had financial problems resulting from the phase-outs, either because of the relatively large federal involvement or because of the magnitude of the phase-out. The second is a sub-set of the first, as described below.

Installations Phased Out and Connected School District Data

We examined approximately 1,000 installations that have had phase-outs since 1950, and selected 190 as probably having had the greatest impact upon connected school districts because of their relatively large size and degree of phase-out. Of the original 1,000 installations, knowledge of the phase-outs of about 850 came from lists obtained from the Department of Defense; these covered the period 1957 through 1964. The remainder came from both the files and the personal knowledge of Stanford Research Institute and the Property Section, SAFA, Department of Education. For each of the 190 installations, the Property Card, OE 4185 (5-63), was pulled from the files of the Property Section of SAFA, and a list was made of the SAFA project numbers of the school districts that claimed against the installation in the year just prior to the commencement of the phase-out. The number of school districts claiming against a federal installation varied from 1 to over 100. For installations with fewer than 20 districts claiming, all the school district project numbers were recorded. Where there were 20 or more districts claiming, the number of districts was sampled so that a minimum of 10 districts would be noted for each installation.

The method of sampling was as follows: if there were about 20 districts claiming in the sample year, every second district was recorded; if there were about 30 districts claiming, every third district was recorded; and so on. In this manner, 972 districts in 45 states were recorded. For about 25 of the 190 sample installations, no property cards were found; this indicated that no PL 874 claims had ever been made against these installations. For each of the 972 districts, the following data were obtained.

1. From Data Sheets in the Property Section of SAFA: the names of the installations claiming PL 874 funds, and the number of 3(a) and 3(b) students claimed by each installation for the fiscal years 1962 through 1965. Data prior to 1962 were not readily available.

2. From Financial and Statistical Record Cards, OE 4117 (7-64), in the Finance and Control Section of SAFA: for all available years, 3(a) ADA, 3(b) ADA, total ADA, net entitlement, local contribution rate, and total current expenditures.

Information from the Data Sheets was hand-processed and put into histograms for use in Chapter IV, but data, on an annual basis, from the Financial and Statistical Record Cards were key-punched onto IBM cards for computer processing. The results of the computer program were discussed in Chapter IV.

Detailed Analysis of District Sub-Sets

More detailed data from sub-set of the districts were gathered in order to analyze the financial problems in more depth. One hundred and six districts were selected; these had the highest potential impact from phase-outs, based upon the degree of federal involvement and the magnitude of the phase-outs. These 106 districts were contacted by telephone to determine the availability of data and willingness to cooperate. Of the 106 districts, 80 indicated that the information was available and that they would be willing to furnish it. A data questionnaire was therefore sent by mail to each of these 80 districts. In order to assure receipt of the quantitative data requested by mail, to gather related non-school-district data, and to obtain certain qualitative information, 40 of the 80 districts were visited by representatives of SRI. These 40 were selected because they probably had the largest impact from phase-outs, and because they were representative of all the pertinent parameters: the various sizes, small to large, of school districts; the various types of federal installations phased out; the various economic structures and growth levels of the areas; the durations, short to long, of phase-outs; reductions and no reductions in total ADA; the various regions of the United States; and the states with different types of state aid calculation methods.

Sample Selection of Districts for Mail Questionnaires

The ADA data collected for each of the 972 school districts were analyzed, and the districts were classified as follows:

1. Declines in federal 3(a) students only, 3(b) students only, both 3(a) and 3(b) students, and no declines in either 3(a) or 3(b) students.

2. Decline and no decline in total ADA.

3. The percentage of federal to total ADA in the year just prior to the commencement of the phase-out: 1 to 5 percent; 6 to 15 percent; and 16 percent and over.

4. The length of the phase-out: 1 to 2 years; 3 to 5 years; and 6 years and over.

5. The percentage decrease in federal ADA over the entire span of the phase-out: 1 to 9; 10 to 24; 25 to 49; and 50 and greater.

The procedure employed in selecting, for analyses in depth, the districts most likely to have experienced heavy impacts from phase-outs is described below. In 250 of the 972 districts, no declines in either federal 3(a) or 3(b) students were found, reducing to 722 the total sample of districts that probably had some impact due to phase-outs. Of the 722 districts, 179 were eliminated for one of the following reasons: (1) the percentage of federal to total ADA prior to phase-out was less than 6 percent, (2) the percentage of federal to total ADA was between 6 and 15 percent, and the percentage decrease in federal ADA was less than 25 percent; or, (3) the percentage of federal to total ADA was 16 percent to 100 percent, and the percentage decrease in federal ADA was less than 10 percent. Of the remaining 543 districts, 123 had declines in both federal ADA and total ADA, while 420 had no declines in total ADA.

A random sample of one in two was selected from the group with declines in both federal and total ADA, and one in three was selected from the group with declines in federal ADA only. All of the data gathered from SAFA for the resulting sample of 207 districts were then scrutinized by hand on a district-by-district basis in selecting a final sample to be contacted by telephone. Of the 207 districts, 101 were eliminated for two main reasons: (1) many districts had been misclassified because missing data had been treated originally as though the entries were zero; and (2) all districts with total ADAs of less than 300 were excluded, on the belief that such small districts have special problems because of their size, and sufficiently different revenue/ADA and expenditure/ADA patterns from larger districts to make it feasible to merge them with the other districts for analysis. There were two other reasons for eliminating some of the 101 districts: (1) districts were excluded where the data showed that the phase-out had not begun until 1963 or 1964, which was too late for meaningful analysis of subsequent data; and (2) districts were excluded that excessively duplicated others in terms of size of school district, type of installation phased out, magnitude of phase-out, and proportion of federal ADA to total ADA.

The 106 districts that were contacted by telephone represented various sizes of school district and various proportions of federal ADA to total ADA, as shown in Table B-1. The majority represent districts that had ADAs of 1,000 to 10,000, and declines in federal ADA from 10 percent to 50 percent.

Table B-1

DISTRIBUTION OF SAMPLE DISTRICTS CONTACTED BY TELEPHONE

ADA*	Proportion of Federal ADA to Total ADA* 5-9%	10-19%	20-49%	50-100%	Total District
300-499	0	1	3	2	6
500-999	0	5	6	0	11
1,000-1,999	0	8	11	5	24
2,000-4,999	1	4	17	8	30
5,000-9,999	0	7	16	4	27
10,000 & over	1	2	2	3	8
Total districts	2	27	55	22	106

* In the year just prior to the start of the phase-out.

Source: Stanford Research Institute.

Method of Data Collection

As was mentioned earlier, more detailed data than were obtained from SAFA were gathered for certain school districts by telephone, by mail questionnaire, from U.S. census statistics, from state offices of education, and by personal visits. A general description of the district sample utilized and the data obtained is given below.

Telephone Contact. The school district superintendent, assistant superintendent, or business manager of the 106 sample districts, selected as described in the previous subsection, were contacted by telephone. To the extent possible, the following information was obtained:

1. General availability of financial data
2. Willingness and ability to furnish required data within a reasonable length of time
3. Grade levels covered by the district
4. General description of the federal installation that was phased out, and of other federal installations in the area

5. General description of the problems created for the district by phase-out, and their duration

6. Names and addresses of alternative sources of data

Mail Questionnaires. As a result of the telephone contacts, 26 out of the total of 106 districts were eliminated from the sample, mainly because of lack of data or apparent unwillingness to furnish data. The remaining 80 districts, in 27 states, were sent questionnaires requesting data over a time period extending from two years before the start of the phase-out to the present time. The questionnaire requested data on the following:

1. ADA, including federal

2. Revenue by major source, current expenses of education, and debt service payments

3. Various tax rate and assessed value data (most were obtained directly from the school districts, but in some cases the county assessors were contacted by mail)

4. Data that were supposed to have been obtained over the telephone but were not

Of the 80 districts sent questionnaires, data were received from 60--either by mail or during field visits by the SRI representatives. Of the 60, 45 submitted data sufficiently complete (missing data could not be obtained by SRI from other sources) to be included in the final sample used in the analysis in Chapter V. The lack of response does not seem to have created significant bias, as indicated by the fact that the distributions of the 45 districts with regard to size and proportion of federal ADA were not significantly different from the distribution for the 106 districts. See Table B-2.

Census Statistics. Statistics on the communities encompassing the school districts were obtained from the 1950 and 1960 U.S. Census publications concerning population, employment and unemployment, total housing units, both occupied and unoccupied, and business establishments by type. Generally, census data were used for school districts coterminous with census areas.

State Aid Program Data. Because of the importance of revenues from state educational aid programs, data were requested from the departments of education in the 27 states represented in the sample of school districts that were sent mail questionnaires. These data concerned the various state aid programs, formulas for calculating state payments under

Table B-2

DISTRIBUTION OF SAMPLE DISTRICTS ANALYZED IN DEPTH

ADA*	Proportion of Federal ADA to Total ADA* 5-9%	10-19%	20-49%	50-100%	Total Districts
300-499	0 (0) †	0 (0)	0 (1)	1 (1)	1 (2)
500-999	0 (0)	1 (2)	4 (3)	0 (0)	5 (5)
1,000-1,999	0 (0)	2 (3)	6 (5)	1 (2)	9 (10)
2,000-4,999	0 (0)	4 (2)	8 (7)	5 (4)	17 (13)
5,000-9,999	0 (0)	2 (3)	9 (7)	0 (2)	11 (12)
10,000 & over	0 (0)	1 (1)	0 (1)	1 (1)	2 (3)
Total districts	0 (0)	10 (11)	27 (24)	8 (10)	45

* In the year just prior to the start of the phase-out.
† ( ) expected values based on percentage distribution in Table B-1.

the various programs, changes in these formulas since the start of the applicable phase-outs, and the actual state payments to the respective school districts included in the sample.

Field Visits by SRI Representatives. Of the 80 school districts sent mail questionnaires, 40 were visited by SRI representatives, not only to facilitate receipt of the data requested by mail but also to obtain further quantitative and qualitative information. A detailed questionnaire was developed and used in the interviews mainly with the school district superintendent, county assessor, state employment office director covering the area, and personnel officer of the federal installation phased out. The questionnaire was divided into five main parts:

(1) family and employment information on personnel eliminated by 1965 because of the phase-out; (2) general community information such as population, unemployment rates, and general economic characteristics; (3) information about the installation phased out; (4) property assessment and tax rate information; and (5) school district financial and operational information. Of the 40 school districts visited, 36 were included in the final sample of 45 analyzed in Chapter V. Of the four not included in the sample, one sent insufficient data, one sent no data, and two were treated as special cases.

Method of Data Analysis

Quantitative financial and ADA data for the 45 school districts included in the final sample of districts analyzed in Chapter V were put on IBM cards and printed out by a computer in the form shown in Table B-3. The form permitted analysis of the financial changes that occurred, and the reasons for them. Data inputs began two years prior to the start of the major portion of the phase-out and went through 1965, where data permitted. The type of financial and ADA data included is described in the footnotes to Table B-3. The results of the analyses of the data for each of the 45 school districts is illustrated in Table B-3. These results, together with the analyses of the other data for each district obtained by telephone, mail and field trip questionnaires, were evaluated, and the overall results were summarized in Table 9 in Chapter V. The method of quantifying the various types of data is described in the notes to Table 9 in Chapter V.

Table B-3

SAMPLE OF COMPUTER OUTPUT
ANALYZING INDIVIDUAL SCHOOL DISTRICT DATA

State 48, District 44									
1951	1952	1953	1961	1962	1963	1964	1965
0**********			5,797	6,841	6,577	6,319	6,5 1
1**********			50	55	42	40	39
2**********			17	19	14	15	15
3**********			67	66	58	53	57
3a**********			13	11	9	12	16
4**********			385	426	335	272	285
5**********			100	108	130	120	124
6**********			100	102	118	103	*****
7**********			100	106	113	96	107
8**********			100	91	93	111	160
9**********			100	89	101	111	111
10**********			100	105	108	109	154
11**********			100	103	101	111	130
12**********			100	120	105	110	113
13**********			100	106	109	119	127
14**********			100	130	96	88	89
15**********			100	108	109	102	114
16**********			100	134	109	102	106
17**********			100	118	113	109	113
18**********			100	150	135	175	197

Row numbers are as follows:

0 to 4 - actual values
- 0 - total ADA
- 1 - % of federal ADA to total ADA
- 2 - % of net entitlement to TCE
- 3 - % of state revenue to TCE
- 3a - % of local property tax revenue to TCE
- 4 - total revenue divided by nonfederal ADA times LCR

5 to 18 - index numbers
- 5 - TCE divided by ADA
- 6 - TCE/ADA divided by state average TCE/ADA
- 7 - state revenue/ADA
- 8 - local property tax revenue/ADA
- 9 - assessed property value/ADA
- 10 - tax rate for school purposes
- 11 - total local revenue/ADA
- 12 - federal net entitlement/ADA
- 13 - LCR
- 14 - federal ADA
- 15 - total revenue/ADA
- 16 - federal 3(a) plus $\frac{1}{2}$ of 3(b) ADA
- 17 - total ADA
- 18 - debt service/ADA

Source: Stanford Research Institute.

Appendix C

CASE STUDY OF A RECENT LARGE MILITARY PHASE-OUT, SALINA, KANSAS* AND FINANCIAL PROBLEM CREATION FOR THE SCHOOL DISTRICT

Introduction

Salina, Kansas, with a population of about 45,000, has had a moderate level of economic activity. The town is located immediately northeast of Schilling Air Force Base. The base is outside the school district, and there are no other large federal installations. From 1952 through 1964, the air force base housed two wings of the Strategic Air Command, requiring a base staff of 5,300 to 7,000 officers, airmen, and civilians. About 92 percent were in the military and the permanent civil service. Children of base personnel constituted about 30 percent of the total enrollment in Salina schools at the beginning of the 1964-65 school year.

In November of 1964, notice was received by Schilling Air Force Base that it would be substantially phased out within a period of about seven months, starting in about two months. The major transfers of base personnel took place between January and May 1965. By October 1965, the base staff had been reduced to a total of 612 (28 officers, 476 enlisted men, and 108 civilians), with plans calling for reduction to a staff of 365 by December 1965 and zero by September 1966.

There are 735 Capehart housing units in the air force base, and in addition to the 151 AFB families occupying these units in October 1965, a total of 55 wives of overseas servicement had been assigned to the units, together with their children. In previous years, the base units have been fully occupied. The total number of military and civilian AFB personnel living in Salina was estimated to be about 300 in October 1965, compared with about 2,400 a year earlier, and at least that number for several preceding years.

Effect of Phase-out

The effect of the sudden decline in Schilling AFB personnel on the Salina public schools has been analyzed by first taking trends during

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* The Salina Board of Education was also the subject of a previous case study of the operation of Public Laws 874 and 815. See Entitlements for Federally Affected School Districts under Public Laws 874 and 815, Stanford Research Institute (for the U.S. Office of Education), May 1965.

the 5-year period FY 59 through FY 64 as a base, and projecting the FY 66 school attendance and financial data that could have been expected if these trends had continued--that is, if Schilling AFB had continued in operation. (FY 65, the year of transition, was ignored because it would not be representative of either the before-closure or the after-closure situation.) Salina school enrollment figures for the fall of 1965* were next converted to estimated ADA for FY 66 based on the average ratio of ADA to fall enrollment over the past few years (about 0.90). Finally, the present estimates of school financial data for FY 66 were obtained from the Salina Board of Education, and these ADA figures and financial data were compared with the ADA and financial projections from the FY 59-64 trends. This comparison is shown in the first seven columns of Table C-1, while column 8 shows percentage changes of FY 66 data compared with FY 64 data. Comments on Table C-1 follow.

Item 1 - ADA. It is significant that, while Total FY 66 ADA (line 1e) is only 73.1 percent of what would have been predicted based on the FY 59-64 trend, the ADA figure for nonfederally connected children (line 1e) is 102.1 percent of the predicted level. This indicates that the effect of the phase-out on school attendance was probably entirely confined to the children of base personnel.

The 2.1 percent excess of nonfederally connected ADA over that predicted on the basis of the FY 59-64 trend amounts to an ADA of 140, which is equivalent to September enrollment of 156. While this excess may be due in part to unknown reasons, it is possible to identify at least the following three contributing causes:

1. The unification of the Salina school district in the spring of 1965 brought in about 80 schoolchildren from former outlying rural school districts.

2. There have been reports of a number of sales organizations moving representatives to Salina, and manufacturing plants being planned or initiated in the area, in the wake of the closing of Schilling AFB.

3. There was undoubtedly some transfer of children from federally connected to nonfederally connected status when the job of a child's parent was eliminated at the AFB, but the parent stayed on in Salina. In the fall of 1964, there were 304 school children of approximately 340 Salina civilian base employees, and by the fall of 1965, the number of Salina civilian base employees had

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* Total school enrollment was based on the annual September 15 count; 3(a) enrollment was supplied by Schilling AFB, and 3(b) enrollment was estimated at 250 children, from the 300 households of AFB personnel estimated to be living in Salina.

Table C-1

COMPARISON OF SCHOOL ATTENDANCE
AND FINANCIAL DATA--SALINA, KANSAS
(Fiscal Years 1959-64 and 1966)

Item	(1) FY 59	(2) FY 64	(3) FY 59-64 Growth Rate (percent per year)	(4) Two-year Growth Factor	(5) Projected FY 66 Data	(6) Present FY 66 Estimate	(7) Present FY 66 Estimates as a Percentage of Projection	(8) Percentage Change, FY 64 to FY 66
1. Salina schools ADA								
a. Section 3(a) ADA	570	1,135	*	*	*	320	*	-71.8
b. Section 3(b) ADA	1,275	1,757	*	*	*	225	*	-87.2
c. Subtotal 3(a) + 3(b)	1,845	2,892	*	*	*	545	*	-81.2
d. Nonfederally connected	5,470	6,343	3.0	1.0609	6,730	6,869	102.1	+8.3
e. Total ADA (c + d)	7,315	9,235	4.8	1.0983	10,143	7,414	73.1	-19.9
2. Assessed valuation								
a. Total (thousands)	$50,003	$60,203	3.8	1.0774	$64,862	$64,939	100.1	+7.9
b. Per ADA (2a ÷ 1c)	6,836	6,519	-0.9	0.9821	6,402	8,758	136.8	+34.3
3. Current expense of education								
a. Total (thousands)	$2,094	$3,623	11.6	1.2455	$4,512	$3,546	78.6	-2.1
b. Per ADA (3a ÷ 1e)	286	392	6.5	1.1342	445	478	107.5	+4.1
4. Teachers								
a. Total number	288	392	*	*	*	380	*	-3.1
b. ADA/teacher ratio (1e ÷ 4a)	25.4	23.5	*	*	*	19.5	*	-7.0

* Predictions on the basis of 1959-64 changes would not be meaningful for this item.

fallen to about 90, a reduction of about 74 percent. If a proportional number of children shifted from nonfederally connected to federally connected status, this number could therefore be as high as 0.74 x 340, or 225 children, equivalent to an ADA of about 200. (The actual number could be considerably less than 200, because of departure or transfer of former civilian base personnel, but no data are available on this subject.)

Item 2 - Assessed Valuation. The increase in total assessed valuation (line 2a) was practically identical with what was predicted on the basis of FY 59-64 trends--actually, 100.1 percent of the predicted value. However, expansion of school district boundaries because of the 1965 unification brought in over $3 million of new assessed valuation to the school district, or about 5 percent of total FY 66 assessed valuation. Therefore, the FY 66 assessed valuation within the FY 64 boundaries of the Salina Board of Education was some 5 percent less than the predicted value. This is a significant reduction compared with the predicted assessed valuation growth of about 3.8 percent per year, or 7.7 percent for the two-year period FY 64-66.

While FY 66 assessed valuation was determined as of January 1, 1965, only six weeks after the announcement of the phase-out, it is possible that some property assessments were affected adversely, because a large number of homes came on the market suddenly at reduced prices (mostly without buyers). Another probable cause contributing to the less-than-expected level of FY 66 assessed valuation was the sharp decline in Salina residential construction during 1963 and 1964--the apparent effect of housing supply catching up with housing demand (only 146 building permits were issued in 1963, and 93 in 1964, compared with an average of 398 per year for the preceding 9-year period).

The FY 66 assessed valuation per ADA (line 2b) is $8,758, or 136.8 percent of the $6,402 that would have been predicted on the basis of the FY 59-64 trend of 0.9 percent per year. This type of increase was to be expected, and illustrates the effect of removing federally connected children without a proportional reduction in assessed valuation. This 36.8 percent increase of assessed valuation per ADA over the predicted value would, of course, enable the school district to raise 36.8 percent more taxes per child at the same property tax rate.

Item 3 - Current Expense of Education. While the total current expense of education for FY 66 (line 3a) is only 78.6 percent of predicted TCE, the TCE per ADA (line 3b) was 107.5 percent of the value predicted on the basis of an average 6.5 percent annual increase from FY 59 to FY 64. This is a significant excess--$478 instead of the predicted $445. The excess of TCE/ADA over its predicted value is probably due to the inability of the school district to reduce operating costs proportionately to the reduction of students. See Item 4 on next page.

Item 4 - Teachers. Trends for FY 59-64 have not been computed for teachers because the continuing decline in the ADA/teacher ratio that took place from FY 59 to FY 64 would invalidate a simple trend line for the total number of teachers. However, it is evident from column 8 of Table C-1 that the 3.1 percent decline in teachers from FY 64 to FY 66 is much less than the 19.9 percent drop in total ADA. Significantly, the employment of personnel other than teachers (custodians, principals, clerical and administrative staff, etc.) has shown a slight increase between FY 64 and FY 66, from 121 to 125; total employment, therefore, dropped from 512 to 505, a reduction of only 1.4 percent. The rise in TCE/ADA can therefore be traced directly to the inability of the school district to make reductions in staff proportional to the loss of students. The maintenance of the same size school plant, the same numbers of classes in many schools, with only slight losses of students--these actions and similar ones prevented a sharp drop in the school staff.

To illustrate these facts from the FY 66 school budget: total salaries are presently budgeted at $2,808,000, with social security payments adding $190,000; if a total personnel reduction of 19.9 percent had been effected instead of the actual reduction of only 1.4 percent and salaries had declined proportionately, a further decrease of about $560,000 would have been realized in the current expense of education. This reduction would change the TCE for FY 66 (line 3a) from $3,546,000 to $2,986,000, and TCE/ADA (line 3b) from $478 to $403, or only 90.5 percent rather than 107.5 percent of its predicted value.

Salina School Revenues

Comparison of Salina school revenues between FY 64 and FY 66 is complicated by initiation of a new Kansas state school foundation program in FY 66 that greatly increases the proportion of state-to-local school funds. The effect in Salina, for example, has been a reduction of the general fund school tax from 21.16 to 7.28 mills (of which 2 mills are for the new technical school and therefore are not applicable to Salina public school purposes). Other types of school tax rates (including the county-wide school tax rate) have also been affected by the new state aid legislation, so that the total local school tax levy has dropped from 38.26 mills in FY 64 to 30.40 mills in FY 66.

Because of the foregoing changes, an "equivalent general fund and county-wide school tax rate" was computed for the Salina schools for FY 66 that would have raised the following tax levies:

1. The same percentage of current expense of education (45.8 percent) that would be raised by the FY 64 general fund and county-wide school tax levy of 27.55 mills, or $1,623,000, plus.

2. The anticipated reduction of $403,000 in P.L. 874 entitlements between FY 64 and FY 66 (from $553,000 to $150,000).

The total of the above two amounts is $2,026,000, which would have required a tax rate of 31.20 mills based on the FY 66 assessed evaluation of $64.9 million. This rate is 113 percent of the FY 64 rate, and is 108 percent of the 29.00 mill rate that would have been predicted based on the 2.6 percent annual increase in the total local school tax rate between FY 59 and FY 64. The tax increase would therefore be larger than expected by 2.20 mills.

Had the school budget been reduced by $560,000 through the proportional reduction in school staff that was discussed earlier, the "equivalent general fund and county-wide school tax rate" could have been reduced by 3.95 mills to 27.25 mills, a figure that is only 94 percent of the predicted value of 29.00 mills. Thus it can be said that the inability of the school district to reduce staff proportionately would have been a cause of higher-than-expected local school taxes, in the absence of the change in the Kansas state aid program.

Qualitative Observations on the Transition

Salina school officials have reported severe difficulties in planning for future school attendance, in part because of lack of advance and accurate information about Department of Defense plans for Schilling AFB, and in part because of a lack of knowledge of the effect of the phase-out on nonfederally connected school attendance. The lack of information on plans for Schilling AFB appears to be continuing. For example, the Salina Journal has recently reported that the Department of Defense plans to make increased use of the base housing units for wives and children of military personnel who have been assigned overseas without their families; hence, the need for education of federally connected children may continue or even increase in Salina in the near future instead of declining. However, the school district has not yet been notified (as of about November 1, 1965) of future plans for the base housing units.

The lack of knowledge by school district officials of the wider effects of phase-out that could be anticipated on the Salina community perhaps argues for some sort of manual or handbook giving year-by-year case histories of other phase-outs, to facilitate local planning for future phase-outs. In Salina's case, a significant influx of business and industry appears to be taking place, stimulated in part by local and federal efforts to interest newcomers, and in part simply by the departure of the Air Force, which caused a much readier availability of reasonably priced housing and a freedom from what some enterprises consider an undesirable proximity to a large military base. Other aspects of the Salina transition, such as the efforts of the Federal Housing Administration to prevent the numerous houses vacated by military personnel from depressing prices too severely, could not be studied within the scope of this project but would doubtless be of interest from the broader viewpoint of community planning for the transition period.

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