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ABSTRACT

The thrust of this report is the necessity for educational planning to serve the population projected for Colorado in the future. This report analyzes the size and nature of the population of this state in the years to come and measures the educational effort that must be made to meet expressed needs. The population is analyzed with respect to quality as well as quantity. Concern is expressed for effective regionalization and development. The five most important topics discussed are planning, evaluation, management information, accountability, and the emphasis on learning, rather than teaching. (Author/CK)

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COLORADO PEOPLE and COLORADO EDUCATION

AN ASSESSMENT OF EDUCATIONAL NEEDS BASED ON THE POPULATION, ECONOMY AND SOCIAL STRUCTURE OF COLORADO

COLORADO DEPARTMENT OF EDUCATION
DENVER, COLORADO
Byron W. Hansford — Commissioner of Education
DENVER 1970

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Colorado People and Colorado Education

An Assessment of Educational Needs Based on the Population, Economy, and Social Structure of Colorado

Prepared Under the Direction of

Arthur R. Olson

in the

Division of Research and Development

This Publication was Prepared Under the Provisions of Title III of the Elementary and Secondary Education Act of 1965 as a Study of Educational Needs in Colorado.

COLORADO DEPARTMENT OF EDUCATION

Office of Instructional Services

W. HENRY CONE, Assistant Commissioner

Denver, Colorado

June 1970

FOREWORD

A persistent problem in education is concentration on the immediate. There is good reason for that kind of concentration, for we are constantly confronted with the necessity of performing large and vital tasks with inadequate resources—hence we devote much of our time, our ingenuity, our professional acumen, to ways to get the job done despite the thinness of the resource.

While we must continue to do that, it is also imperative that we raise our sights and consider what we ought to be doing, not this year or the year after that, but at some point in time—say five years or ten years or even fifteen or more years hence. The insights we receive through this forward-looking process will often modify what we are doing now. And this is one of the things that planning is all about—to fit our present actions into a long-range program, so that procedures of meeting present needs blend well with the methods for meeting predictable future needs.

Federal programs, and particularly ESEA Title III, invite the states to determine the critical needs of education on the basis of demographic and socio-economic data.

This publication meets that requirement. It analyzes the size and the nature of the population of Colorado and its sub-regions in the years to come, and measures the educational effort that must be made to meet expressed needs. But it does more, it considers also the discoveries that have been made about the learner and the learning process, and weaves these discoveries into the data. It thus takes a qualitative as well as a quantitative approach to the question, "What should Colorado public education be about in 1975 . . . in 1980 . . . in 1985?"

Not everyone will agree fully with every concept in this publication, nor with the ordering of priorities it suggests. Indeed, as Commissioner of Education in Colorado, I might order the priorities differently. There is no need to agree in full, but it seems to me imperative to agree on two things:

1. That ordering of priorities is necessary.
2. That the priorities explicit in this publication are reasonable and attainable, even though in a particular part of Colorado in a particular year another ordering of priorities might be necessary.

The publication serves the central and vital role of pointing out the necessity of planning—of which the ordering of priorities is a first step. If it serves no purpose beyond that of bringing the State and particularly its educational leadership to an appreciation for long-range planning, it will have served its purpose well.

The central thrust of the publication, then, is the necessity for educational planning to serve well the population projected for Colorado in the years to come.

That population is analyzed with respect to quality as well as quantity. A very high quality population is projected—more highly educated adults holding better jobs and making more money; more competent learners; more competent, specialized and secure teachers; all supported by psychological and technological advances. One result will be a sureness of cognitive learning—the learning of skills and competences—that will release resources for affective learning—the learning that makes a good, effective human being.

There is concern for effective regionalization—the pooling of resources in large areas to provide quality education. Two types of Regional Center are discussed: A center of resources which flow out to serve learners wherever they are, a kind of Center with which Colorado is having some experience; and a Center to which learners come from a large area—a kind new to Colorado. It is also noted that such Regional Centers could serve purposes beyond education; that they could, for instance, be health centers as well. The discussion of Regional Centers illustrates the nature and the freedom of the publication. There is no State Board of Education policy favoring such Centers; but the discussion of the Centers could not be construed as offensive to Board policy; and it is a discussion that Colorado educators could profit from. It is included in the publication, then, in the spirit of, "What do you think of this? How would it work where you are? Does it make sense for 1980? Should it become part of our forward planning?"

There is also much concern for development of the ability to measure and evaluate and report what is going on in education; to be able to make a case for the greater resources education will require by pointing out what current resources have been able to produce.

While all these concerns are acknowledged, the publication takes a strong stance that three concerns ought to be dealt with everywhere in Colorado if public education is to serve well the public of the 1970's and 1980's. These three concerns are universally available early childhood education; expansion and rationalization of occupational education; and curricular revision to recognize the nature of the emerging population and the requirements of the emerging society.

Were I asked to name five topics of importance to all educators over the next few years, I would name these: planning, evaluation, solid management information, accountability, and emphasis on learning rather than teaching. This publication touches on all five. On three it leans heavily. On two—evaluation and accountability—its touch is light, but it refers to a companion project of the State Department of Education to develop an evaluative system so that intelligible accounting can be made. With these, and its delineation of needs and concerns, it thus poses most of the outstanding questions confronting public education in Colorado, today and in the future.

As State Commissioner, I ask all readers of this publication: What do you think? I invite your comments, your discussion, your thought. I would be pleased if this publication served to focus attention of Colorado educational leaders on Colorado's educational challenges, problems and opportunities.

Byron W. Hansford
Commissioner of Education

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Introduction and Summary

Summary of Chapter One: Forces and Decisions

Education shapes people; and people shape education. They shape it simply by virtue of what they are; for what they are controls what they need, what they demand, what they will support.

The people of Colorado are changing. They are growing in numbers, in the quality and the demands of the jobs they hold, in income. This publication analyzes this demographic growth for Colorado as a whole and for its regions through 1985.

They are growing also in the amount and quality of education they have, and in their demands for education for their children. It is the task of public education in Colorado to understand this growth and change and to prepare for it. For it is certain that Colorado education will change greatly between 1970 and 1985; and the question before educators is whether that change will be in response to external forces or shaped by sound, farsighted educational thinking.

The stance of this publication is that Colorado educators can and must set the educational direction of the future. The publication presents the demographic forces that will be at work; sets forth the implications of those forces for educational decision-making; and demonstrates how the implications then must refer back to the demographic factors to quantify the resources that must be in place if Colorado education is to do for Colorado people what it must. This three-step process addresses itself to three questions:

1. How many people of what kind will there be?
2. What must education do for them?
3. What does this mean in terms of necessary resources?

The publication sets forth imperatives and concerns. It recognizes that local priorities will be set in response to local needs and local decisions. It warns, however, that local districts that do not meet the outlined imperatives and concerns will be in danger of failing to serve their people well.

It emphasizes the necessity of planned change. It agrees that this year's work and next year's work are the immediate concern: But it takes the position that work done this year and next should be in the context of a long-range plan. It maintains that work done in 1970 and 1971 should move in the direction of the target set for 1985; so that in fact by 1975 substantial progress will have been made toward that goal.

Summary of Chapter Two: Regions and Planning

Any projection of numbers in the future is subject to limitations. Projections quantify the foreseeable. They cannot quantify that which cannot be solidly predicted. The population projections for Colorado as a whole are generally reliable, for they view Colorado as a microcosm of the United States, moving at a different rate but in the same general direction as the nation as a whole. For most of the regions of Colorado, the projections are reliable for long range planning; but short range planning requires closer, on-the-spot measurements. In some regions of Colorado, the unexpected will probably happen in the next 15 years — big new industry, an unexpected shift in employment opportunity—that will change significantly the demands made on education. Good planning is flexible enough to accommodate the unexpected. Its essence is to know the direction of the trend, and to remain open enough to handle the velocity of the trend.

While the numbers are of great importance, they are only numbers. They do not describe the educational program; they only specify how many people will have need of the educational program. Only in understanding the nature and needs of those people can the proper educational program be devised.

This publication presents much of the demographic date by regions of Colorado. The regions are State Economic Areas (SEAs) as drawn by a state agency. They are not offered as appropriate educational regions. It is apparent, though, that Colorado has a need for educational regions standing somewhere between the individual school districts and the state as a whole. No attempt is made here to define these educational regions by size or by number. That is an important piece of unfinished business for the state's educational leadership. The purpose of presenting data in this publication by regions is to urge the leadership to start thinking in regional terms; for the requirements of education in the 1970s and 1980s will be such that regional cooperation will be necessary.

Summary of Chapter Three: The Users of Education

Learners in Colorado in the 1970s and 1980s will be different from those of the 1950s and 1960s. They will be more capable; and yet in the 1950s and 1960s Colorado learners were among the most capable in the nation, a conclusion based on such considerations as educational attainment of adults and proportion of technical and professional people in the work force. This enhanced capability of the learners places a grave burden on education: The appetite will be great, and the servings must match.

The projections of income indicate that Colorado will be able to provide the greater servings. Yet any resources, no matter how great, are limited. Education is but one of the necessary public services that will need greater resources. It is imperative therefore that education present its case well in order to demonstrate its need for the resources, and the benefits flowing from its use of the resources. Thus evaluation and assessment assume great importance. Ways must be found for education to measure outcomes as against objectives, and to report to the larger community how

it is using present resources and what it can accomplish with increased resources.

While substantial increases in numbers of learners are projected for Colorado, the growth will by no means be uniform throughout the state. Tables show where the expected great growth will occur. The pattern of growth raises questions of whether the present method of distributing resources will meet the needs of the future—a question examined at more length in Chapter 7.

While the Colorado learner in general will be more capable in the 1970s and 1980s, specific concerns will remain a great challenge to educators and to citizens alike:

Concern 1: The ethnic minorities.

Concern 2: The handicapped.

Concern 3: The poorly motivated.

Concern 4: The lowest third of a more competent whole.

Concern 5: The older person in need of continuing occupational and general education.

Summary of Chapter Four: The Providers of Education

The teacher of the 1970s and 1980s will be different from the teacher of the 1950s and 1960s.

He will be freed from much drudgery by a number of developments: By better understanding of the learning process so that success of most learners in learning can be taken for granted; by technological aids that will transfer much routine work away from the teacher and indeed even away from the school; by expansion of the team concept with increasing specialization.

He will thus be able to become a manager of learning rather than a dispenser of information. Equally important, he will be able to devote a great deal of his time and attention to those outcomes usually called affective—to helping young people become good citizens, good parents, good people.

He must be prepared for these new roles. It will take the best efforts of the teacher training institutions and of the entire educational profession to bring this preparation to the two concerned groups—young people just entering the teaching profession, and those already engaged in the profession.

The demographic data indicate quite clearly that many sections of Colorado will remain through the 1980s so sparsely populated that they will not be able to support the new trends in education as isolated school districts. It is a basic principle that no citizen in Colorado should suffer educational deprivation because of his geographic or economic circumstance. Meeting the need in the face of the demographic data points up the necessity of multi-district cooperation through such means as Regional Centers.

These considerations lead to two more concerns:
Concern 6: Advances in the preparation of the new kind of teacher.

Concern 7: Development of regions and of Regional Centers.

Summary of Chapter Five: The Thrust of Educational Effort

To meet the educational needs of the 1970s and 1980s, every section of Colorado must push forward strongly on three imperatives:

Imperative 1: To make available to every Colorado child a high quality early childhood education experience. An appropriate model would be educational centers for children of about the ages of three to eight.

Imperative 2: To provide to every Colorado person who needs it, regardless of age, occupational education relevant to the job market and to his abilities and desires.

Imperative 3: To rethink, revise and restructure the entire curriculum between early childhood education and occupational education.

There will be other imperatives in various regions and school districts. But these three are common needs throughout the state. They must be based on firm ground, which leads to two more concerns:

Concern 8: Cooperative effort by public education and the universities and colleges to revise and restructure the curriculum.

Concern 9: Research, including longitudinal research and classroom research, on educational problems.

Summary of Chapter Six: Space for Learning

Colorado will have to make a heavy investment in school facilities in the years between 1970 and 1985.

The need may be on the order of a billion dollars, in current dollars and based on current costs. This would provide for replacement of obsolete buildings, space for an expanding school population, and for expanded early childhood education. If the burden were evenly spread over the 15-year period, the requirement would be on the order of $66 million a year in new construction.

This construction need will not be evenly distributed throughout the state. The fact of its unevenness, taken together with current problems of the bond market and the size of the need, indicates the wisdom of a penetrating new look at methods of financing construction.

Concern 10: Rationalizing the financing of school construction.

While for the sake of shorthand, this need is termed "school construction," a look into the future strongly suggests that the product should not be schools of the traditional type: for learning in the future will take place in groupings, in places, and with resources and techniques not generally in use during the 1960s. Educational leaders making plans based on understanding future needs will try to provide space for learning suitable to those needs.

Summary of Chapter Seven: Paying for Education

Financial resources required to operate the

schools will far outweigh the resources required to build schools.

A conservative estimate is that by the time the increase in numbers of learners projected in this publication takes place, the operating cost will be half a billion dollars more a year than it is now. This is 7.5 times the amount projected to build schools annually.

It appears certain that a substantial part of this increased funding will come from Federal sources; and on this decision Colorado educators and citizens can have but modest influence. There are grave questions, though, regarding the proportions of funding to come from state and local sources; and it is up to Colorado educators and citizens to face this question squarely. They still have time; it is important that they use the time to prepare for the future, rather than sit back and wait for the future to wash over them.

Concern 11: Rationalizing the financing of school operations.

Chapter One
Forces and Decisions

Public education in Colorado in the 1970s and 1980s—its quality, its style, its effectiveness—will be in great part the result of forces that are already in operation in 1970.

These forces can be understood and analyzed as vectors—forces that shape velocity as well as direction. In a simple and mechanistic sense, the direction and the velocity can be projected out so that a prediction can be made: "Public education in Colorado in 1975, in 1980, and in 1985, will be like this—unless something happens."

The chief "something" that can "happen" is human intervention. Decisions made by humans—by all citizens, and in particular those who are professionally competent in the field of education—can alter the vector in both its dimensions, direction and velocity. Education need not, in any year of the future, be like "this" which is predictable as the result of analysis of existing forces: it can be like "that" as the result of informed decision.

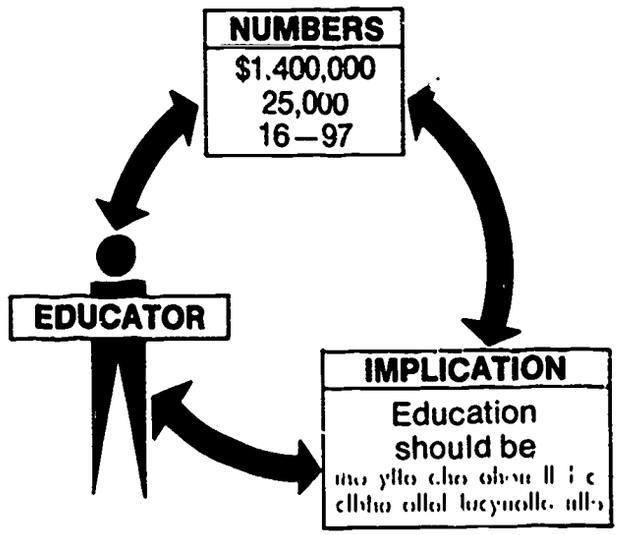
This publication deals with both the forces that already are influencing the future, and the decisions that can modify the future. It examines the demographic forces that are visible in Colorado in 1970: the numbers of people living in any locality, their age distribution, their employment, their income, the rate at which they move from one place to another. Demographic data are essential to a vision of education in the future, short range or long range: they establish key parameters—the numbers to be educated, their characteristics, the ability of the area to pay for education.

But this publication goes beyond the demographic data. It poses questions, and provides the outlines of some answers. It does not stop at reporting how many people will be where. It moves beyond to say, "What ought education do about those people?" It avoids the error of much demography, of wallowing in numbers. It reminds educators of some of the things they know, of some of the principles they believe in, and poses a challenge: the challenge of bringing to the quantity of people reported by the demography the quality of education (and therefore of life) that the informed and decisive educator of 1970 is capable of delivering.

The Connecting Link

Its focus is threefold: demography, educators, implications. The three are totally intermingled; and "implications" is the constant connecting link between the demography and the educators. To the demographic statement of numbers there is the steady counterpoint of, "and what are we educators going to do about it?"

The audience of the publication is thought of, then, as the people who can do something about education. But this is an amorphous crew. It includes, of course, the State Department of Education, with its charge of leadership. It includes the Federal input to state education, particularly through Title III of the Elementary and Secondary Education Act with its insistence on being on the cutting edge. It includes every local school district with its enormous power to shape the quality of education of its children; the pro-



fessionals who administer and staff the schools, the laymen who sit as governing bodies, devoted in the American tradition to education and demanding, in an equally American tradition, to be shown that proposed change will improve the quality of education. To all of these people who can affect the quality of education, it offers demographic facts and probes beyond to the educational response.

The publication stops at this point. But there is a remaining major step for local school authorities everywhere in Colorado to take. That is to go back to the demography, after making the educational decision, and to establish in disaggregated, numerical terms what the decisions mean. The process becomes clear in a specific instance, as with occupational education. The demography says that the mix of employment and the levels of income in areas of Colorado are moving in a vector. The educational implication is that occupational education must change and grow in order to prepare people for the changing conditions—and that is as far as this publication goes. The next step is local—for each concerned educator to take a close look at the demographic facts applicable to his region of interests; to see what the age distribution of people in that region is and will be; and to calculate how much more and how much different occupational education must be in 1975, in 1980, and in 1985, to match reality with the potential. It is in this final process that the local educator will make the closest use of the demographic facts presented in the Appendix; it is with those facts that he will determine what shape and size of job his district should start now to lay the groundwork for.

This publication projects the chief demographic characteristics of Colorado over the long range and short range future: its population, the mix and level of employment, and income expectations. These are not forces subject directly to the control of educators. They are, however, very directly subject to human decision; and the decisions that humans make are very intimately related to the education they have had. In this very real sense, there is no inexorability, and there is a heavy responsibility on education to help shape human beings whose decisions will make the 1970s and 1980s in Colorado brighter than the 1960s.

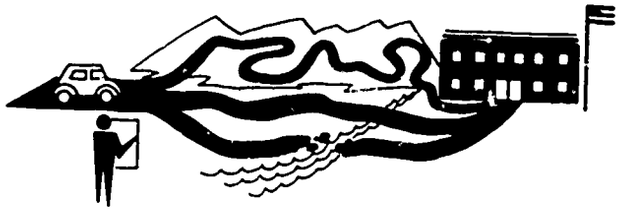
The stance from which the projections are made is this: judging by past trends and what is now known and believed about such important determinants as birth rates and economic growth, then it appears reasonable that population, employment and income at key years in the future will be of these dimensions. Should anything unforeseen and of major importance occur—should, for instance, the birth rate rise significantly—then the projections will be quite far off the mark.

These decisions on family formation and birth rate will be made by individuals now engaged in formal education, or recent graduates of the formal education enterprise. In this sense, education is a principal determinant of the accuracy of these projections; for the people making the decisions will make them in response to the formal education that helps shape them.

The educative process that has occurred and that, willy-nilly, will occur has then much to do with producing the characteristics of Colorado and its people that will be the solid facts that must be dealt with by education in the next two decades.

Role of Educators

But educators have a far more precise, even scalpel-like role to play in determining the shape of



education in the future. External forces will exert a role under any circumstances. In the absence of determined and creative effort by educators, these external forces will be the principal sculptor. If, however, educators make this effort to plan and shape education in the form they professionally decide it should have, then they will be the principal potters; and external forces will be the potter's wheel that they use.

This, then, is the choice facing Colorado educators in 1970: whether to ride with the tide of events, or whether to boldly insert these professional judgments that will control the tide.

The assumption of this report is that Colorado educators will opt to be the principal shapers of education of the future; and that they have the necessary professional expertise now to outline the desired shape.

This report draws such an outline.

It is not offered as **the** model, **the** outline. It is presented as **an** outline that melds 1970's professional judgments to the demographic realities of the 1970s and 1980s in such a way as to make operative an effective educational system. Other outlines are of course possible; and from the outline offered here there will of course be deviations, some intentional, some accidental. This is in line with the plurality and the local control that have long distinguished American public education; it will be a positive good—provided that every deviation represents a professional judgment applied to reality.

Further, the outline is simply that—the broad sketch with little detail. An attempt to introduce detail would compound the possibility of unreality.

The same principle holds true for the demographic projections made in this report. They are more accurate at the broadest levels, and become less accurate with disaggregation. Projections for the state will be more accurate than those for multi-county areas; projections for multi-county areas will be more accurate than those for individual counties; and, were the projections to go below the county level, then projections for the counties would be more accurate than those for constituent areas of the counties.

Nor is there any particular virtue or need to fill in detail on education in the 1970s and 1980s. That will properly be the decision of those then responsible, who, closer in time and in location, will have far more precise knowledge of the characteristics of their area to which education must respond than this report could pretend to.

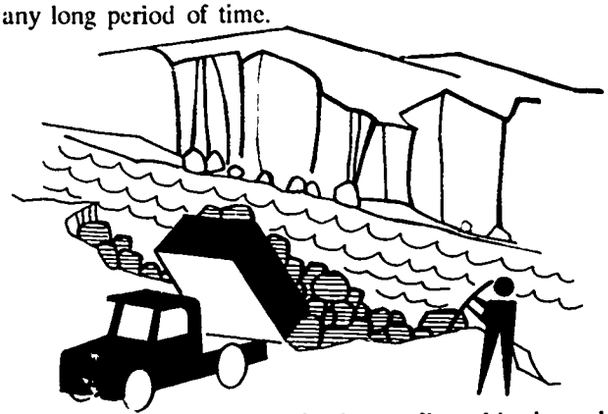
This outline, then, is offered as a broad framework, posing to educators in Colorado—and through them, to the broad and determining citizenry—this proposition:

Here is a broad outline of what education in Colorado could be in the 1970s and 1980s; a kind of education which our professional judgment in 1970 says would be effective then. If you can improve on this outline, please do. But have an outline: have a goal toward which to move; and shape your movements now toward that goal.

The Middle Ground

The spirit of this report is neither utopian nor mean. It does not assume the best of all possible worlds; it does not assume that the blackboard is now blank, and that a brand-new design can be drawn without restraint; it recognizes that there are things in place—people and buildings and institutions and traditions—that will have their place in shaping the reality of 1985. But it does not look on these things as barriers which will prevent the intelligent shaping of the future. Rather, it looks on them as one bank of the stream, of which the other bank will be built of professional and human judgments; so that the dimensions and the velocity of the river of education will be determined both by that which exists and by that which will be created.

The spirit of the report is also one of dynamic change and growth, within the context of reality. The basic reality operative here is this: Colorado is a microcosm of the United States, and will grow and prosper or the reverse in proportion to the growth and prosperity of the United States. It will continue to grow relatively more quickly than the United States as a whole; but its growth is contingent on that of the nation. Similarly with education: Colorado is in this area too a microcosm of the United States. It can be a leader; but if history is any guide, it cannot be very different in education from the rest of the nation for any long period of time.



The demographic projections reflect this dependency on national growth rates.

So, too, do the educational projections. They are built in a 3-step process, the first of which is answering this question:

What should American education be like in the 1970s and 1980s?

With that question answered, there are two more questions posed by the demographic realities:

What are the unique characteristics of Colorado that indicate departures from the American norm?

What are the unique characteristics of sections of Colorado that indicate departures from the Colorado norm?

The questions are all posed in terms of future years. The more immediate task before Colorado educators, of course, is shaping education for here-and-now—for 1970-71. Obviously this here-and-now task will engage most of their attention. What this report urges them to do, however, is to lift their sights to the future; to make their here-and-now decisions so that by 1985 their dreams will have become reality; and so that by 1975 they will have made significant progress on the march from 1970 to 1985. They should be hesitant now about making decisions and more particularly long-term commitments that are not contributory to the reality they hope to have in place by 1985.

1985 is not all that far away. It is, indeed, so close in educational terms that there can be reasonable doubt whether any sweeping change in education can take place in that period. Looking backward for a similar period sets the focus for this doubt: are American schools of 1970 significantly different from those of 1955? Or are they about 90 percent the same as those of 1955? Most observers of most schools would be inclined to say that they are about 90 percent the same. So the question arises whether schools of 1985 will be about 90 percent the same as the schools of 1970.

A Climate for Change

This report assumes they must not be and will not be for these reasons:

1. There was not in 1955 a deliberate and statewide attempt to shape the schools of 15 years hence; and therefore the shape of the schools of 1970 resulted more from external forces than from professional judgments. Now, however, the deliberate introduction of professional judgment to shape the schools of 1985 is being brought into play.

2. The time is ripe for a bold leap forward. In almost every field, the history of progress has been a long period of small gains; then suddenly, when all elements of the infrastructure were in place, the gigantic leap forward. Agricultural productivity, which has exerted and continues to exert a most profound influence on Americans and the places they live and the institutions within which they operate, made its progress in this way. There were small gains in productivity as each of a number of developments occurred: development of a higher level of education among farmers; of artificial fertilizers; of better seed; of Agricultural Extension's work of promoting better practice; of powered farm machinery. With all these developments in place, agricultural productivity suddenly made the gigantic leap that has now for decades sent millions of Americans away from the land and into the cities. Similarly with science and technology; a centuries-long history of isolated discoveries, suddenly resulting in an infrastructure in place that has produced today's technological age—and the related fact that 90 percent of all scientists in the world's history are alive today. Similarly, it appears that the necessary infrastructure is now in place in education, and that the time has come for a great leap forward. The chief elements of the infrastructure are a corps of educators for whom the word professionalism no longer represents just an ideal but a growing reality; a citizenry long dedicated to education in general terms but now aware as never before of its relationship to the quality of life, to economic growth and even to survival; a citizenry far better educated than its predecessors and far more willing to recognize and respond to clearly-defined needs; a growing awareness that our present level of education is not suited to our aspirations; and finally, a present and predictable level of prosperity that will underwrite what must be done. From this infrastructure, the leap can be made.

The report, then, assumes that there can be by 1985 so massive a change that, while schools of that year will have grown out of the schools of 1970, they will be recognized as quite different in character. They will be responsible to the same broad goal as they . ow are: The development of the potential of each individual to its fullest. But they will go at the task differently; and, if this report serves its purpose, will go at it better.

Chapter Two
Regions and Planning

Demography deals with numbers. It is therefore capable of being misunderstood, misinterpreted and misused in two fashions:

- Too much attention can be focused on the precise numbers, as if, having been written, they become frozen and absolute for all time.
- Too little attention can be focused on the reality for which the numbers stand—people, and the condition of their lives; and in particular young people, and their educational needs.

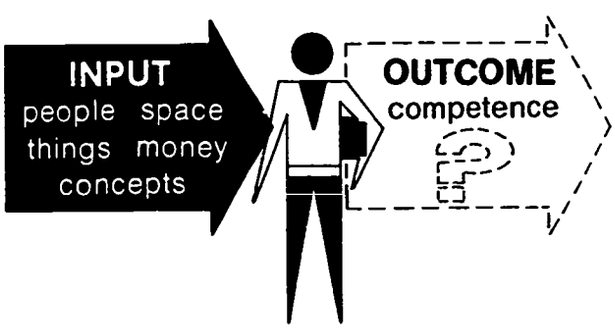
Demography—the description of numbers of people living in a given area and their ascertainable conditions of life in a given year—is a most useful tool, once its purposes and limitations are understood.

Its purpose is to give decision-makers the raw material on which to base their decisions. In fields dealing with physical resources, this purpose and its result can be easily seen. Those concerned with delivery of water, for example, learn from demography how many people are to be served; multiply by empirical formulas; and know how much water they will have to deliver by what year. People dealing with human resources are in a different position: for, both happily and exasperatingly, simply knowing how many people there will be doesn't give a clue as to how they should be served in basic ways—such as by education. Simple rules of thumb—"Every 30 pupils need a classroom with 900 square feet of space and 1.5 teachers"—have little utility when one is looking at the 1970s and 1980s, when neither "classroom" nor "teacher" may have the same meaning it did in 1960. Nothing in demography releases the human from his necessity to make decisions. All it can do is give him an idea of the number of people his decisions will affect.

The limitations of demography are quite sharp. The limitations apply to both the raw material and methodology.

The raw material in common use deals with population, employment and income. These are useful things to know about. There are other useful things, too, that rarely make their way into demographic studies. Since the purpose of the study reported in this publication is educational planning, it would be most useful to have other raw data: How well people learn, in school or out; how many people follow the formal educational track without interruption, how many drop out and stay out, how many drop out and come back and perhaps drop out and come back again. The first question—how well people learn—is the most vexing and perhaps the most important question that could be asked; and though unending hours of research and discussion have spilled around it, there is yet no absolutely reliable measurement—in part because the goals of education are so broad that they defy the temporal limitations of measurement.

Testing has made some progress in isolating the strengths and weaknesses of a particular child in a particular area so that his teacher can know where to concentrate effort. Testing has equally had some success in cutting broad cross-sections of a population on such bases as predictable success in college or in a given occupation. But testing—or more properly, assessment and evaluation—have had little success to date in matching an individual's actual competence against the competence required of him. It has taken but baby steps toward determining a person's knowledge, his characteristics as a social being and a citizen, his capacity to be a good parent, his usefulness in his present and future communities: and all these are goals of education. Throughout the nation, groups are now at work on this vexing problem of assessing and evaluating how well an individual does in reaching his potential development, and how well a school system does in helping its pupils achieve what the school system defines as its objectives. The Colorado State Department of Education is seriously at work on this central question of measuring educational outcomes. The success of this endeavor will have much to do with the future of education in Colorado; for increasingly those who are called upon to support education—citizens in general, and in particular the Legislature—are insisting that there be proof of accomplishment to match the growth of support.



Measuring the Measurable

So demography measures what is measurable: and typically this is the trinity of population-employment-income. The methodology consists of taking at least two years in the past for which data are available; examining them for trend; and pushing that trend out into the future. It is not a simple mathematical exercise. Human judgment must enter to make it meaningful. The movement of rural people to the cities, for instance, has been one of the great Post-World War II trends; but to push it unabated into the far future would be most dangerous. Dangerous, because the pool of people of an age suitable for migration to the cities is beginning, in many places, to dry up; dangerous too because it is never safe to say that people will continue forever any trend, no matter how strong. (The rate of church membership in the late 1940s and early 1950s is an example of trends and their breaking. Had people continued to join churches at that

rate, then by now practically everyone in the United States would be a church member; and clearly this is not so. Birth rate is a particularly important example of the finiteness of trends. A continuation of the high birth rate of the 1950s would have the country desperately overpopulated very quickly; a continuation of the lowering rate of the 1960s would have the country underpopulated, though not so quickly. Expert demographers continue to expect an upturn in the birth rate: but none is expert enough to say when it will happen.)

Finally, demography cannot accommodate the large and important externally-produced change. In Colorado, this is of particular importance. The predictions about population revolving around an economic method of extracting oil from shale are a triumphant example of this: within a few years of success, an extra 100,000 people in the affected area; within 10 to 15 years of success, a quarter-million more people. Should success be achieved in the projection period through 1985, then all the figures in this report—not only the figures for the immediate shale area but those for other parts of the state—will be skewed.

Other types of decisions speed up predictable timetables dramatically. For instance, a decision to build a 5000-employee plant in an area may produce in two years the growth that has been projected over 10 years; the decision to construct a new ski area may double or quadruple the permanent population of a mountain area within a year or so, while conservative projections would call for little or no growth. A decision to close or cut down in size a military base may produce a decline in population in an area in which steady growth has been projected. These are hazards unavoidable in demography.

The SEAs

The base measurement unit used for the demographic study underlying this report is the State Economic Area—SEA. These are groupings of counties making up logical economic areas; they have the same general kind of economy, though, of course, with internal variations.

The SEAs used throughout the study are as follows: SEA 1: Moffat, Routt, Rio Blanco, Garfield, Jackson, Grand, Gilpin, Clear Creek, Summit, Eagle, Pitkin, Lake, Park, Teller. Chaffee, Gunnison, Mineral, Hinsdale, Ouray and San Juan counties. SEA 2: Mesa, Delta, Montrose, San Miguel, Dolores, Montezuma, La Plata, Archuleta, Saguache, Rio Grande, Alamosa, Conejos and Costilla counties. SEA 3: Larimer, Weld, Morgan, Logan and Sedgwick counties. SEA 4: Phillips, Washington, Yuma, Douglas, Elbert, Kit Carson, Lincoln, Cheyenne and Kiowa counties. SEA 5: Crowley, Otero, Bent, Prowers, Baca, Las Animas, Huerfano, Custer and Fremont counties.

SEA A: Adams, Arapahoe, Denver and Jefferson counties.

SEA B: El Paso County.

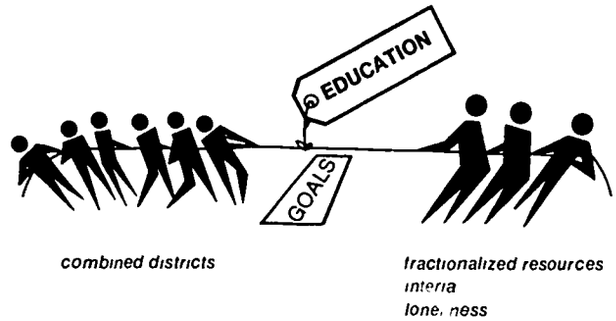
SEA C: Pueblo County.

SEA D: Boulder County.

Rationale of Regions

It must be kept in mind that SEAs and similar regional groupings are intellectual constructs. They do not really exist as entities. They have no legislative power, no tax power; they have no direct impact on people. They simply make it easier to think about large stretches of country where people live.

But these and similar groupings also carry the potential of serving real needs. As the State Department of Education has pointed out in another place ("Organizing Colorado's School Districts for the Challenges Ahead," June 1969). some 70 percent of the 181 Colorado school districts still have fewer than



1200 pupils. Argument can rage about whether this is a sufficient number for current educational services. But there is no doubt that it is very small a number for the range of educational service that will be required in the years ahead. The traditional way to approach this kind of dilemma is to reorganize districts so each will have more pupils. There is an alternative way—grouping districts in planning regions, or in common service regions, or even in administrative and taxing regions that have enough people for efficiency and full service but can still leave the local districts with a large measure of autonomy. In some sections of the nation, though not in Colorado, still an alternative way of handling the problem is under serious consideration: Creating a single state-operated school system on the Hawaii model.

The State Planning Office is now engaged in trying to carve Colorado into large planning districts. Its current model shows eight planning districts, as distinct from the nine SEAs (State Economic Areas) it had previously designated and which are used as the planning areas in this publication. The broad outlines of the eight are quite similar to those of the nine. The precise number of planning districts that will eventually be designated is not the point. The point is that in drawing such districts there is recognition of the need for meaningful planning and eventually for meaningful pooling of resources in geographic regions that are smaller than the state but larger than the county.

Drawing an imaginary line around a number of counties and saying that their populations have roughly comparable economic bases says nothing directly about education—about what is going on there, or what should. Anyone knowledgeable about Colorado school districts would recognize this immediately in looking at the maps. He would be able to say, "There are 14 school districts in this planning region. Twelve

of them are quite comparable to one another, with a common body of lacks and a fairly common body of strengths. The 13th district, though, is unlike the other 12; it is in fact clearly one of the leading Colorado districts, with few of the weaknesses of the 12. The 14th is in a period of self-analysis and of a significent experimentation. It may turn out to be almost anything in a year or so; something very good, or a district that tried some exciting new things, then gave up and slipped back into its old ways. There is no way to make one valid educational statement about all these districts."

He would be quite right. Demography doesn't attempt to describe educational programs; it merely describes the regions in which educational programs go on. It says, in this instance, "Here are a number of counties containing 14 school districts which there is valid demographic reason to examine together; and which would make a logical demographic unit for planning or for cooperative efforts." It would then be up to the people locally responsible for services—for educational services—to decide within that framework what groupings would make most sense for them. The 14 districts described in the example could make one valid educational planning and cooperative region, with operational recognition of the leadership potential of the 13th district and of the experimental value of the 14th. Equally, educational leaders might decide the appropriate educational units would be two regions, or three.

Regional planning and regional cooperation seem necessary, and certain to emerge. The process may extend over a period of time. The creation of planning and cooperative districts will respond to tradition and political pressures as well as to cold logic. This report presents its demographic findings by region, and urges other findings and studies to be undertaken and reported on a regional basis, to underscore the conviction that regionalization will occur, and in the hope that getting school districts to think about themselves in relation to their neighbors will speed up the process of effective regionalization.

As these regional groupings occur, all reporting of data should be in terms of the regions, as well as the school systems that comprise the regions. Much as good data reporting facilitates both short range and long range planning, so regional-plus-district reporting facilitates both broad educational decision-making and scalpel-like individualized improvements.

Chapter Three
The Uses of Education

For the Colorado educator, the number of persons who can be expected to be living in various areas in various years is an indication of the dimension of the task before him. These numbers are given in full in the Appendix, and in summary in this chapter.

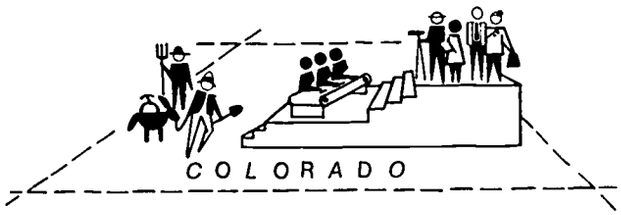
The numbers, however, serve in no way to define the elements of the task of education.

The elements of the task respond to at least two broad questions:

What is the nature of the person to be educated —what are his internal needs?

What is the nature of the society in which he will function—what are its needs to which the individual must respond?

One important aspect of the nature of the society is implicit in the projection data dealing with employment.



In its early history, Colorado's economy was geared to the primary or extractive level—mining and agriculture. It has, of course, moved into the secondary level of manufacturing; but its large leap has been into the tertiary level of service. The entire American economy is now in motion away from the primary level, still with heavy emphasis on the secondary, but with the big drive toward the tertiary level of service. Colorado is a microcosm of the United States; and it will share this move toward a tertiary economy. The important point is that it already is far ahead of the rest of the nation in its emphasis on the third level; and that its share of the national trend toward the third level will take off from a large base. Its move into a service-oriented economy can therefore be expected to be of very large dimension.

This is one of the demographic facts in the Appendix of major significance for education. Many of the demands that have been put on public education in Colorado in the past decade have resulted from the fact that its economy means a high proportion of professional and technical workers in the population; and their educational demands are far from muted. As their numbers and even their proportions in the population rise in response to national economic forces, their demands on the educational establishment will become even greater.

With the usual bows to individual differences, this series of statements is true here and now for the general population:

1. People with higher-paying jobs than the average (such as technical and professional workers) are better educated than the average.

2. Such people demand and usually have the political muscle to get better education for their children.

3. Their children are usually better able to take advantage of the current range of educational opportunities.

Minorities and Education

The higher education of the average Colorado resident has been a matter of record since the 1960 Census report on the number of median school years completed by persons aged 25 or over. Utah ranked first, with 12.2 years. Colorado tied for second (with Alaska, California, Nevada, Washington and Wyoming) with 12.1 years of schooling for the median adult of that age group.

What is frequently overlooked in that report, though, is that the median achievement for Colorado blacks was 11.2 years. This, too, was second in the nation, ranking after New Hampshire, whose relatively few Negroes had a median attainment of 11.7 years. The median black in Colorado had an educational attainment higher than the 10.6 years of all U.S. residents, and higher than the 10.9 years of all U. S. white residents.

In contrast, the educational attainment of Colorado's Spanish-surnamed persons over the age of 25 was only 8.6 years; which is a little less than the average attainment of all United States non-whites (9.2 years).

These are serious matters confronting the educator—indeed, confronting anyone interested in Colorado's future. They pose a situation which is quite different from that obtaining in most other parts of the United States; for Colorado is almost unique in having both a fairly high black population and a quite high Spanish-surnamed population. If it were able overnight to deliver the same quantity and quality of education to blacks as it does to Anglo-whites, it would have solved only the smaller portion of its ethnic-education problem. (That blacks in Colorado do not profit from the same quality and quantity of education as the majority is taken for an absolute fact, not requiring argument here. There is no implication that the state is not willing to deliver the same quality of input; there is recognition of the fact that, for a variety of reasons which have come into focus in the 1960s, the result is inadequate.) There is a larger task confronting the state in providing equal quality and quantity of education to the Spanish-surnamed as to the rest of the population; larger because there are more of them than there are blacks, and larger because they start farther back.

This publication is not the proper vehicle for examining how this quality and quantity of education is to be provided blacks and the Spanish-surnamed. A number of efforts in this direction are going forward

in the state; and more will be mounted. They must succeed if the state is to have a reasonable future; both the democratic ideal and the hard logistics of economic growth demand success. The viewpoint of this publication is that success in attaining educational objectives with minority populations is a condition precedent to full success of any of the educational advances urged in the publication.

Ethnic Distribution

Tables and statistics on numbers of non-white residents of Colorado in 1960 are presented in the Appendix.

Some of the highlights are these:

• 97 percent of the Negro population lived in Metro Denver, Colorado Springs and Pueblo.

• Spanish-surnamed persons, nearly four times as numerous as Negroes, showed a different distribution pattern. Spanish-surnamed persons were more than 50 percent of the population in Conejos and Costilla Counties; between 30 and 50 percent in Alamosa, Archuleta, Huerfano, Las Animas, Rio Grande and Saguache Counties; and between 10 and 30 percent in Pueblo, La Plata, Crowley, Otero, Bent, Prowers, Eagle, Lake, Gilpin and Weld Counties. (Again, the caution is entered against confusing percentages with numbers. The listed counties are those with the highest **proportion** of Spanish-surnamed persons. However, the area with the highest **number** of Spanish-surnamed persons was SEA A, the Denver Metro area, with more than one-third of all Spanish-surnamed persons in the state. And long-term migration patterns clearly show a continuing flow of Spanish-surnamed persons to the Greeley-Fort Collins-Denver-Colorado Springs-Pueblo strip.)

• The Indian population was essentially concentrated in Denver and SEA 2, the southwest. The probability is that current and future migration from reservations will be to nearby cities and to large metropolitan areas.

The importance attaching to minority children can be observed in the data concerning relative fertility of groups. In the Denver area, for example, blacks constituted only 4.2% of the 1960 population, but had 5.2% of the children under age 5. In El Paso County, blacks were 4.2% of the population, but had 5.9% of the pre-school children.

While the Hispano population was only 6.5% of the Denver area population in 1960, they had 8.8% of the pre-schoolers.

These demographic matters pose challenges to the educator. For they tell the educator what kind of people he will have to educate, as well as how many; and it is up to the educator to determine what amount and what kind of educational intervention is required to help carry these diverse people to their full potential. Hence, as always, the focus is not on the naked numbers—but on what Colorado educators can and should do.

Income Projections

Data dealing with income (and its close tie to employment) are difficult to come by and very difficult to project. The basic series collected by the major Federal agencies which are the source of most demographic data are not compatible. Some series are based on per capita income, some on family income. Some tie employment to the county of residence of the worker, while others count employment by location of plant, no matter where the individual worker lives. Reconciling these different postures is a lengthy and tricky matter.

The income figures reported in the Appendix noted a slowdown in the rate of increase; so that, in fact, Colorado per capita income fell below the national average in 1964 for the first time in more than a decade and continued lower through 1968. The demographic study which is the basis of this report did not project income into the future, because of the uncertainties and the conceptual difficulties involved. However, it should be noted that other studies have projected.

For instance, "An Analysis of Colorado's Economy with Projections to 1975," prepared for the Public Service Company of Colorado by the Business Research Division of the University of Colorado, has this to say: "The National Planning Association ranks Colorado first in per capita income growth potential in the Mountain States area, predicting Colorado per capita income will reach $3670 by 1975, exceeding the national average by eight percent."

The same publication projects Colorado total personal income growing from slightly less than $2 billion in 1950 to $5.5 billion in 1966—and then to more than $7.3 billion by 1974.

This projected income growth will more than match the population growth; and will be a reflection of an upgraded employment mix as well as of increased national affluence and of such less cheery factors as inflation.

This will mean that the absolute capacity of the state to support public services will have increased considerably. This **could** mean an increased capacity to support education: But in a world in which absolutes hardly ever operate, it need not. The capacity could be diverted to other public services; it could be diverted to paying off the increased load of debt for public services; it could be diverted to meeting private rather than public demands. It is one of the important tasks of educators to press the claim of education to support from this increased capacity; not as an antagonist of other worthy services, but as a principal among the services a society owes itself if it is to continue to grow and prosper. To present its case and its claim, education needs solid facts. This again highlights the importance of the efforts now going forward on assessment and evaluation; for these are the ways in which education can demonstrate that it is actually achieving worthy goals.

In the United States generally, the level of education—and the ability to profit from years spent in education—are expected to rise substantially through the years immediately ahead.

"A Profile of Education in America," an in-house publication of American Telephone & Telegraph

Table I. Colorado Ethnic Minority Population
In State Economic Area 1, By County, 1960

COUNTY	NEGRO	INDIAN	SPANISH-SURNAMED
Chaffee	28	8	732
Clear Creek	1	3	17
Eagle	2	26	1,187
Garfield	18	4	285
Gilpin	2		75
Grand	6	2	91
Gunnison	13		142
Hinsdale			3
Jackson		3	58
Lake	1	45	901
Mineral		1	3
Moffat	7	2	207
Ouray			217
Park			39
Pitkin	15	1	4
Rio Blanco	15	1	32
Routt	24	1	99
San Juan		1	145
Summit		5	22
Teller			20
SEA 1 Total	132	103	4,279

Table II. Colorado Ethnic Minority Population
In State Economic Area 2, By County, 1960

COUNTY	NEGRO	INDIAN	SPANISH-SURNAMED
Alamosa	53	7	2,494
Archuleta	10	6	953
Conejos	3	10	4,476
Costilla	1		3,065
Delta	5	16	1,173
Dolores		137	3
La Plata	31	650	2,346
Mesa	88	40	2,612
Montezuma	26	772	901
Montrose	5	114	1,291
Rio Grande	14	12	3,477
Saguache	1	5	1,411
San Miguel		354	132
SEA 2 Total	237	2,123	24,334

Table III. Colorado Ethnic Minority Population
In State Economic Area 3, By County, 1960

COUNTY	NEGRO	INDIAN	SPANISH-SURNAMED
Larimer	86	10	2,160
Logan	7	23	839
Morgan	12	16	1,642
Sedgwick	25	2	322
Weld	101	57	8,831
SEA 3 Total	231	108	13,794

Table IV. Colorado Ethnic Minority Population
In State Economic Area 4, By County, 1960

COUNTY	NEGRO	INDIAN	SPANISH-SURNAMED
Cheyenne			8
Douglas	2	5	191
Elbert	7	9	62
Kiowa	8	1	17
Kit Carson	2	1	69
Lincoln		3	58
Phillips	1	1	31
Washington	4	3	46
Yuma	1	5	75
SEA 4 Total	25	28	557

Table V. Colorado Ethnic Minority Population
In State Economic Area 5, By County, 1960

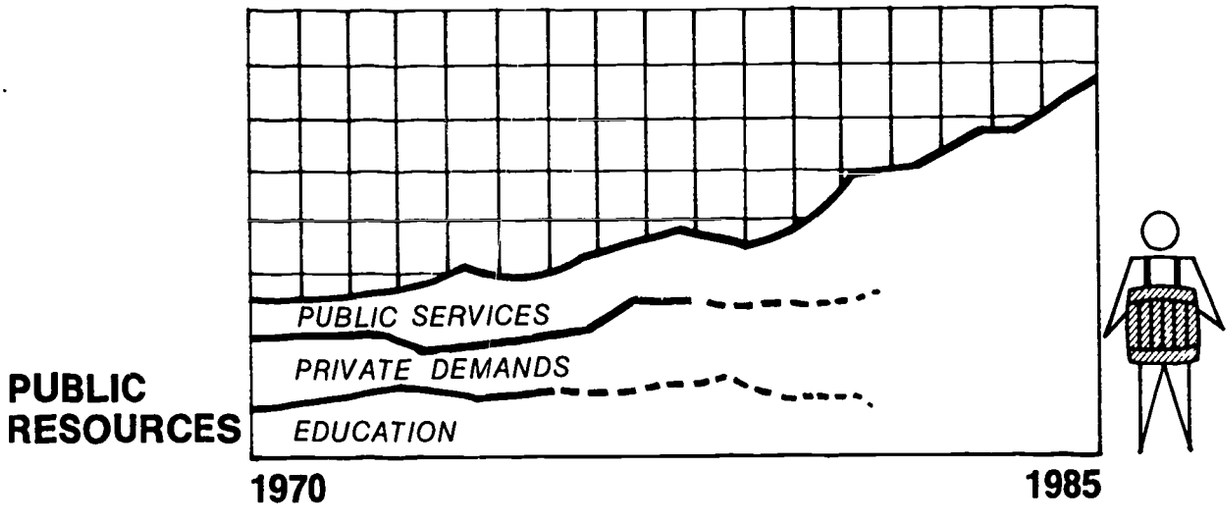
COUNTY	NEGRO	INDIAN	SPANISH-SURNAMED
Baca	2	43	172
Bent	31	6	1,454
Crowley	5	1	1,023
Custer			93
Fremont	199	12	1,798
Huerfano	54	2	3,608
Las Animas	56	9	7,443
Otero	140	7	5,328
Prowers	16	2	1,424
SEA 5 Total	503	82	22,343

Table VI. Colorado Ethnic Minority Population
In State Economic Areas C, B and D, By County, 1960

COUNTY	NEGRO	INDIAN	SPANISH-SURNAMED
Pueblo (SEA C)	2,247	87	25,437
El Paso (SEA B)	5,069	203	6,135
Boulder (SEA D)	141	87	3,103

Table VII. Colorado Ethnic Minority Population
In State Economic Area A, By County, 1960

COUNTY	NEGRO	INDIAN	SPANISH-SURNAMED
Adams	633	94	8,542
Arapahoe	390	131	2,987
Denver	30,251	1,133	43,147
Jefferson	133	109	2,515
SEA A Total	31,407	1,467	57,191



compiled after study of a broad spectrum of pertinent data and projections, estimated that the 10.6 years of schooling for the median U. S. resident found in 1960 would rise to 12 years by 1970 and to 12.3 years by 1980.

Harold G. and June G. Shane, writing in the January 1969 National Education Association Journal, "Today's Education," after a similar review of responsible, forward-looking literature, estimated the I.Q. of the average child in the 1970s would be from 125 to 135. (This, of course, is based on current I. Q. norms; the numerical norms of the future will be changed so that the "average" child will still score around 100.)

Implications, Main Stream and Detours

Already some college officials estimate that the average entering freshman today knows as much as the average sophomore entering on his second semester in the 1950s, as a result of changes that have taken place in both the schools and in society; so that in the 1980s the average freshman entering college may be on the same plateau of knowledge as was the average college graduate of the 1950s.

Direct implications of these large-scale changes are examined in detail in a subsequent section dealing with curriculum and organization.

Suffice it here to say that the 1970s and the 1980s lay out for Colorado this picture: More people, including more young people; at a higher level of employment; at a substantially higher level of income; with a greater thirst for education and a greater capacity to benefit from education.

This picture is rosy, in general terms. Challenging to educators and to public policy makers, yes; but rosy. While rejoicing in the rosiness, Colorado educators will also have to bear in mind these facts:

- While the general ability to profit from educational opportunity will rise, there will always be a lowest third. Martin Mayer puts the matter harshly (*The Schools,* Harper and Brothers, 1961): "Nobody anywhere in the world knows how to give a secondary education to the bottom third of the intelligence distribution. . . . We must learn to provide that [universal education,] not merely desk space for our uneducatable third." Perhaps he is too harsh: But the point remains that no matter how high average I. Q. rises, there will still be a bottom third and a bottom half; and there will still be a top tenth, who perhaps are still getting less cream out of the educational bottle than they could profitably digest; and that within all the thirds and both the halves there will be great differences more significant than similarities of measurement numbers; and that the task of education will still remain to enable each individual to fulfill his potential—not respond to a universal mold.
- Poverty as it is now known may well be eliminated; and hence a very heavy constraint on education may be removed. There is hope that all may be well fed and well clothed, even if the hope now seems distant that all will be well housed: But this by no means suggests that all will be well motivated. There is no teacher of experience who has not been baffled by the young person who apparently has all he wants out of life and has all the trappings of an eager learner but he just doesn't care. There will be no reduction on the challenge to motivate.
- Racial minorities can be expected to be well on their way to full participation, competing on relatively equal terms for jobs, for housing, for income, for status. Perhaps blacks and other minorities will not have reached full equality, but they will be far closer to it; for the forces in that direction now at work in the land are irreversible. This, too, will remove a heavy constraint on education; and it is here that it becomes important for Colorado educators to remember that in their blacks they are dealing with a group better educated than all Americans in general. Hence the challenge to all of American education—to speed up the process of equalization, the day of full participation—rests particularly heavily on Colorado education: For from his forward position the Colorado black is capable of moving most swiftly, given the assistance of such powerful social forces as good public education. For Colorado's Hispano population, the starting point is less advanced and the need for speedy progress even more clear.
- Despite the general advances, there will remain a distressingly high number of handicapped children of one kind or another—handicapped physically, han-

Table VIII. National Incidence of Handicap Among Children

TYPE	DISTRIBUTION PER ONE THOUSAND CHILDREN
Mentally retarded — educable	21
Mentally retarded — trainable	2
Visually handicapped	1
Auditorily handicapped	6
Speech impairment	35
Physically or perceptually handicapped	13
Emotionally disturbed	10
Socially maladjusted	10
Total number of handicapped per 1000 children	98

Source: Adapted from "Colorado Education at the Crossroads," Alexander, Fleming, Mase and Wiles; Colorado Department of Education, December, 1967.

dicapped mentally, handicapped emotionally. The accompanying table is illustrative of the present; about 98 of every 1000 children, nationwide, have significant and detectable handicaps. Advances in medicine may eliminate some of the handicap; advances in education may compensate for other elements of the handicap; but there will remain many handicapped children with very special needs—an area in which Colorado now has no occasion for particular pride. It is estimated that the state now delivers special education programs to only one-fifth of the children who need it. This is rather better than the nation as a whole does; but the point of this publication is not to compare Colorado with the rest of the nation, but to point up the great needs in Colorado education as related to demographic data through the 1970s and 1980s. Operating on the normal 10 percent handicapped rule of thumb, weighing the population projections particularly by age cohort, and assuming public education will spread both downwards with earlier entry age and upwards with more holding power and more occupational education—then it would appear that Colorado will have some 70,000 young candidates for special education in the 1970s and 1980s. It would be ideal if there were no such thing as special education: if every child got the education appropriate to him without one kind being called "special" and the other, presumably, "regular." That may indeed occur during the period of projection. The point is that there will be very large numbers of children, scattered through all Colorado regions, in need of what is now called special education.

Thus, though the mix of students will have changed and been upgraded, the essential elements of the educator's job will have remained unchanged. He must still recognize and serve differences; he must still motivate; he must still opt to accelerate desirable social change; h ust still mingle compassion and understanding with demand.

A Note on the Older Student

The focus of this chapter dealing with the student has been the younger student—the person of school age (expanded by several years as they may well be by the 1970s and 1980s) expected to participate without break in formal schooling.

The employment projections make it perfectly clear that there will also be the older student: The wage-earning adult who will have both the need for upgrading of skills for a changing job market and the desire for more generalized education because he is a more aware person.

Population Changes

Projections of Colorado population, by area and by county, are contained in the Appendix. Some of the highlights, including migration trends as well as total population, are commented on briefly here.

The age distribution shown in the tables is a matter of utmost concern to educators planning for the future. By county and by area, they report the number of persons aged 0-6, or those becoming eligigible for early childhood education; persons aged 6-19, or those in the normal current school attendance span; and those aged 20 or over, many of whom will be candidates for occupational education and training.

Though the Statewide trend is one of increasing population, it is far from uniform. Further, the proportions of age cohorts also differ from one area to another.

The total population of Colorado will increase about 88% over the 1960 level by 1985. Two areas —B, El Paso County and D, Boulder County—will more than triple their populations by 1985. Two rural areas covering the southern part of the state—Area 2 in the West and Area 5 in the East—will grow much more slowly, at rates of 30% and 18% respectively. The remaining five areas will experience increases ranging from 68% to 83%. In terms of growth rates,

the Boulder and Colorado Springs areas will be the leaders and can be expected to experience the most severe problems of adjustment to greater numbers.

The Denver area (SEA A) will have the greatest absolute increase (713,000 people), followed by El Paso County with 295,000. Boulder's 164,000 increase will further swell the metro Denver population, and 131,000 more people will live in SEA 3, northeast, most likely in Greeley, Ft. Collins, and places nearer Denver.

Pueblo's growth will be less dramatic, with only an 80,000 increase. However, the share of total increase in state population distributed among Denver, Boulder, Colorado Springs, and Pueblo amounts to 79% of the increase. If 100,000 of the 131,000 increase projected for SEA 3, the northeast, is concentrated in a triangle from Ft. Collins to Greeley to Denver, the emerging metropolitan strip extending from Ft. Collins-Greeley to Pueblo will encompass 88% of the total state increase in population, and by 1985 more than 80% of the state's population will live in this strip.

SEA 4, the east central part of the state, is projected to increase its population by 71%, or 32,000 people. Given the present relative paucity of population in the area, an increase of 32,000 could pose problems of expansion of educational facilities. However, from 1970 to 1985, 20,000 of the 20,500 population increase will be in Douglas County, adjacent to the Denver metro area.

Similarly, SEA 1's increase of 53,000 could be rather widely dispersed over a large area of this northwestern part of the state, posing problems of scale of facilities.

Clarification of this matter can be obtained from the table which contains details of county forecasts for 1970 to 1985. In the twenty counties of SEA 1, the northwest, only eight are expected to increase in population. Rio Blanco and Garfield are expected to gain 19,000 of the total SEA increase of 26,000. In any case, the mountain region increase will be fairly localized in the shale and ski-development areas. The seasonal nature of the tourist and ski business offer additional difficulties for educational planning.

Similarly, the 20,000 increase for SEA 2, in the southwest, is localized, with 75% of the increase in Mesa county alone.

As previously noted, the growth in Area 3, in the Northeast, will be concentrated around Greeley and Ft. Collins: 60,000 of the 64,500 increase from 1970 to 1985 will be in Weld and Larimer counties.

Growth in SEA 5, the southeast, will be slowest in the State. Despite a historically high birth rate among the Hispano population which is proportionally heavily represented in this area, it appears that population increase will be small, and localized in Prowers, Las Animas, Huerfano, and Fremont Counties.

Migration

Age and sex breakdowns concerning migration from 1955 to 1960 are analyzed in the full demographic study on file and are summarized here. During this period only Metro Denver and Colorado Springs experienced net in-migration. All other SEAs suffered net out-migration.

It is notable that both males and females in the 15-19 and 20-24 age groups tended to leave the rural SEA areas in large numbers. This undoubtedly was caused by limited job opportunities for young people in these areas. The southeast had the greatest net out-migration, 7,627 people. A majority were females and only this area lost more females than males.

The northeast also lost many young people, but unlike most other areas this area also lost a large number of elderly people. Presumably the latter group left for warmer retirement climates.

SEA 2, the southwest, experienced great losses of young people: 2,642 in the 20-24 age group alone offset the increases in most other age brackets, so that the area suffered a net out-migration of 2,654. It appears that job opportunities for youth were significantly less than for older people in this area, since the older age-groups accounted for some net in-migration.

SEA 3, the northeast, is unique in that it had net in-migration in the youth brackets, but losses in the older groups. This phenomenon is probably due to the location of Colorado State University and Colorado State College in this area. Many people in the 15-19 and 20-24 age groups enter the area for school. The 25-29 age group then shows net out-migration as degrees are won and the students leave the area. (A similar explanation applies to SEA D—Boulder—with respect to large net in-migration of young people and net out-migrating in the 25-29 age group.)

SEA 4, the east central portion, lost people in all age brackets, most heavily amoung the young, as did SEA 5, the southeast. Once again it is reasonable to infer that job opportunities are scarce in these areas, especially for young people.

SEAs B, D, and A experienced net in-migration. Only B, El Paso, lost young people (in the 25-29 bracket), many of whom may be presumed to have been recently discharged from the Armed Forces. Likewise, much of the increase in the 15-19 and 20-24 brackets was due to influx of military personnel in this area heavily impacted by the military.

SEA A's large in-migration of young people, especially females aged 20-24, clearly identifies Denver as a mecca for many of the young women who leave rural areas. A disproportionately high number of females ages 25-29 also migrated to Denver. For male in-migrants, the 20-24 age group exhibited a much less dramatic increase, while in-migrant males aged 30-34 and 35-39 far outnumbered their female age cohorts.

The Denver experience of 1955-60 suggests that females gravitate to the city at an earlier age than do males. The male influx did not exceed the female influx until the 30-34 age group. This may imply that young females face a tighter job market in the non-metro areas, or that opportunities are greater for young females than for young males in Denver, or both.

Underlying the SEA migration data is the decade-long impact of migration in the individual counties. Only 17 of the state's 63 counties had net in-migration during the 1950-60 period. Eight of these counties were on the Pueblo-Ft. Collins axis.

In SEA 1, only three of the twenty counties had net in-migration: Summit, Pitkin, and Chaffee. The 1960-70 pattern should be similar, with the ski-development boom accentuating the in-migration in Summit and Pitkin counties.

In SEA 2, Mesa, Montrose, Montezuma, and La Plata counties' populations were swelled by net in-migration. It is reasonable to infer that these counties may continue to draw net in-migrants, especially to the cities of Grand Junction, Cortez, and Durango, and possibly Montrose.

Only Larimer County's net migration was positive during the decade in SEA 3. It is certain that Ft. Collins has continued to attract movers, so the experience will most likely recur. Growth of Greeley is rather rapid, also, but may be a result of intra-county moves and thus not indicate much attractiveness to potential movers from outside the county and SEA. Continued expansion of Greeley, however, should at some point begin to include net in-migration from non-Weld county origins.

Net in-migration to Fremont county—also a lone gainer in its SEA—may be related to exurban growth in El Paso county, perhaps even to growth in Pueblo county.

Passing over Pueblo and El Paso counties (SEAs C and B), both of which are certain to repeat their recent history of net in-migration, it is notable that in the Denver area, the county of Denver had a very low net in-migration rate. This contrasts with the very high rates for Adams, Araphoe, and Jefferson counties. The total population of Denver county was estimated to have declined during 1964 and 1965, although the trend was reversed in 1966. It is safe to assume that in-migration will continue strong in the suburban counties, and will probably remain weak in Denver county. The Denver position is explained by its land-locked state; it simply has no place to expand, and therefore no way to make room available for many more residents. The city, of course, is very largely responsible for the continued high migration to the surrounding counties.

Chapter Four
The Providers of Education

Examination in the preceding chapter of the emerging kind of pupil who will attend the schools of the 1980s led to the conclusion that the teacher of the 1980s will be called upon to continue performing well-known if not always well-served tasks: recognizing and meeting individual differences, motivating, accelerating desirable change.

It is not at all certain, however, that he will be called upon to continue teaching; at least teaching in its traditional sense of one teacher, 20 to 35 pupils, a blackboard, an array of books, and a lot of talk of which the teacher contributes infinitely too much, all supposed to result in education of the pupils.

That kind of teaching is already beginning to lose ground. Grudgingly, of course: It is what most experienced teachers are used to; it is what the school board and citizens are used to paying for. Nevertheless, it is losing ground, as project after project demonstrates there are other ways of getting at the process that are effective and less demanding on the nonpedagogic skills of the teacher; that are more sophisticated in the use of equipment and space—and, which turn the emphasis from teaching to learning.

Previous State Department of Education publications have described a number of projects in the state which have concentrated on transforming the adult participant from a dispenser of information to a manager of learning. The approaches have been varied; the appraisal has been remarkable uniform—these attempts have stimulated the pupils to a high level of learning and a remarkably high level of self-responsibility; and (generally after an initial period of nervousness, of sense of loss of control of what is going on) have pleased and impressed the participating teachers, who have found themselves freed from the drudgery of being the source of all knowledge and able to devote their time to more basic things: motivation, understanding, expansion of concepts, relationships, growth in personal, social-citizenship experience and capability.

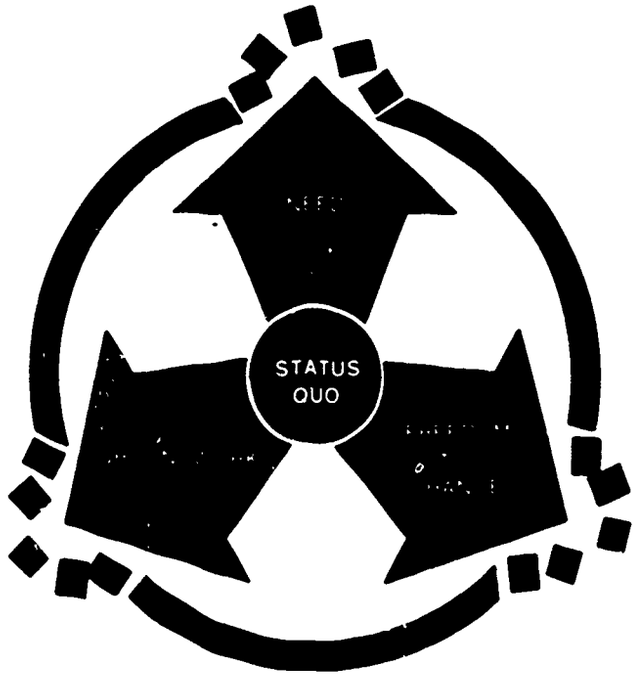
Preconditions for Change

Educational change is always slow—often frustratingly so. Yet it can be inevitable as well. It is inevitable when these preconditions coincide:

1. There is a clear case for the necessity or the desirability of the change.
2. The necessary groundwork has been laid in the development of support materials.
3. The threat of the change to educators has clearly been removed.

These three preconditions are already moving into position. During the 1970s they will have been in existence for some time, so that it is reasonable to predict that the method, focus and technique of the teaching-learning process will have changed radically.

The necessity of change is defined by almost every utterance of educator and lay citizen alike. There



is universal stirring; almost unanimous agreement that the schools must do better to equip pupils for the complexities of modern life. The explosion of knowledge, the implosion of specialization, technological change which eliminates some jobs and creates new training requirements for others, the snowballing confrontation of freedom with responsibility and its concomitant confrontation between the young and their elders—these and other challenges set the framework within which today's education and tomorrow's are called upon to function more effectively. It must be understood that this demand for change is issued in a climate of growing recognition that today's schools are performing better than their predecessors. As noted earlier, some college officials believe the typical high school graduate starting off his college career now is as advanced as was the sophomore entering on his second semester in the 1950s. This translates into 1.5 years of cognitive upgrading in about a decade; or just about the equivalent of the greater length of time spent in formal schooling expected to be recorded by the median adult American between the 1960 and 1970 censuses (from 10.5 years of schooling to 12 years, as noted in Chapter 3.) The argument is still heard that what was good in schooling for grandfather is good for grandson. But the main thrust has changed: What was good for son's older brother is by no means good enough for son.

The second necessary precondition to swift educational change is groundwork in development of support materials. One aspect of this is the understanding that is beginning to develop of the entire process of learning; holding out a reasonable hope that within a few years the process will be well enough under-

stood that it can be taken for granted that pupils will learn subject matter, through a variety of inputs and techniques, only one of which will be the face-to-face adult-to-child process that has been the rule in education for centuries.

Another aspect of the precondition of development of support materials is progress with technological aids—television, computer-assisted instruction, programmed learning and the like. These already have gone through the necessary but time-consuming processes of unthinking enthusiasm, of indifferent (and expensive) results, of planned exploitation commercially, of resistance to exploitation by educators. Their use has almost always been on a half-skeptical, half-witchcraft basis. But the technological craft has been growing to the point where it can be applied to education without invoking witchcraft. At the same time, a new generation is growing up: A generation of teachers who are familiar with these tools in the world outside education and therefore willing to consider them as tools for education, and a generation of learners some of whom are having experience with them in school. The time is rapidly coming when this new generation can use these things for what they really are—other tools in a array of tools, not miracle workers.

The Emerging Teacher

The third precondition for educational change is removal of threat. The development of the new curricula in the physical and biological sciences was a triumphant demonstration of this point: Classroom teachers were deeply involved in the preparation of the new curricula; further, classroom teachers were assured that an institutional structure would be set up in which they could, without incurring financial penalty, attend institutes that would equip them to teach the new curricula. Not threatened by the development, teachers espoused it.

They are now rounding into position where they need not feel threatened by changes in the learning process.

They are, for one thing, finding their way into the mainstream of American affluence. Although over the next several years the conflicts and the dislocations can be expected to be sharp, the trend is established. The American classroom teacher is on his way to financial recompense of a level commensurate with his investment in preparation.

More importantly, the American teaching corps now has the freedom of movement to concentrate on improving itself. The gross teacher shortage is over; as announced by the National Education Association in September, 1969, the shortage is now particularized rather than general. It is particularized in certain communities, especially the rural or otherwise sparsely-settled—a fact which gives the rural districts and the State Department of Education a grave responsibility in enhancing quality. It is particularized by skill, with shortages in some fields but with surplus of available teachers in others. The day of putting in charge of a classroom any warm body that holds a teaching certificate or could somehow get an emergency certificate is over. There can begin to grow a new emphasis on improvement in the profession.

A reasonably well-paid, dedicatedly self-improving profession is a profession well on its way to losing its sense of threat. It is thus a profession growing capable of weighing alternatives to getting things done, and of approving them if they do the things well.

The confident, professional unthreatened teacher will be prepared to accept learning that goes on elsewhere than in a building called "school" as of equal validity with learning that occurs in school. Many of the technological advances will be suited to learning at home, or learning in places and groupings not under school control. Indeed, for all of human history most learning has occurred elsewhere than in school, and still does. The difference is that with the new electronic advances, it becomes possible to assign part of the learning that has been the function of the school to non-school: So that, for instance, the pupil learning mathematics may learn some in a traditional classroom, some in a school learning center equipped with consoles, some at home over television or over telephone connected to a computer or a programmed learning instrument. This division of labor can be formalized, putting the teacher into the role of manager of learning.

The emphasis in this section has been on learning—that outcome of education usually called cognitive. The great tragedy of schooling for centuries has been that this outcome has been so difficult to achieve for all children that it has almost totally engrossed the energies of the teacher. He has not had a large enough arena in which to concentrate on outcomes of at least equal importance—for instance, the outcomes called affective or how a child is and acts and relates with the people in his environment. It is at least equally important that a child become a good citizen and a good parent as that he know a good deal and become able to make a good living; but the knowing-working objective has been so all-engrossing that the citizen-parent objective has had mostly lip service. A teacher freed from drudgery as the learning process is understood and as non-human inputs assist in learning is a teacher capable of spending time with pupils as human beings; and this is the great hope of the future.

Similarly with developments in team teaching, which too often has meant just putting together more of the same—such as three co-equal and presumably omniscient teachers with 100 pupils. Already the principle of the hierarchical team ranging from master teacher to teacher intern and student teacher, all contributing to the pupils but also learning from one another, is at play in some Colorado schools. This and similar notions of hierarchy, with the implication of difference in salaries, can be expected to be weighed universally on their own educational merits, as the profession grows in self-assurance.

The Teacher-Specialist

Besides becoming free to consider hierarchical arrangements, a self-assured professional will be more

ready to move to the specialization that is already a significant trend. By 1985 the generalist teacher may be as rare as the general medical practitioner is today. Instead, there will be many kinds of specialists: media specialists, information-input specialists, curriculum-input specialists, human development specialists, culture specialists as well as specialists in subject matter.

Dr. Byron W. Hansford, Colorado Commissioner of Education, alerted the state to the emergence of this new kind of teacher in describing members of instructional teams in the years ahead in "Enhancing Tomorrow's Learning in Colorado Through Supporting Services," a 1968 publication of the Colorado Designing Education for the Future Project. He listed these as some of the potential members of the team:

"Stimulator—one who stimulates the intellectual curiosity and starts the learning.

"Remedial specialist or personalizer—one who helps students with individual problems.

"Learning materials and equipment facilitator—one who is in charge of selecting and applying the proper materials and equipment.

"Programmer or writer—one who helps to develop new materials to meet the needs of the student.

"Large group presenter—one who makes presentations via ETV or through the use of other media to large groups of students.

"Researcher—one who synthesizes research results to improve the teacher-learning operation."

Change and Demography

The demographic realities of Colorado become crucial as these developments are examined. Although population growth is forecast rather generally throughout the state, it is slow growth in many areas that today have a low population base; so that in the 1980s many of these areas will still be sparsely-settled. In many areas it will be difficult to assemble conveniently enough persons of a standard description (e.g., children aged 3-8) for a successfully broad program, and impossible to assemble enough of a less standard description (e.g., adults capable and motivated to learn inhalation therapy). Yet if the principle of equal and expanding educational opportunity is to be observed, people are not to be penalized for the demographic characteristics of the area in which they live any more than they are to be penalized for the economic capacity of the area in which they live.

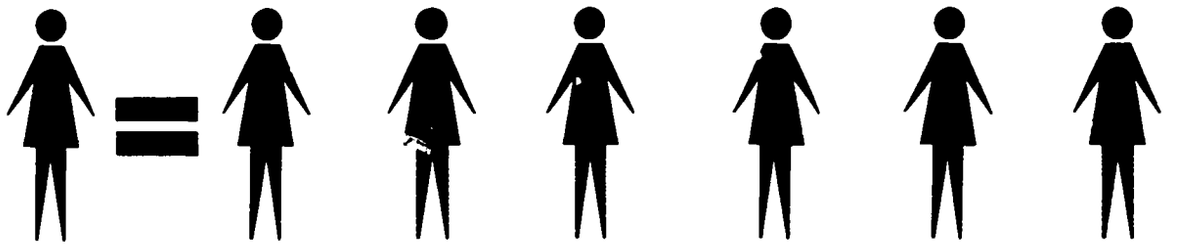
Three Implications

All this suggests very strongly that Colorado should concentrate on:

1. Development of technological aids to supplement teachers everywhere, and to provide education in those areas where teacher-specialists of the caliber and range required cannot be gathered.

2. Acceleration of the trend toward Regional Centers—education centers serving wide geographic areas through cooperative arrangements.

These Regional Centers can be thought of as two kinds: The first where people (specialists and learners) gather to teach and to learn, assisted by equipment impossible to assign to a smaller area; the second where educational resources are gathered to feed out to places where people gather to learn—specialists who will serve a large area on a kind of circuit ride; mobile labs of all kinds that will move around the area; central library and audio-visual facilities, television production and distribution facilities, central computer serving the entire area through remote access; centralized school food center, computerized bookkeeping and planning systems for use by the local school districts; and a range of other educational services.



The state has had some experience with the second kind of center—the kind gathering resources that move out—but none with the first kind—gathering learners in a regional center. The emphasis for the medium-range and the long-range depends much on which develops faster, communication or transportation; and at the moment the odds favor communication. It must be noted that the ingathering center is not supported by policy set—nor on the other hand is it rejected.

It might be noted that such Regional Centers may also serve as Regional Centers for health and other appropriate services. The lesson of demography is clear: In the continuing lack of large population bases in many areas of the state, new and ingenious cooperative arrangements will be necessary to stretch available resources to provide the necessary range of high quality services.

3. Preparation of teachers for their new roles and duties. This applies not only to new teachers, but in a particularly important way to the teachers now in the field. Almost without exception, they have been prepared to teach in the traditional isolated way, with

heavy emphasis on lecture and very little use of sophisticated equipment. They simply will not be able to teach that way in the future. It would be counterproductive to adopt a policy of natural replacement: to wait until this corps of traditionally-trained teachers retires before installing the new programs for which they have not been prepared. Rather, to staff the schools of tomorrow they must be trained in the techniques and the arts of tomorrow. This need not be a crash program; for the evolution of the schools of the 1960s into those of the 1970s and 1980s will take time, and the retraining of teachers can pace it. But it cannot be an infinitely delayed program either; for the school of tomorrow cannot arrive until the teachers of tomorrow are ready to staff it. It would appear that a program to retrain one-tenth of the present corps of teachers annually over the next 10 years would be feasible on the one hand, and fast enough to accommodate the change in schools on the other.

How and where can this retraining of teachers occur? At present there is no vehicle in Colorado to carry such a load. There is no agreement on the materials for the retraining—that is, no agreement on how to turn a generalist used to lecturing and concentrating on the cognitive into a specialist used to a variety of educational inputs and capable in the affective sphere. Were there such agreement, there is now no avenue to free teachers from duty long enough for the retraining to occur, nor a corps of trainers in the colleges and the school systems large enough and skilled enough to conduct the retraining.

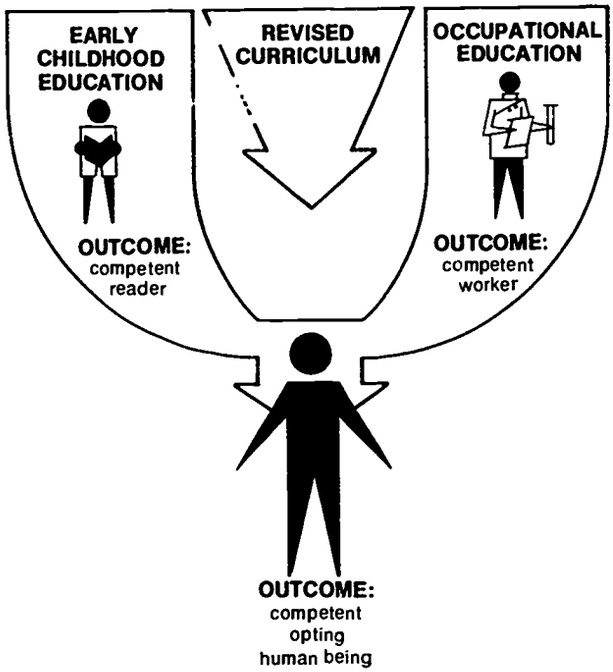
The problem is a large one. It is one that must be met simultaneously with a shift in the teacher-training institutions that will turn young men and women into the new kind of teacher.

It is one that is worthy of all the talent and all the resources that can be poured into it—the talent and the resources of the school districts, of the State Department of Education, of selected experts from higher education, of categorical federal funds. The combination of these talents and resources is crucial if the movement toward the schools of the 70s and 80s is to be sustained, vigorous and effective.

Chapter Five
The Thrust Of Educational Effort

Previous chapters have dealt with the numbers and kinds of people—particularly of teachers and learners—there will be in various regions of Colorado in 1975, in 1980, in 1985.

This chapter considers what public education must do to enable the learners to learn effectively and the teachers to be capable managers of learning and skilled shapers of good citizens.



Shaping the entire question is a conviction that every Colorado school district faces three large tasks in the next two decades:

1. Making available to every Colorado child a high quality program of early childhood education.
2. Making available to every Colorado person in need of it occupational education and training (a responsibility the school districts cannot meet alone).
3. Revising the elementary-secondary curriculum. This requires rethinking and restructuring the educational process in the years between early childhood and occupational competence, to meet the broad range of needs explicit at each age and implicit in the goal of a competent and participating citizenry.

These three objectives cannot be attained in a vacuum. They can be put in place and operate effectively only if three preconditions are met. Two of these have been described in preceding pages. The third is discussed in a subsequent chapter. The three pre-conditions are as follows:

1. Delivering to members of ethnic minorities the same quality and quantity of education delivered to majority members.
2. Delivering special education services to those children in need of them.
3. Rationalizing the system of educational finance to put the resources where the needs are.

These three large and overriding needs are deliberately chosen as imperatives. They flow in part from broad educational principles, and in part from the essential demographic reality emphasized throughout this publication: Colorado has a growing and changing economy that will require a growing and changing system of educational services; Colorado has a growing and changing population that demands a growing and changing system of educational services.

There should be no misunderstanding that these are imperatives. Nor should there be slavish adoption of these as the only imperatives in every area of Colorado at every time between now and 1985. Local conditions will demand other priorities; but it is the position of this publication that any district that does not adopt these three high up on its lists of imperatives is in danger of doing a disservice to its people.

Centralization in Education

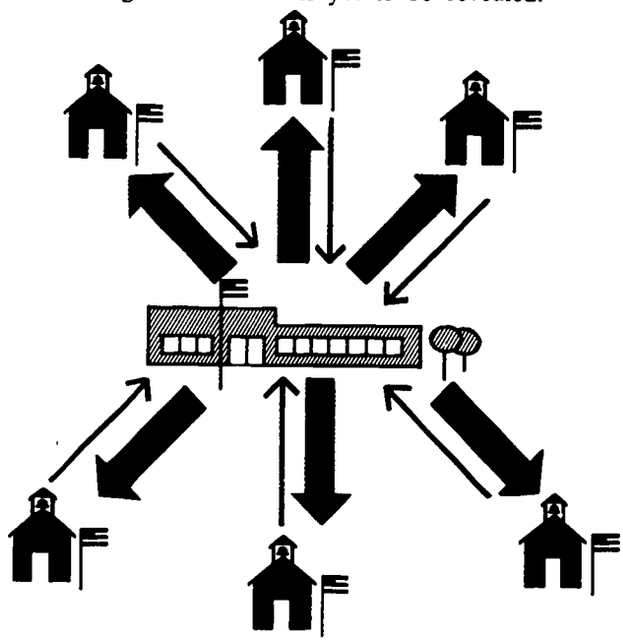
This statement of three clear imperatives for all Colorado school districts comes at a time when the whole system of educational governance and educational control is in more tension than it has been for years; and when the outcome no longer responds to easy slogans such as "federal assistance, state responsibility, local control."

The NEA Journal for October 1969 discussed this question of control in these terms:

> " On the surface, it would appear that the structure for educational decision making in the 1970s will be similar to the present framework of federal, state, and local units of government, with formal and informal interest groups and individuals competing for positions of influence. While the structure's appearance will be familiar, its functioning will be different. The focus of societal decision-making authority, particularly on fiscal matters, will shift further away from local school district levels to state capitals and Washington, D. C. There is no question, however, but that students, teachers, and minority groups will have a much greater voice in instructional decisions. New groups—and new coalitions of present groups—will form and press for acceptance of their demands. Groups which have only recently emerged as viable political forces will solidfy their positions in the decision-making structure. There is an old political axiom which holds in effect that as more groups compete for attention in decision making, consensus among various groups will decline, political conflict will increase, and decision-making authority will flow toward the centers of power. The axiom appears to be valid for educational decision making. As conflict continues to be frequent and heated, it will be less possible to contain it at local govern-

mental levels and even, in some instances, within the states. More and more often, the state legislatures or the Congress must make the ultimate decision, and this trend can be expected to continue.

Some modifications in the decision-making structure have already been made; more changes will occur. Whether future changes will take place principally as a result of rational thinking and behavior or largely as a result of irrational thought and action is yet to be revealed."



CENTRALIZATION - DECENTRALIZATION

It is not only a question of power groups moving education toward centralization, nor of centralized financing moving education to centralization. There is also the very powerful force of accountability moving education toward centralization. If it is the responsibility of the state to assure each individual a high quality education; and if a local school district is unable or unwilling to provide that high quality education; what then? If the state is truly accountable, it must provide that high quality education somehow; and if it cannot provide it at a time and place through the traditional medium of local control, then it must provide it through another mechanism.

This would suggest a movement away from the traditional concept of a State Department of Education providing leadership and service, but not demanding accountability—not insisting on results. It implies that the floor imposed by certification and accreditation requirements be topped by another floor, demanding performance. It does not imply that the state through an agency such as the State Department of Education will deliver educational services locally; but it strongly implies that the state through such an agency will insist that those educational services be delivered. This clearly is a step toward centralization.

Yet, as the NEA Journal article points out, there is a strong trend toward decentralization as well, and a fair certainty that groups that have not traditionally had a voice in educational decisions will get such a voice.

It is in this climate of push toward centralizing and pull toward decentralizing that this publication says to all interested in Colorado education, "There are three objectives to be attained in short order, no matter who controls."

Early Childhood Education

The reason for the priority of early childhood education is clear: Education in the early years holds out the greatest hope for producing successful learners who will become successful adults; and thus serves the dual purpose of individual opportunity and of economic growth.

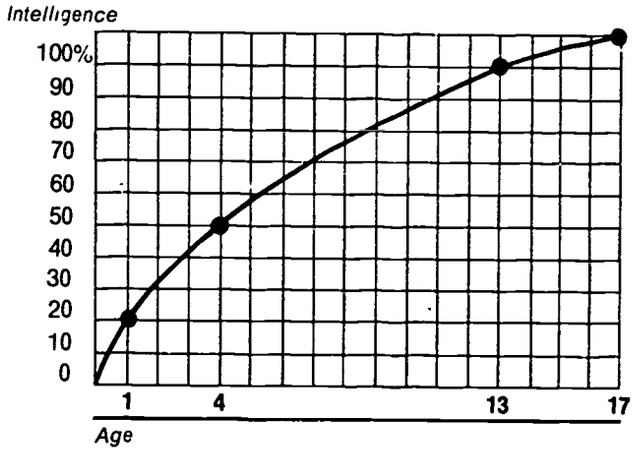
It is clear that the very early years are the enormously productive years in the growth of that body of experience, attitudes and knowledge that is labeled intelligence.

The exact pace of this development is not known. Bloom's conclusion[1] that, of intelligence measured at age 17, some 20 percent is developed by age 1, some 50 percent by age 4, some 80 percent by age 8 and some 92 percent by age 13, is probably as good as any. Regardless of the precision of percentages, it is certain that this growth is a negatively accelerated curve which reaches its midpoint before age 5. The growth achieved in the early years establishes the base from which the leap is made: If the base is high the leap can be high; if the base is stunted, the person is impeded to some extent for the rest of his life. It can be posited that growth cultivated in the early years can eliminate a high proportion of the later year difficulties with which Colorado, along with the rest of the nation, is plagued: Poor learning, especially learning to read; lack of interest; school dropouts; lack of skills to find a job in an increasingly skill-oriented economy; unemployment or underemployment; welfare, poverty, production of children in depressed homes; and a restart on the whole dreary cycle. Even if deficits could be eliminated at a later age as easily as they can be avoided at an early age, the later age remediation would be a far more expensive way to get at the problem.

It is true that the evidence is conflicting on the continued success of early childhood (age 3-5) programs undertaken in the last several years, almost always with Federal funding. But this is one of those instances in which action cannot wait on the subtleties of research. Early childhood education **must** work in Colorado if the educational and economic capacity of its adults of the future is to be fully developed: The thing is to get on with it, using the best methods available now, changing and improving them as new evidence comes in—but getting on with the job.

Utmost care should be exercised in planning for early childhood education. The effort is now diverse; children are gathered in many kinds of buildings in many groupings and taught by many mixes of professional, paraprofessional and lay talent. This diver-

1 "Stability and Change in Human Characteristics," Benjamin S Bloom; John Wiley & Sons, Inc., 1964.



sity is unavoidable for a new program started on many layers and without a common base; it is probably also most useful in reaching an understanding of what kind of thing seems to work best now under varying conditions. As, between now and 1985, early childhood education becomes a universal built-in element of Colorado public schools, some diversity may well remain; but inevitably there will be a structure.

Probably the most effective structure will bring together children of roughly the ages of three to eight —the ages during which the importance of the child's discovering his world at his own pace, though with skilled adult direction, is paramount. The principal purpose of these Early Childhood Education Centers will be skill in reading: For the youngest, amassing the body of experience essential to beginning to learn to read; for the children in the middle, actually learning to read; for the oldest in this Center, polishing and assuring the skill. There will also be progress in learning the language of mathematics; but the emphasis will be on reading the language of speech. The supporting team will consist of highly skilled specialists, backed up by para-professionals and an array of technological aids. The affective and psychomotor skills necessary to success in reading will be carefully looked out for, and the necessary nutritional and health strength carefully safeguarded; but the goal will be reading skill. The progress of children through this Center will be continuous, individual and ungraded. They will learn in small groups and in large groups, and very much as individuals. At the time appropriate to the individual—usually somewhere between the ages of seven and nine—the successful young reader will move out of that Center to an Intermediate Center.

In areas of large population, such Early Childhood Education Centers can be developed on their own terms. There will be enough children aged three to eight to fill such a Center, or a number of such Centers. For such areas, the question of the next several years will be whether they are building toward such a model, or negating it by building in another way. If, for instance, they opt now to handle programs for pre-schoolers by adding another room or two to buildings already serving the elementary span, they are probably defying the model in at least two ways: By putting together a different age grouping, and by replicating traditional classrooms of a kind that will not serve well the style of the 70s and 80s. Every district, of course, has the responsibility for working out its own approach to these questions. The point raised here is that the status of the future ought to be seriously considered in any decision made today, particularly decisions whose effect will continue for a long period: and a building decision is typically at least a 40-year decision. Today's buildings obviously must serve today's pupils; but, wisely produced, they will also begin to move toward the definition of the 1980s. This matter is considered at greater length in the next chapter.

Occupational Education

One of the most important things that can happen in American education over the next 15 years is the dissipation of the smokescreen of confusion and misunderstanding that surrounds occupational education.

Almost all education in this nation is to some degree—usually a very high degree—occupational. The student working for a medical degree is, quite simply, preparing himself for an occupation; as is the student working for a law degree, or an architectural degree. The graduate student working for a Ph. D., whether it be in physical science or in the classics, is preparing himself for an occupation—as professor, as researcher, as writer, as whatever. One of the arguments advanced by advocates of liberal arts education —education not centered on a particular occupation— is that it prepares one for all of life, including that part of life devoted to making a living.

Yet, for those aspects of occupational education that can be further categorized as vocational or technical, there still exists a second class status.

The reasons for this are understandable enough: The lingering class consciousness that makes blue collar work lesser and white collar work greater, and that results in such anomalies as larger proportions of blue collar workers than of white collar insisting on college for their children; the actualities of income distribution; the early bent of American academies that gave place to public schools toward classical, nonspecific education; the natural conviction held by most teachers that their way—i. e., the college way—is the superior way, and the lack of understanding by many that they too majored in a branch of occupational education; the early and too often continuing notion that vocational courses were the appropriate place to hide the pupils who could not make it in the respectable (i. e., college-oriented) courses—all these have contributed to a profound disrespect for the kind of education all people need: some at an earlier age, some at a later.

One clear lesson of the demographic data reported in this publication is this universal need for occupational education.

The changing employment mix projected through the 1980s makes the point: People will be working in a different pattern five and 10 and 15 years from now than they are today and were a decade ago. Not

only will the categories of employment be different; each category will require a new and upgraded mix of skills. This is the base source of the by-now familiar projection that the young person entering the job market in the next few years can expect to have to be retrained at least two or three times in his life for a different and more highly skilled job, if he wants to continue working at the top of his ability.

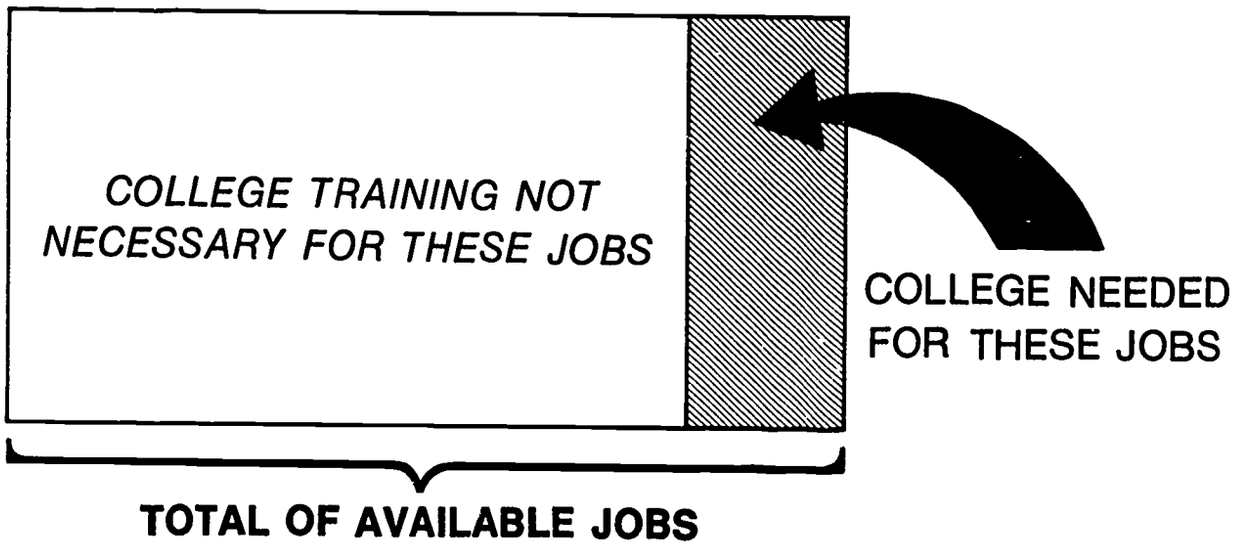
It is here that John Gardner's warning that neither the philosophy nor the pipes will hold water in that society which respects the philosopher qua philosopher and disrespects the plumber qua plumber takes its bite. Everyone is engaged in occupational education; everyone will urgently have to continue being engaged in occupational education; yet occupational education is an expression winning dog-eyed looks; and, in Colorado, relatively limited financial support.

Significant changes in this pattern appear possible as this publication goes to press. The Council on Educational Development (COED) has led the way to a significant increase in the level of state support for occupational education.

undemocratic, and a revelation of why schools fail so many students." It pointed out the Federal government is infected with the attitude, as typified by its investing $4 in university programs for every $1 in vocational education. And it declared, "Plumbers, carpenters, and electricians make more than many school superintendents and college presidents—and only the arrogant will allow themselves to feel that one is more worthy than the other." A very central problem for the public schools is the degree of specific occupational training, the mix of conceptual and practical-manual appropriate for the young person who will leave the schools at about the age of 18.

On the one hand there is his bent toward the practical-manual. On the other there is the obvious distaste of many employers to hire the 18-year-old male and trust him with a responsible position or expensive equipment because of his immaturity.

(The finding of the demographic study that young females in the 18-years-plus category flock to the cities in much larger proportions than young males is instructive here. The office employment categories



to which many young females go can absorb young persons of job-entry skills; while the non-office employment categories to which young males try to go have so far not displayed so large a capacity to absorb.)

The age cohort projections suggest that there may be increasing demand for the young worker, 18 years and above, as the pool of older workers dries up relative to the growth in jobs. If so, the theoretical argument about whether the 18-year-old male is mature enough for a job will fade before the practical necessity of hiring him to get the job done.

The state of the job market, however, does not relieve educators of their educational responsibility—deciding what mix of the conceptual and the practical-manual is appropriate for individuals.

And the projected state of the job market clearly calls on educators to prepare themselves for a very sharp rise in the number of adult participants in occupational education: Both long-term in classifications of skills, and short-term in specific skills needed for

COED estimates that in 1968 only 22 percent of those who should have been enrolled in vocational education programs were, and that by 1974 only 50 percent of those who should be will be. Lay this against the fact developed by COED that 83% of the Colorado working force are in occupations normally served by vocational education, rather than by baccalaureate and professional education, and the dimensions of the task to serve those in school become clearer. Add to that task the very large task of upgrading the skills of occupied adults as the employment mix becomes more skill-grounded, and it is crystal clear that Colorado confronts a major occupational education job.

Mr. Gardner's talk about the philosopher and the plumber was picked up and expanded by the National Advisory Council on Vocational Education of the Department of Health, Education and Welfare. In a report of late summer 1969 it denounced the national attitude toward that kind of education as "snobbish,

specific jobs in specific locations at specific times.

Colorado is not now in good position to offer this expanding range of occupational education services. In many districts there is no occupational education beyond the traditional agricultural and homemaking, with perhaps some office occupation skills thrown in for girls and one or two manual skills for boys. Area vocational schools are a hopeful step in the right direction: But there is need for enlargement of this concept through Regional Occupational Centers capable of offering a wide enough range of occupational education services for the full need of the people of the region. Again, as in the previous discussion of Regional Centers, they can be of two types —offering the services in a location, or gathering the educational resources in a location and sending them out to serve the region.

One of the clear needs unique to occupational education is rationalization of the entire process of delivery of services. Participants now include public school systems, proprietary schools, community colleges, 4-year colleges, and the very large and important input of occupational training by industry and by the military. Whatever the organizational structure of the inputting agency, the output is educated people, and the resources used are educators, educational equipment and educational techniques.

Two important input elements-—vocational education in the high schools and occupational education in the community colleges—are now united under one board; and time will deliver its judgment on the effectiveness of this. Yet the other elements remain outside any coordinating agency. The input resources are too rare and too expensive to admit of uncoordinated effort. This is one of the great pieces of unfinished business in Colorado: Ordering the system so that this most important educational service will be delivered rationally and in the quality and quantity needed

The system of governance of occupational education is not the point at issue here. It is what it is in Colorado as a result of historical process; and it will not easily be taken apart and put together more rationally. The fact that this is not easy does not suggest that it should not be done: Indeed, it must be done if the state is to meet one of the principal obligations imposed by the demographic reality of the 1970s and 1980s.

Without going into the governance question as such, it can be stated with confidence that the system ought to be able to match the requirements outlined in the following paragraphs—the distillation of the agreements of a number of the most distinguished thinkers about occupational education in the country today, gathered by Educational Facilities Laboratories for discussion, and reported in the introduction of a new EFL publication, "On the Way to Work."

> "Children should be introduced at an early age to the realities of wage earning, to ideas about working for a living. Exploration of the various aspects of commerce and industry could provide elementary school students with such an introduction.
>
> "By the time they reach junior high school, a more sophisticated prevocational program should expose youngsters to the full range of occupational choices that will eventually be theirs.
>
> "Students thus will be able to establish a relationship between education and the adult world. Further, they will be equipped to make not a premature commitment but an intelligent choice.
>
> "Steps taken toward such an occupational orientation in various schools throughout the country indicate a definite trend away from the traditional insularity of pure academicism. Field trips to local industrial plants, documentary film screenings, model demonstrations, and other coordinated exposures to the practical applications of classroom theory can help expand student comprehension of the workaday world.
>
> "An occupational commitment should be implicit in every student's secondary school program. Toward this end, an increasing number of schools are preparing their students to elect, by the time they reach the 11th grade, one of three occupational alternatives: college entrance, post-secondary training, or a beginning job. The decision need not be final.
>
> "In fact the school is obligated to guarantee that no one is locked into an unalterable life-course by a single, irrevocable decision. Training programs arranged in career-ladder style, just as many occupations actually are, introduce the student to several related jobs. The hierarchy of training permits him to "spin off" at any level with marketable skills and perhaps return later to pick up more or refine the ones he has.
>
> "An interdisciplinary approach to education should be introduced at the secondary level, combining English, mathematics, science, and a vocational shop, and relating practical training to academic subjects.
>
> "A developing concept of team teaching, which combines the traditional disciplines around a vocational shop program, the "Richmond Plan" of pre-engineering technology is being used in many schools. Under the plan, a study of the inclined plane would involve an actual model built in the shop, followed by applications of its principles in mathematics and physics classes and writing about it in English courses.
>
> "All technical-vocational programs should incorporate relevant part-time work experience no later than the 12th grade. In some cases, particularly those involving needy students or potential dropouts, it should be introduced earlier.
>
> "What students **do** is more important than what they **earn.** The best work-study situation at the secondary level involves a group of students, accompanied or very closely coordinated by a teacher, working at jobs directly related to their in-school training.
>
> "School planners should enlist the aid of

advisory groups from local industry and labor in developing vocational programs and designing technical facilities. They constitute a vital link to the life and needs of the community.

"Schools are increasingly obligated not only to equip a vocational student with marketable skills, but to place him in a job. The situation is directly comparable to a school's responsibility for assisting students seeking admission to college or other post-secondary schools. Follow-up is of critical importance in assessing the school's programs, as well as in determining student progress and problems.

"Conventional scheduling practices cannot cope with occupational education's demands for nearly continuous utilization of staff and facilities. More and more, the customary school day and year are being discarded in favor of systems for allocating time according to student needs This is particularly appropriate in part-time programs or programs leading directly into full-time employment. The school must be organized as a service operation in which the conventional term, and even diploma, become irrelevant.

"The comprehensive high school should offer broad options for progress toward occupational objectives. These objectives may be realized at the secondary level or deferred until post-secondary school or college. In this context, schools are discovering that individual guidance, rather than pigeon-holing, is essential to avoid sharp separation of academic and vocational programs.

"In rejecting such mutual exclusivity, it is not to be assumed that all pupils will take a basically academic sequence of courses. The correct approach becomes a matter of emphasis.

"When high schools and junior colleges serve the same community, they should be closely articulated. Artificial distinctions between secondary and post-secondary occupational offerings are gradually disappearing. An increasing number of qualified 11th and 12th grade students are permitted to take community college courses.

"School operating plants should be used as part of the occupational training facilities. The heating plant, food service facilities, the bookstore, the business office, the instructional materials department, and even campus landscaping can be utilized in work-study situations.

"The design of occupational education facilities should anticipate frequent physical changes as new career opportunities evolve and educational approaches shift."

Revising the Curriculum

Between an early childhood educational program producing 8-year-olds with a high competence in reading, and an orderly occupational education system that fits young adults and older adults for jobs they want, lies the educational system on which Colorado (and other states) have lavished most of their attention.

Despite their attention, it remains true that the Colorado school of 1970 is an institution that would be reasonably familiar to one who attended school in the 1920s or 1940s. There have been curricular changes, such as the new math that still mystifies a good number of adults. There have been changes in support, such as the language labs that are now generally about a decade old. There has been change in the quality and training of teachers. Yet, in the typical school, there has been no change in the basic style of teaching-learning that would be profoundly new to the visitor from another era.

It is a central thesis of this publication that that will not be true in the 1980s; that, because the infrastructure is in place and the entire process has been set in motion, the visitor to the school of the future will find far more differences than he will similarities with what happened when he was in school. It is a companion thesis that Colorado educators of today must deliberately accelerate the conversion to that school.

The implications of the first two imperatives therefore establish the third imperative: Receiving from early childhood education a Colorado child who because of social-economic factors has a greater capacity to learn, and who because of his early education has developed greatly this capacity to learn; knowing that at the end of the conduit this child-become-a-young-adult will have smooth passage to occupational-and-continuing-education; then the school in the middle must look in both directions to shape itself to this new young person.

This calls for basic re-examinations in many areas.

Schools traditionally have taught five broad academic areas: English, mathematics, social studies, science, foreign language; adding to these whatever range of offerings it has, but subtly penalizing the pupil opting for anything but these college-preparatory courses by second class status.

It seems beyond dispute that during the 1970s substantially more than half the 18-year-olds of Colorado will be continuing formal education; and that very many not moving on to something called college will be continuing in occupational education; and that, if the years between are met intelligently, there will be no status distinction between the groups.

This suggests a re-look at the five traditional academic areas. Are they all five really necessary and useful, in their present structure? Are foreign languages taught because there is utility in learning languages; because in the learning there is some spinoff of understanding other cultures; or simply because they are traditions and because most college catalogs still demand them? Does the division of "science" into physics, chemistry, biology plus several other offerings make sense for non-specialists under the age of 18; or is science divided this way because it is traditional and convenient for the colleges and for examining bodies?

What is it really that every 18-year-old should know and understand and be capable of? Is this not what ought to be the base of the school experience:

To which can be added foreign languages for those who want them, specialized science for those who want that, specific occupational skill for those who want that?

Public school officials cannot conduct this entire re-examination alone. The colleges are vitally interested and should be in on the re-examination. (Indeed, they too must re-examine; because their typical entering freshmen in the coming decade will probably be of the same cognitive development as their typical graduate of the 1950s, they will no longer have the same job to perform and will have to redefine their task if they are to meet the needs of the day.)

This searching examination and re-examination of what the schools are doing, and whether it makes sense for the 1970s, will be necessary for every phase of school activity, not only the traditional academic curriculum. Only by asserting a priority of matching the educational practice of the 1970s to the socio-economic needs of the 1970s can a rational promise be held out of education's meeting the greatly differing needs of the 1980s.

Research and Change

The emphasis of this chapter has been on the three imperatives. All share a very loud common note. They are dependent on research. These are areas in which education is not doing very well, or could at least do better; and they are therefore areas begging for large-scale and carefully conceived research, including classroom research. They are, therefore, areas that require the fullest research support possible, including a major share of the ESEA Title III funds that have as a goal putting education on the cutting edge of progress.

Chapter Six
Space For Learning

Colorado will have to invest a large sum for space in which to conduct the educational process between 1970 and 1985.

The sum may be as large as a billion 1970-type dollars.

That bald statement must be immediately modified by two more statements:

1. The figure is conservative.

2. The dollar figure does not speak to the question of the kind of space that is to be provided. Hopefully little of it will be space of the kind that has become traditional. But whether provided in schools, or in regional centers, or in specialized facilities, it is space and it will cost. (No attempt has been made here to ponder whether public education a decade or two from now will provide more learning facilities at pupils' homes, and therefore require less space in buildings called schools. This is an intriguing point, but not one firm enough to build projections on now.)

A billion dollars is a very large sum—it may, indeed, appear to be a staggering sum. It is conservative, however, in that it is based only on the provision of space for three purposes:

1. Replacing existing school space as it becomes obsolete.

2. Providing new space for the increase in school-age population in the projections underlying this publication.

3. Providing space for a portion of the 3-to-5-year-old children who are not now in school.

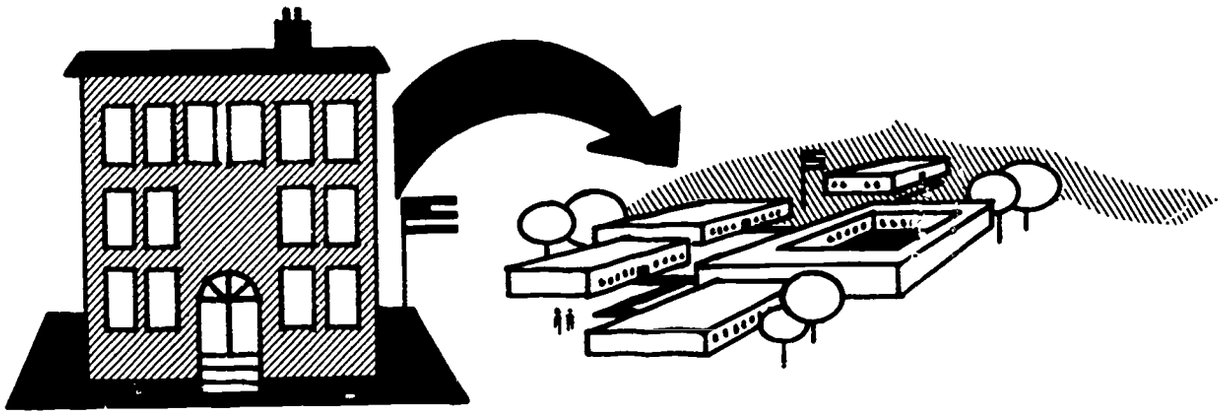
It does not specify kinds of facilities, such as space for occupational education, space for specialized education for the brilliant or the handicapped, space for regional education centers. Some specialized facilities will be needed: the assumption is that they will be provided within the allotment of space for the numbers involved.

The dollar rationale for the projection of space investment is an assumption of a one-time capital cost of $2000 for each new child, or for each child whose space needs replacing. Many Colorado school districts are spending much more than this now. (Indeed, a recent examination of capital costs in Colorado showed expenditure of some $2000 per child in elementary school, and almost $3000 per child in secondary school including land costs, construction costs, fees and equipment.) Some Colorado districts are now providing space at substantially less cost per child. The $2000 figure per child, then, is a very rough and very conservative estimate, which ignores such inflationary facts as that construction costs nationally have risen at least 15 percent in the last two years. It is so conservative that it can be stated with certainty that it is a very low floor from which to estimate Colorado school construction costs from 1970 through 1985.

Three Cost Factors

The first major element of construction cost will be for replacement of existing facilities. Colorado public schools now house some half-million pupils (530,000 in attendance in 1969). Assuming a 50-year life for school buildings, these will require replacement at a rate of two percent a year for obsolescence. At an even replacement pace, the cost is estimated at $20 million a year, or $300 million for the period 1970-85. (It will be noted that this replacement cost makes no provision for speedy replacement of the large stock of school buildings in Colorado already more than 50—and in some place more than 75—years old. There is no adequate inventory of all Colorado schools by age and condition. However, the U. S. Office of Education has reported that the nation has more than 30,000 public school buildings and additions containing some 250,000 classrooms that have been in use 50 years or more. Colorado surely has its share of these antiquated facilities.)

The demographic projections indicate a 3-to-5 year old group of some 150,000 during the projection period, with sharp shifts to occur whenever birth rate trends change, and with a generally rising number of children of this age as the general population moves toward a higher proportion in the child-bearing age. Some of the 5-year-olds are already in kindergarten; and, since it is assumed early childhood centers will be voluntary, some of this age group will not attend. The estimate therefore is that some additional 100,000 children of this age will require new physical space;



presenting a $200 million bill which if equally spread over the projection period, will cost $13 1/3 million a year.

The population projections indicate a growth of some 50 percent in general statewide population between 1970 and 1985, with sharp outthrusts in the school-going ages. There will thus be some 250,000 more children in Colorado public schools in 1985 than in 1970; and providing them with neded space will cost $500 millior —and, at the assumed equal pace, an annual bill of $33 1/3 million.

Thus 80 percent of the 15-year school space bill derives directly from the demographie data. It is the provision of new space or the replacement of obsolete space for those children now in school or in sight to be in school for the current range of programs. Only 20 percent of the bill is for the new program of universally available early childhood education; a new program which, as noted previously, holds out the greatest single hope for solving Colorado's educational problems and for giving each child real opportunity to reach his full potential.

Uneven Growth

Examination of the population projections by area and by county makes it clear that this large-scale building job will not be scattered evenly throughout the state. The heavy growth area for population, and therefore for school construction, will be the rapidly urbanizing stretch along the Eastern Slope. Other areas are projected for growth that will be of significant impact in the locality, but will have little effect on the general statewide disposition of people. Still other areas will have little or no growth of school-age children. As noted, great changers of population patterns have not been included in the projections. Should the oil shale industry develop, this will have a very large statewide effect and an awesome local effect.

As ski-and-recreation areas develop, there may also develop a relatively new kind of educational problem making unique demands for space; with a pattern of heavy use of schools during the season when service personnel will live in the area, followed by an exodus of population as these personnel and their children move to their alternate places of work.

Throughout very large reaches of the state there will still be sparse population. These areas in particular will have to move heavily toward regional centers if they are to provide the kind of educational service required of them; either regional centers to which people come for education, or centers from which educational specialists fan out to deliver educational services to people in other locations.

Thus the space-delivery question becomes a compound matter: a requirement for heavy production of all kinds of educational space in the growth regions, modest replacement and modest growth in much of the state, local and fast-developing needs of very high impact, a pervasive need for new space concepts in regions of small population.

The size of the need and the unevenness of the demand pose a serious question as to the capacity of the present system of space delivery to stand up to the needs of 1970 through 1985. By and large, the heaviest demand for space will continue in that period in the same regions in which it has been heavy through the 1950s and 1960s; and many of the school districts of these growth areas are already at or close to the limits of the borrowing capacity which traditionally has been the principal method of providing educational space in Colorado. Whether even heroic efforts can see them through the area of necessary growth before them is open to doubt.

The question returns, as it must always, to one of state responsibility. If a school district needs space and cannot provide it, what then does the state do? At the moment, the rigidities are such that the answer is unfortunately nothing, or next to nothing. Muddling through has a long and honorable tradition; but it is scarcely the ideal position for a state to take once it has examined the demographic conditions of the next 15 years, and can be reasonably certain that there will be much muddling and a fair amount of not getting through in those 15 years unless something is done. The "something" in this case is a close look at the entire pattern of state-and-local responsibility for the provision of school space; and leadership in both educational and political circles to find a viable path while there is still time to choose without penalty.

The emphasis of this publication has been not only demographic data but educational leadership, and the interplay between the two. The demographic data establish the broad outlines of space need—how much space for what age groups will be required where. The educational leadership must determine the kind of space; and that means the educational leadership must predict the kind of program that will be evolving in 1975 and 1980 and 1985. This publication has pointed to some of the elements of that kind of evolving program: More capable pupils, more competent and secure educational specialists, more reliance on technological aids; eliminating educational disadvantage among ethnic minorities and delivering special education to all in need of it; and three linked imperatives of early childhood education, expanded occupational education, and revision of the curriculum between early childhood and formal occupational education.

These changes are profound, and obviously have profound implications for the kind of space to be delivered. There has now been sufficient thinking and sufficient experimentation on this question, both in Colorado and nationwide, to support two broad statements: one, that providing in the 1970s (to continue into the next century) school space of the long-traditional kind is a mistake; two, that openness and flexibility are two appropriate ways to bridge the gap; to provide space adequate for what is now going on, and changeable enough to accommodate that which will be going on during the 1970s and 1980s.

Chapter Seven
Paying For Education

The emphasis in the preceding chapter was on the provision of space for the numbers of children and the types of programs that will have to be accommodated, and the cost of that space. The cost is large; yet it has been labeled comparative chickenfeed by one whose latter professional life as an educator has been devoted to development of good educational space:[1*]

> "Let us put the question of building costs into perspective. If you build a $1 million high school its operations budget will be about $1 million every three years. Over a life of 60 years, the actual cost of the building itself will be only about 6 percent of the total cost of fulfilling the purposes for which the building was constructed. Or to put it another way, when you add two teachers to your staff, their salaries and fringe benefits for 30 years equal the cost of $1 million worth of building. Think of the number of city school boards that discuss for five minutes the consequences of adding two teachers and then argue into the dawn about the expenditure of $1 million for buildings. In short, contrary to popular misconceptions, buildings are chickenfeed in the educational scheme of things. People are more important—and more expensive—than bricks."

The "chickenfeed" which is the cost of school space has been estimated at $1 billion in Colorado between 1970 and 1985, or even annual bills of $66 2/3 million.

The most conservative possible view suggests that Colorado will have to find somewhere an additional half billion dollars per year to educate the people who will be occupying the educational space by 1985.

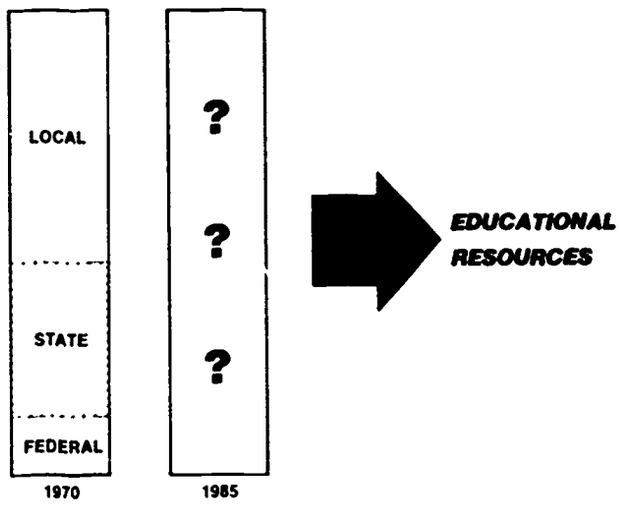
That figure is based on an arbitrary estimate of current expenditures of $1000 per pupil, applied to the 350,000 more children who will be in school as a result of population growth and early childhood education, and the children who are already in school. (Current expenditures per child in average daily attendance in all Colorado schools for 1969-70 are a bit more than two-thirds the $1000 figure.)

Few educators or economists would accept $1000 per pupil as a reasonable expenditure for 1985, even in current dollars. Most estimates, on the contrary, foresee a doubling of expenditures within a reasonably short period—perhaps by the late 1970s. If that is so then Colorado may have to find by 1985 an additional sum for public schools closer to a billion dollars than half a billion.

At this remove of time, it serves little purpose to argue the differences and the likelihoods as between half a billion dollars and a billion dollars. The need will be somewhere in that range; and the task before the state is to start gearing up its structure to meet the needs.

The Source of Funds

There is little serious argument that very substantial parts of this new expenditure will flow somehow from the Federal government. Whether it flows from the government as such in the form of general or categorical aids; whether the Federal Government acts as



a tax collector for states, returning to states sums to be used for educational and other purposes; whether the Federal Government reduces its tax rates so that states can increase theirs—these are all important political questions, but questions on which Colorado's decision-makers will have relatively little impact.

Those decision-makers, however, . have very major impact on the second and third parts of the question: What proportions of the school bill will be paid from state-collected taxes, and what proportion from locally-collected taxes. The growth in personal income projected through 1985 and reported in an earlier chapter suggests that Colorado will increase in wealth at a rate capable of making a much larger investment in public education. But the economic and political climate underscores that the difficulty will lie less with capacity to support than with ability to overcome the institutional restraints that now impede growing support.

While the question of federal-state-local shares of school costs is central, it has an important subset in Colorado. One of the principal implications of the demographic data has been the necessity of some kind of cooperation. Alternate ways to such cooperation must, of course, be examined. But one clear way is through regional centers to provide educational servi-

1* Harold B Gores, president, Educational Facilities Laboratories; speech to a 1967 Stanford conference on education in the city; published in "The Schoolhouse in the City," Frederick A Praeger, publisher, 1968

ces. Such centers will cut across school boundary lines, across county lines; and may even, in some parts of the state, cut across state lines. The slow way to make possible this kind of development is to permit and encourage local units to pool resources and money to support multi-unit centers. An alternative way—and one clearly unacceptable politically in Colorado at the moment—is to have a central agency construct and operate such centers. In between are a number of ways of getting at the problem; some of which will be more acceptable politically than others.

The lesson of the demographic reality, however, is that these questions and problems must be cleared up and that the proper time to clear them up is early in the 1970s when the problems are visible at a distance, rather than in the late 1970s or the 1980s when the problems will be pervasive. This is the fundamental challenge to Colorado's educational and political leaders; to have the wisdom to use the data now available to them as the basis for wise decisions.

APPENDIX

Unless otherwise indicated, the tables listed in this appendix were prepared by the Denver Research Institute in a demographic study conducted for the Colorado Department of Education or adapted from data included in their report. **Assessing Employment-Related Educational Needs: data and analysis for planning, May, 1969.** Other tables, and a narrative explanation of methodology, were also prepared by the Denver Research Institute; these are on file and available for inspection in the Assessment and Evaluation Unit at the Colorado Department of Education.

The following maps show the areas included in each of the state economic areas (...A's) as defined on page 17 of Chapter 2. The tables below each map give the population projections for that area for the years 1970, 1975, and 1980.

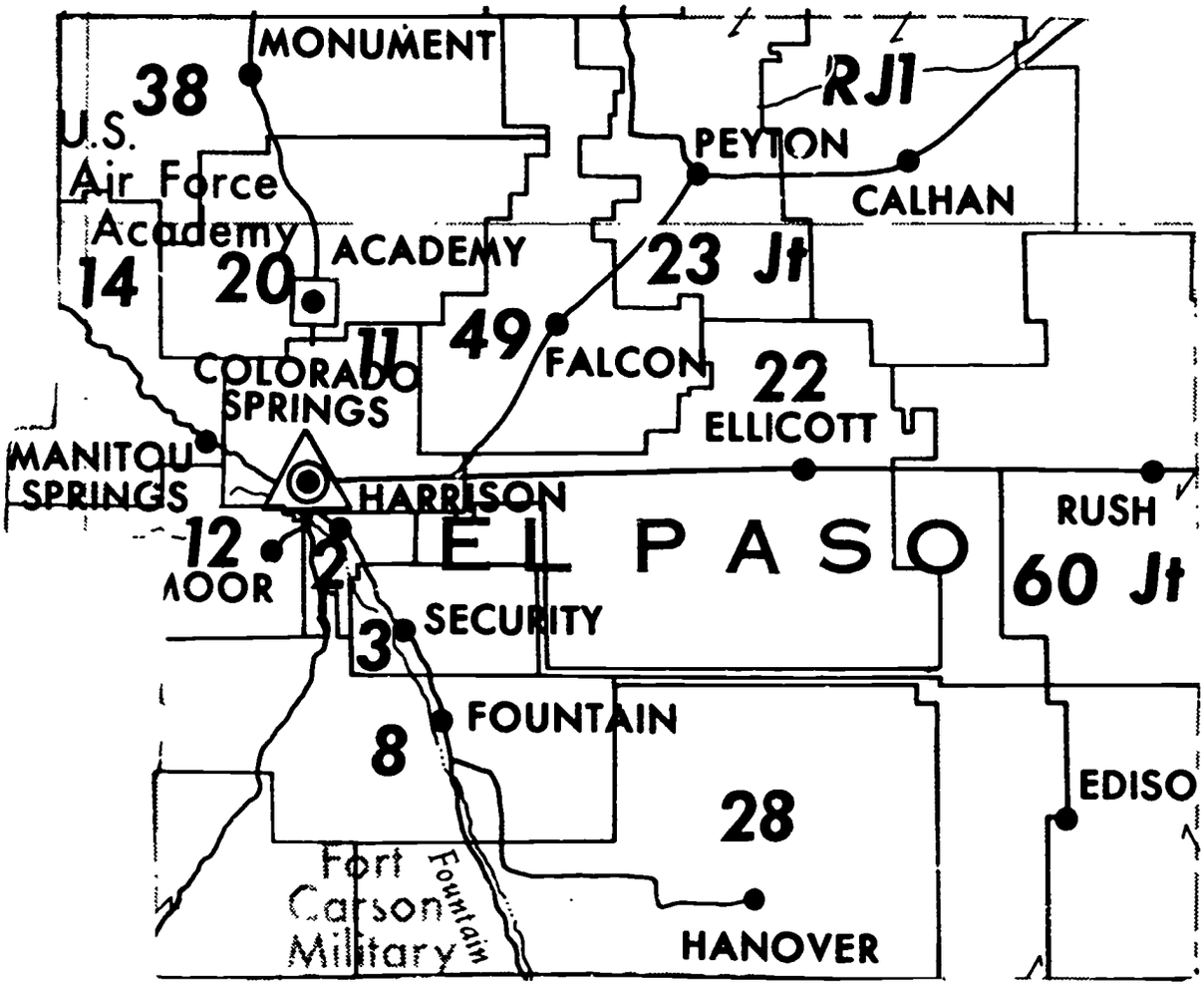


Table IX. Population Projections By Age Cohorts:

State Economic Area B

COUNTY	AGE GROUP	1970	1975	1980
El Paso	0-5	29,000	36,000	40,000
	6-19	72,000	75,000	78,000
	20+	134,000	150,000	172,000
	All ages	235,000	261,000	290,000

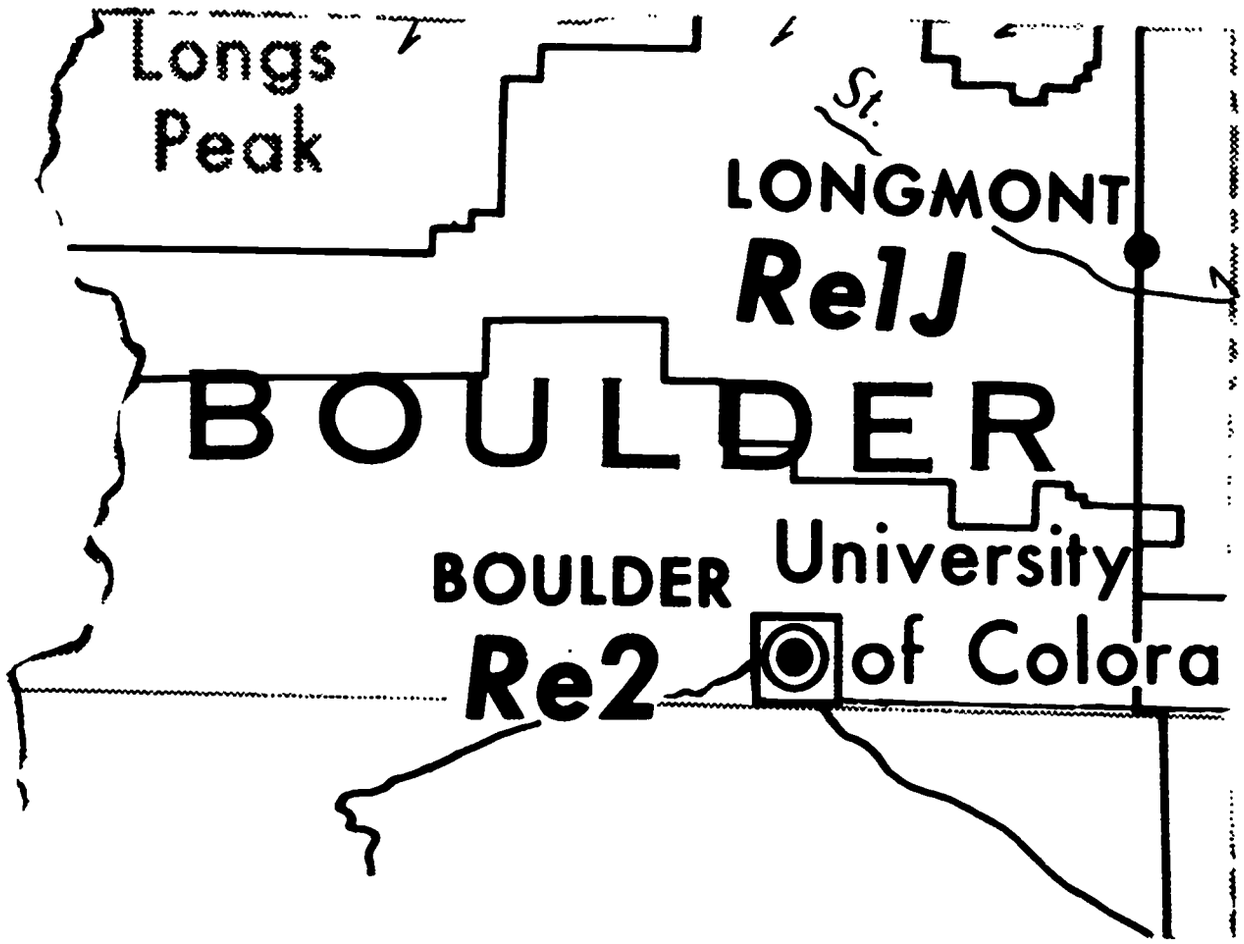


Table X. Population Projections By Age Cohorts:

State Economic Area D

COUNTY	AGE GROUP	1970	1975	1980
Boulder	0-5	15,000	19,000	23,000
	6-19	39,000	43,000	44,000
	20+	71,000	88,000	111,000
	All ages	125,000	150,000	178,000

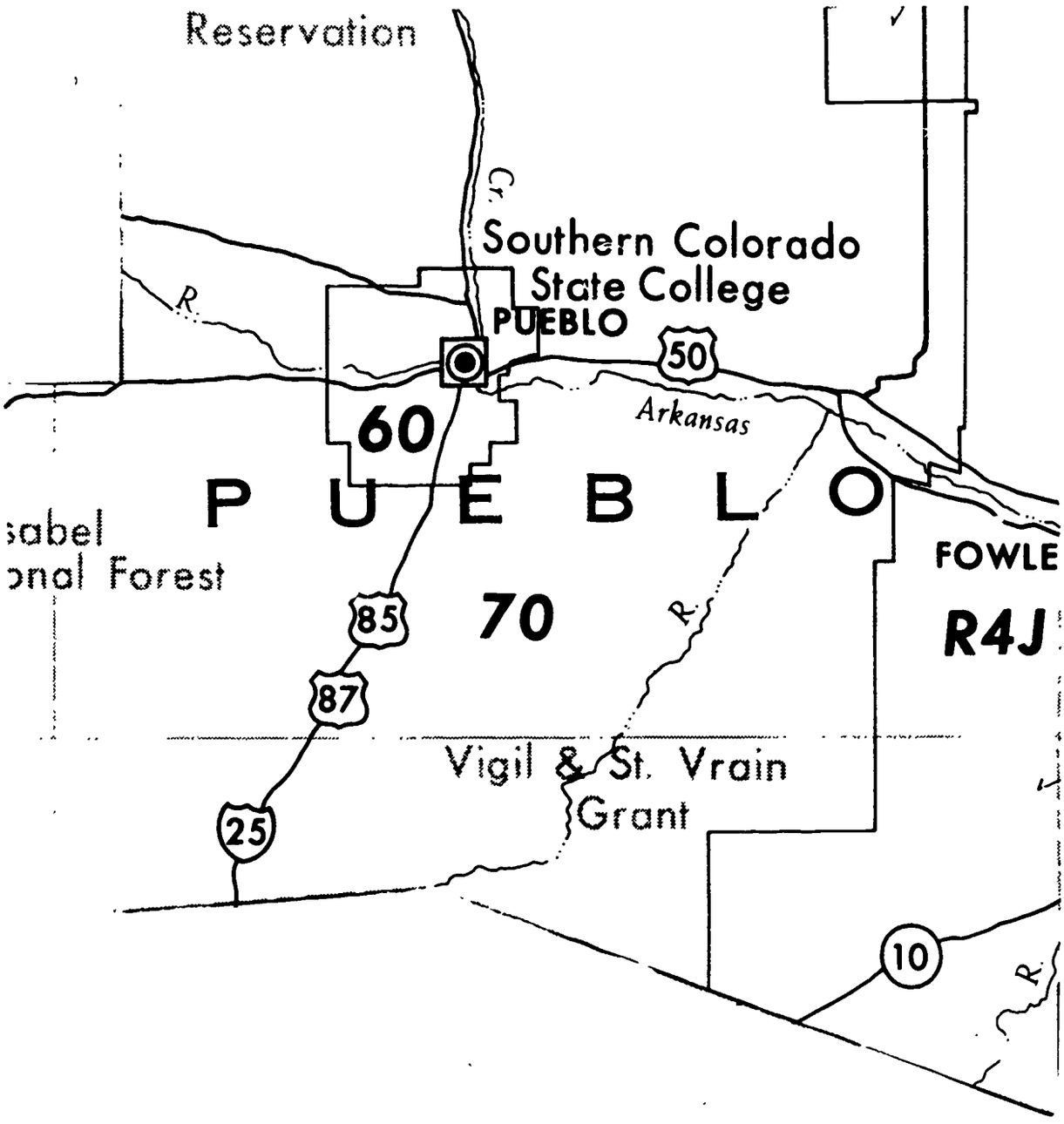
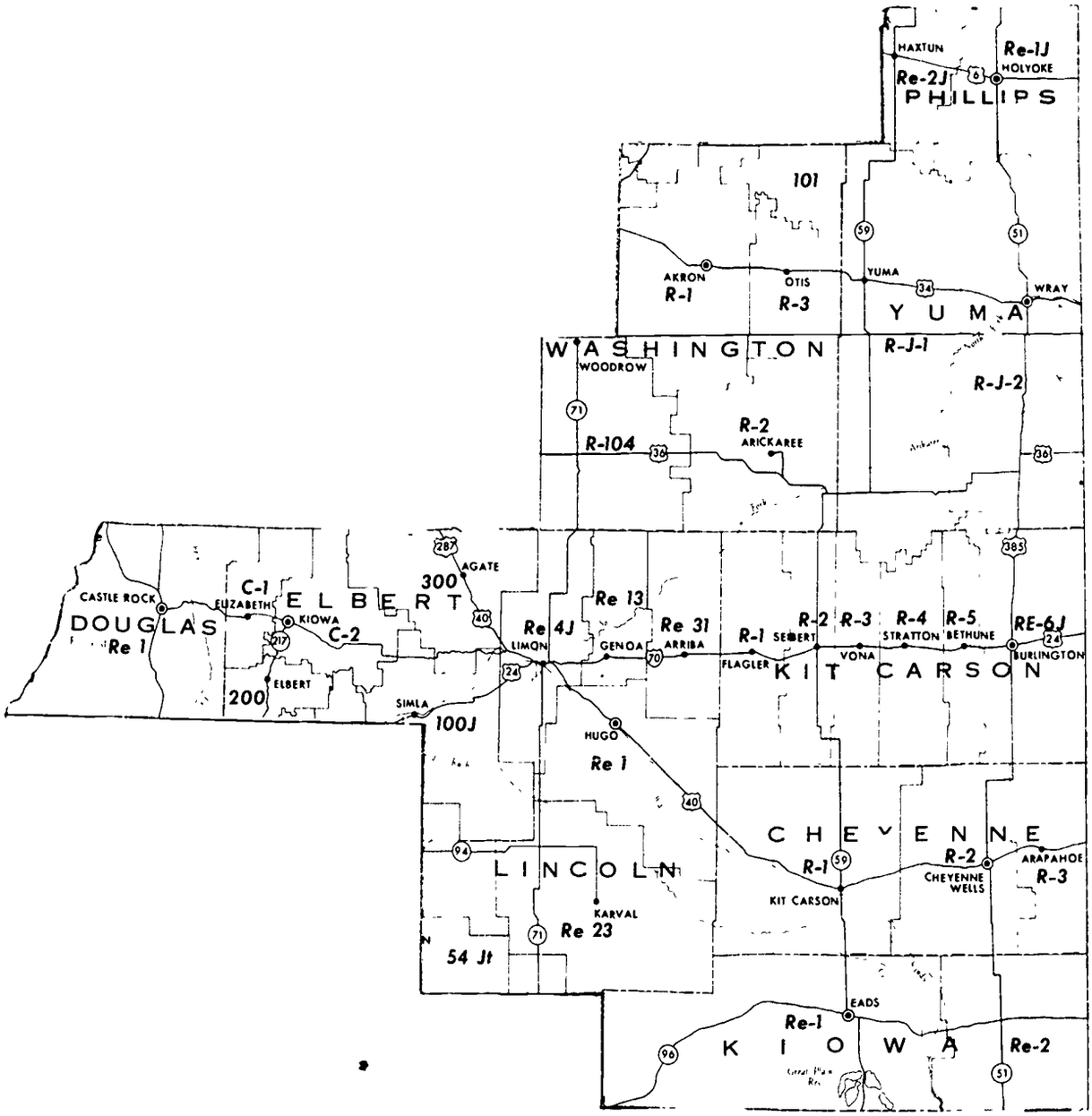


Table XI. Population Projections By Age Cohort:

State Economic Area C

COUNTY	AGE GROUP	1970	1975	1980
Pueblo	0-5	15,000	19,000	22,000
	6-19	39,000	42,000	46,000
	20+	71,000	87,000	107,000
	All ages	125,000	148,000	175,000

State Economic Area 4

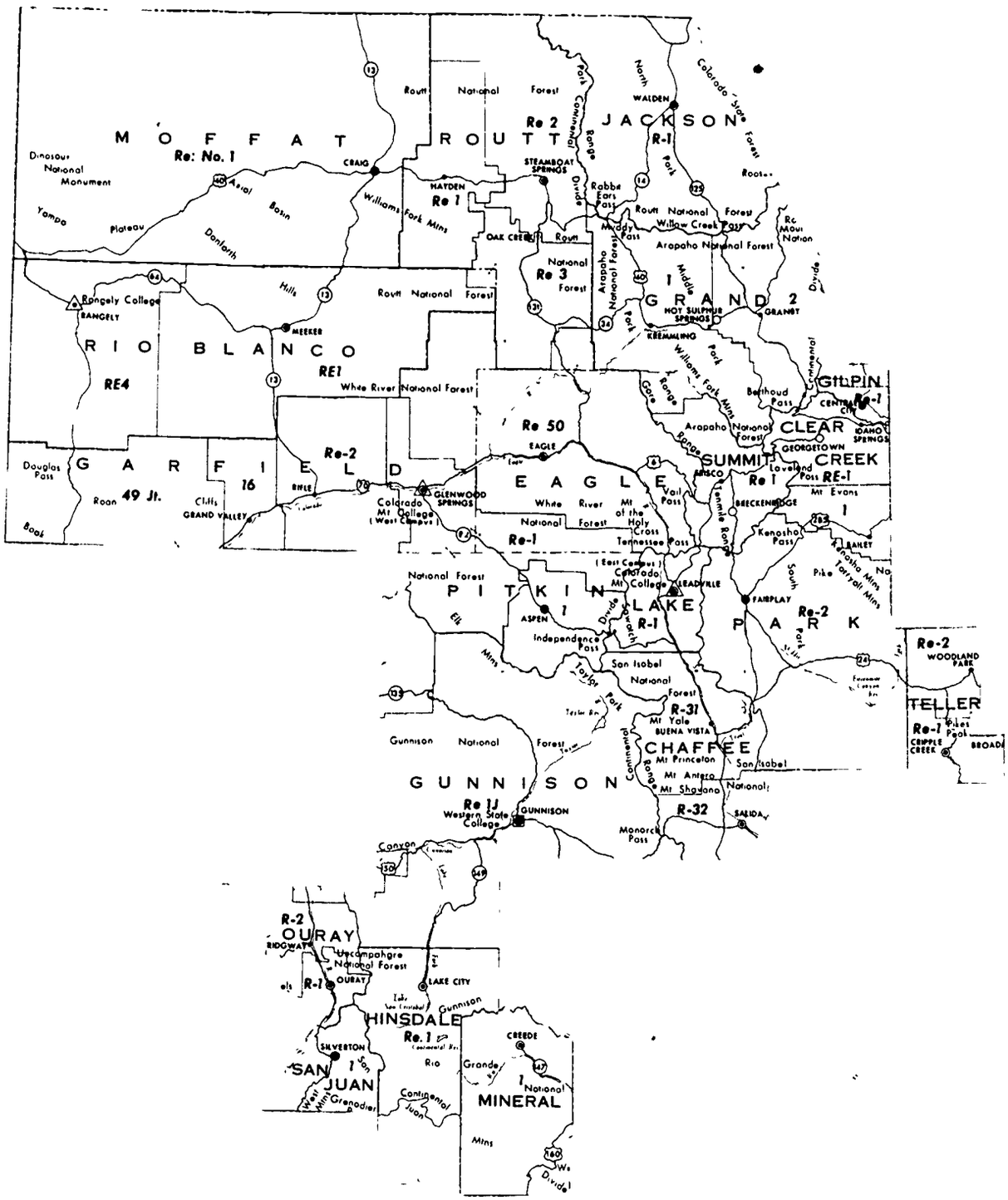


(See Table XII, page 39)

Table XII. Population Projections By Age Cohorts:
State Economic Area 4

		1970	1975	1980
Cheyenne	0-5	300	300	300
	6-19	900	900	900
	20+	1,500	1,500	1,500
	All ages	2,700	2,700	2,700
Douglas	0-5	500	2,000	4,000
	6-19	3,000	6,000	8,000
	20+	6,500	12,000	18,000
	All ages	10,000	20,000	30,000
Elbert	0-5	400	400	400
	6-19	1,000	1,000	1,000
	20+	2,600	2,600	2,600
	All ages	4,000	4,000	4,000
Kiowa	0-5	300	300	300
	6-19	800	800	800
	20+	900	900	900
	All ages	2,000	2,000	2,000
Kit Carson	0-5	800	800	800
	6-19	2,500	2,500	2,500
	20+	3,700	3,700	3,700
	All ages	7,000	7,000	7,000
Lincoln	0-5	600	600	600
	6-19	1,600	1,600	1,600
	20+	2,800	2,800	2,800
	All ages	5,000	5,000	5,000
Phillips	0-5	400	400	400
	6-19	1,500	1,500	1,500
	20+	2,100	2,100	2,100
	All ages	4,000	4,000	4,000
Washington	0-5	600	600	600
	6-19	2,000	2,000	2,000
	20+	3,400	3,400	3,400
	All ages	6,000	6,000	6,000
Yuma	0-5	800	800	800
	6-19	2,500	2,500	2,700
	20+	5,200	5,200	5,300
	All ages	8,500	8,500	9,000

State Economic Area 1



(See Table XIII, pages 41 and 42)

Table XIII. Population Projections By Age Cohorts: *State Economic Area 1*

COUNTY	AGE GROUP	1970	1975	1980
Chaffee	0-5	1,000	1,000	1,000
	6-19	3,000	3,000	3,000
	20+	5,000	5,000	5,000
	All ages	9,000	9,000	9,000
Clear Creek	0-5	400	400	400
	6-19	900	900	900
	20+	2,700	2,700	2,700
	All ages	4,000	4,000	4,000
Eagle	0-5	700	700	700
	6-19	1,600	1,600	1,600
	20+	3,700	3,700	3,700
	All ages	6,000	6,000	6,000
Garfield	0-5	1,400	3,100	3,000
	6-19	5,000	5,300	7,000
	20+	8,600	12,600	20,000
	All ages	15,000	21,000	30,000
Gilpin	0-5	100	100	100
	6-19	300	300	300
	20+	600	600	600
	All ages	1,000	1,000	1,000
Grand	0-5	400	400	400
	6-19	1,500	1,500	1,500
	20+	1,600	1,600	1,600
	All ages	3,500	3,500	3,500
Gunnison	0-5	900	1,000	1,000
	6-19	1,800	2,100	2,500
	20+	3,800	3,900	4,000
	All ages	6,500	7,000	7,500
Hinsdale	0-5	40	40	40
	6-19	50	50	50
	20+	110	110	110
	All ages	200	200	200
Jackson	0-5	200	500	500
	6-19	800	800	800
	20+	1,500	1,500	1,500
	All ages	1,500	1,500	1,500
Lake	0-5	2,750	2,750	2,750
	6-19	5,750	5,750	5,750
	20+	10,000	10,000	10,000
	All ages			
Mineral	0-5	60	60	60
	6-19	200	200	200
	20+	240	240	240
	All ages	500	500	500
Moffat	0-5	900	1,000	1,000
	6-19	2,300	2,500	2,500
	20+	3,800	4,000	4,500
	All ages	7,000	7,500	8,000
Ouray	0-5	200	200	200
	6-19	500	500	500
	20+	1,300	1,300	1,300
	All ages	2,000	2,000	2,000

Table XIII. Population Projections By Age Cohorts: *State Economic Area 1 (Continued)*

COUNTY	AGE GROUP	1970	1975	1980
Park	0-5	200	200	200
	6-19	400	400	400
	20+	1,400	1,400	1,400
	All ages	2,000	2,000	2,000
Pitkin	0-5	400	500	500
	6-19	800	800	1,000
	20+	2,300	2,700	3,500
	All ages	3,500	4,000	5,000
Rio Blanco	0-5	700	700	1,000
	6-19	1,800	2,100	3,000
	20+	2,500	4,200	5,000
	All ages	5,000	7,000	9,000
Routt	0-5	700	900	900
	6-19	2,000	2,200	2,500
	20+	3,800	4,400	5,100
	All ages	6,500	7,500	8,500
San Juan	0-5	100	100	100
	6-19	300	300	300
	20+	600	600	600
	All ages	1,000	1,000	1,000
Summit	0-5	300	500	400
	6-19	500	600	600
	20+	1,200	1,400	1,500
	All ages	2,000	2,500	2,500
Teller	0-5	300	400	500
	6-19	1,000	1,200	1,200
	20+	1,700	1,900	2,300
	All ages	3,000	3,500	4,000

State Economic Area 2

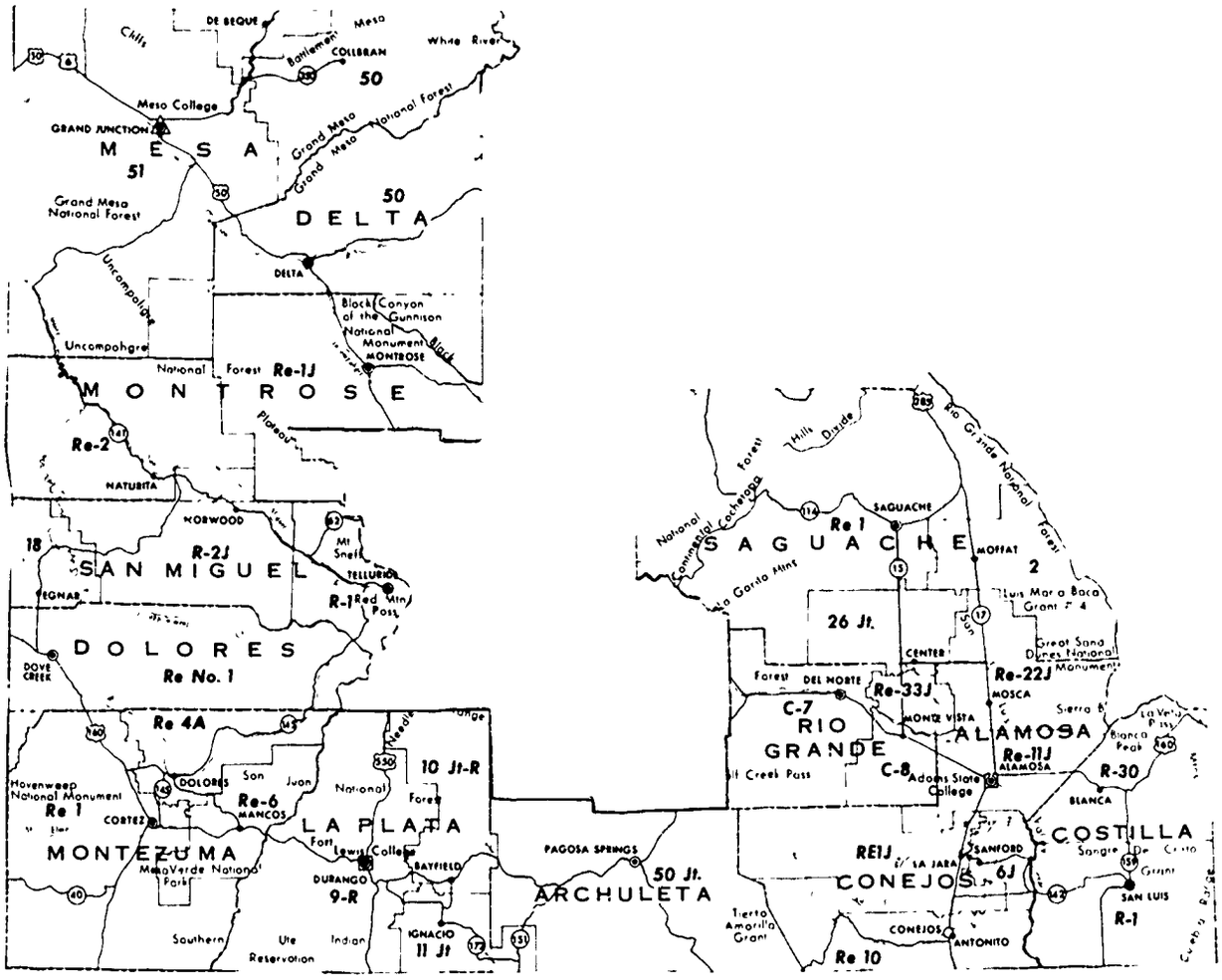


Table XIV. Population Projections By Age Cohorts:
State Economic Area 2

COUNTY	AGE GROUP	1970	1975	1980
Alamosa	0-5	1,500	1,500	1,500
	6-19	3,400	3,400	3,400
	20+	5,100	5,100	5,100
	All ages	10,000	10,000	10,000
Archuleta	0-5	400	400	400
	6-19	900	900	900
	20+	1,700	1,700	1,700
	All ages	3,000	3,000	3,000
Conejos	0-5	1,500	1,500	1,500
	6-19	3,000	3,000	3,000
	20+	3,500	3,500	3,500
	All ages	8,000	8,000	8,000

(Table XIV continued on page 44)

Table XIV. Population Projections By Age Cohorts:
State Economic Area 2 (Continued)

COUNTY	AGE GROUP	1970	1975	1980
Costilla	0-5	600	600	600
	6-19	1,500	1,500	1,500
	20+	1,900	1,900	1,900
	All ages	4,000	4,000	4,000
Delta	0-5	1,700	1,700	1,700
	6-19	4,500	4,500	4,500
	20+	8,800	8,800	8,800
	All ages	15,000	15,000	15,000
Dolores	0-5	300	300	300
	6-19	700	700	700
	20+	1,000	1,000	1,000
	All ages	2,000	2,000	2,000
La Plata	0-5	2,500	2,500	2,500
	6-19	6,500	6,000	6,700
	20+	10,000	11,500	11,800
	All ages	19,000	20,000	21,000
Mesa	0-5	5,000	6,000	8,000
	6-19	16,000	17,000	19,000
	20+	34,000	38,000	43,000
	All ages	55,000	61,000	70,000
Montezuma	0-5	1,800	2,000	2,000
	6-19	4,500	4,700	5,000
	20+	7,700	7,800	8,000
	All ages	14,000	14,500	15,000
Montrose	0-5	2,300	2.300	2,400
	6-19	6,000	7,000	7,000
	20+	12,700	12,200	12,600
	All ages	21,000	21,500	22,000
Rio Grande	0-5	1,600	1,600	1,700
	6-19	3,500	3,700	3,800
	20+	5,900	6,200	6,500
	All ages	11,000	11,500	12,000
Saguache	0-5	700	700	700
	6-19	1,500	1,500	1,500
	20+	2,300	2,300	2,300
	All ages	4,500	4,500	4,500
San Miguel	0-5	300	300	300
	6-19	800	800	800
	20+	900	900	900
	All ages	2,000	2,000	2,000

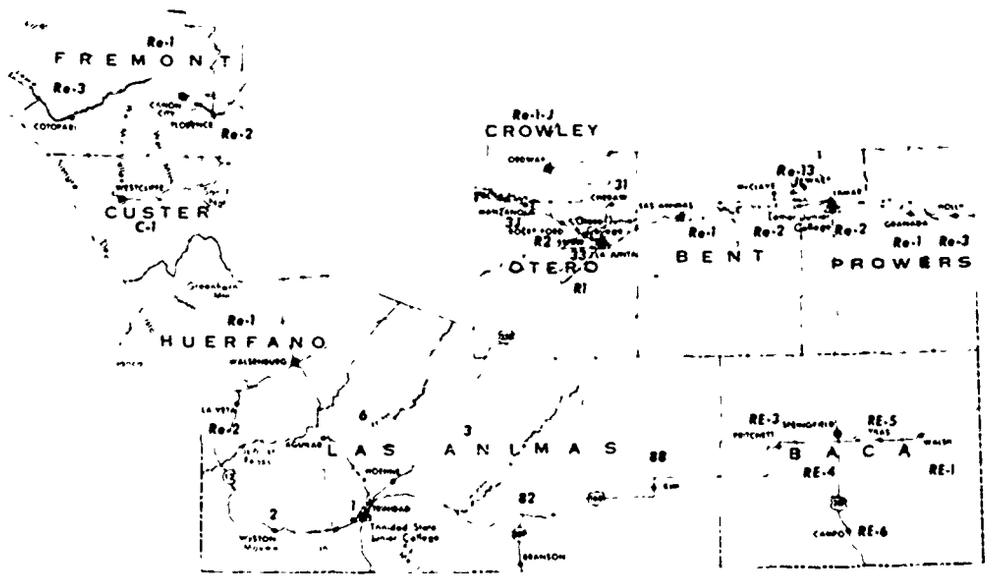


Table XV. Population Projections By Age Cohorts:
State Economic Area 5

COUNTY	AGE GROUP	1970	1975	1980
Baca	0-5	500	500	500
	6-19	2,000	2,000	2,000
	20+	3,500	3,500	3,500
	All ages	6,000	6,000	6,000
Bent	0-5	800	800	800
	6-19	2,000	2,000	2,000
	20+	4,100	4,100	4,100
	All ages	6,900	6,900	6,900
Crowley	0-5	400	400	400
	6-19	1,000	1,000	1,000
	20+	2,100	2,100	2,100
	All ages	3,500	3,500	3,500
Custer	0-5	100	100	100
	6-19	300	300	300
	20+	800	800	800
	All ages	1,200	1,200	1,200
Fremont	0-5	1,800	1,900	1,900
	6-19	6,000	6,500	6,500
	20+	14,200	14,100	14,600
	All ages	22,000	22,500	23,000
Huerfano	0-5	900	900	900
	6-19	2,500	2,500	2,700
	20+	4,600	5,100	5,400
	All ages	8,000	8,500	9,000
Las Animas	0-5	2,000	2,200	2,000
	6-19	5,200	5,250	6,500
	20+	8,800	10,050	10,500
	All ages	16,000	17,500	19,000
Otero	0-5	3,500	3,500	3,500
	6-19	8,200	8,200	8,200
	20+	13,300	13,300	13,300
	All ages	25,000	25,000	25,000
Prowers	0-5	1,800	2,000	2,000
	6-19	4,000	4,500	5,000
	20+	8,200	8,500	9,000
	All ages	14,000	15,000	16,000

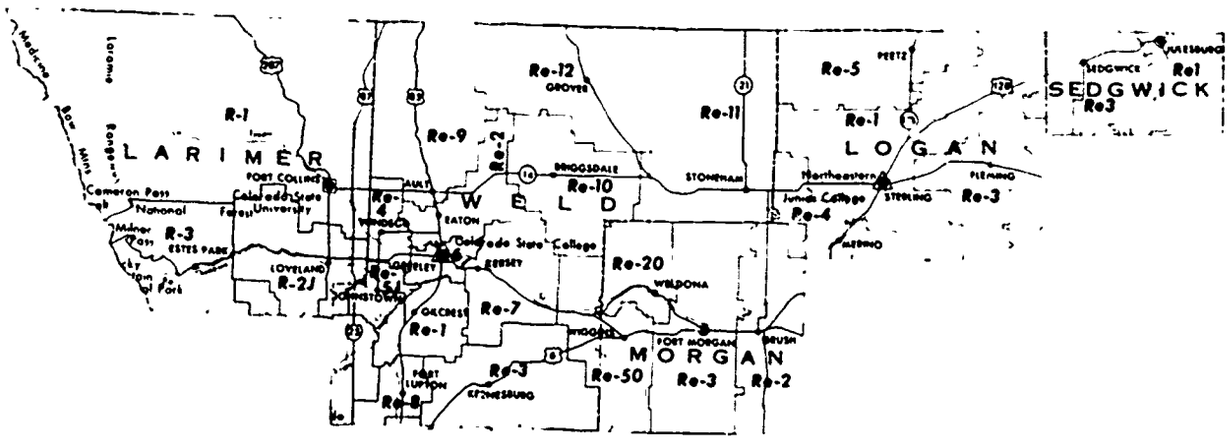


Table XVI. Population Projections By Age Cohorts: *State Economic Area 3*

COUNTY	AGE GROUP	1970	1975	1980
Larimer	0-5	7,000	10,000	13,000
	6-19	24,000	25,000	25,000
	20+	44,000	56,000	72,000
	All ages	75,000	91,000	110,000
Logan	0-5	2,500	2,700	2,600
	6-19	6,000	6,500	7,000
	20+	11,500	11,800	12,400
	All ages	20,000	21,000	22,000
Morgan	0-5	2,700	2,800	2,800
	6-19	6,500	7,000	7,500
	20+	10,800	11,200	11,700
	All ages	20,000	21,000	22,000
Sedgwick	0-5	400	400	500
	6-19	1,300	1,300	1,500
	20+	1,800	1,800	2,000
	All ages	3,500	3,500	4,000
Weld	0-5	9,000	10,000	13,000
	6-19	27,000	27,000	29,000
	20+	49,000	59,000	68,000
	All ages	85,000	96,000	110,000

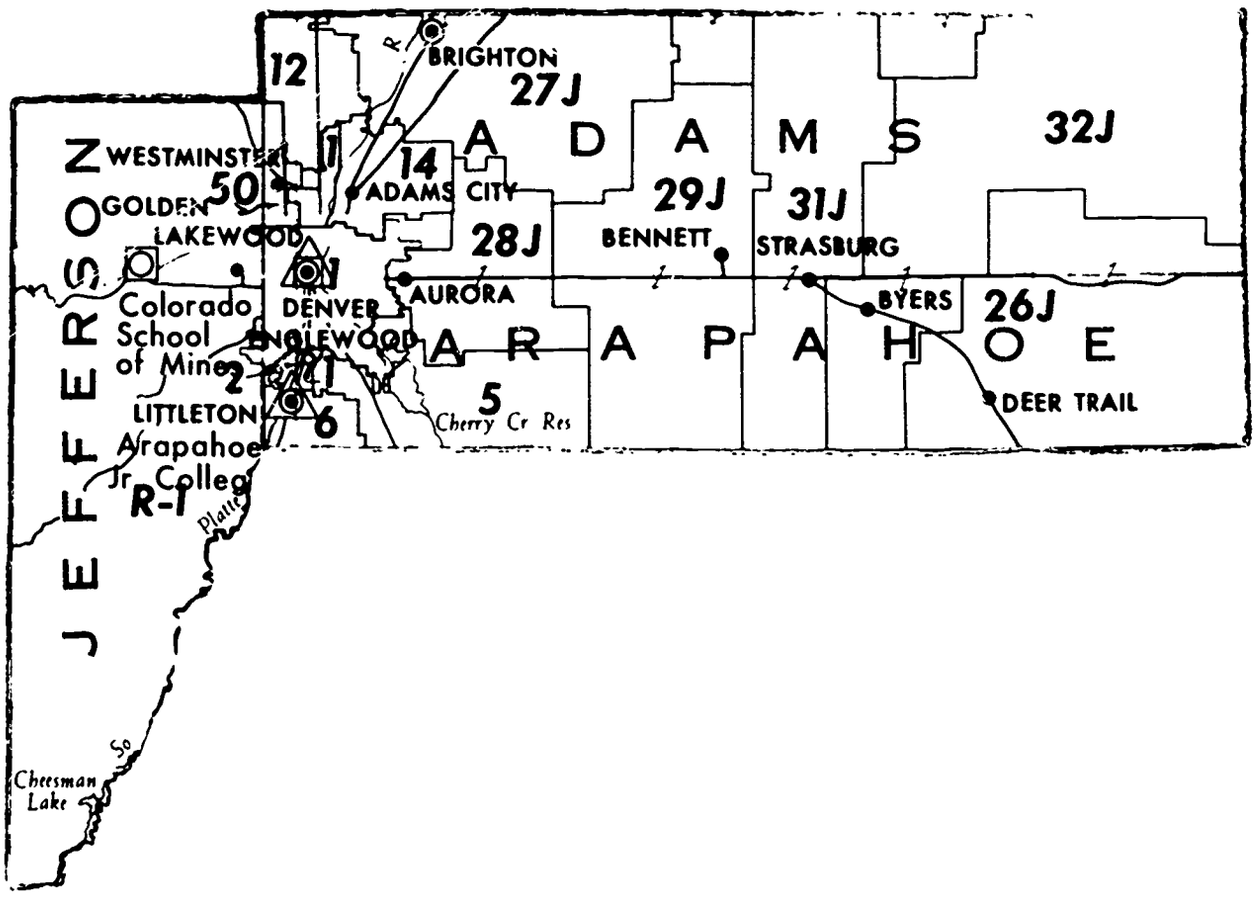


Table XVII. Populatoin Projections By Age Cohorts:
State Economic Area A

COUNTY	AGE GROUP	1970	1975	1980
Adams	0-5	23,000	25,000	28,000
	6-19	55,000	56,000	55,000
	20+	102,000	112,000	127,000
	All ages	180,000	193,000	210,000
Arapahoe	0-5	19,000	21,000	24,000
	6-19	48,000	49,000	50,000
	20+	88,000	100,000	115,000
	All ages	155,000	170,000	189,000
Denver	0-5	38,800	40,350	45,300
	6-19	118,200	114,650	104,700
	20+	313,000	335,000	365,000
	All ages	470,000	490,000	515,000
Jefferson	0-5	29,000	41,000	50,000
	6-19	72,000	82,000	92,000
	20+	134,000	171,000	215,000
	All ages	235,000	294,000	357,000

Table XVIII. Projected Population Growth in Colorado
From 1960 to 1985 by State Economic Area

SEA	1960	1985	AMOUNT OF CHANGE	PERCENT OF CHANGE
1	76,322	129,813	53,491	70.1
2	163,901	213,564	49,663	30.3
3	171,423	302,549	131,126	76.5
4	45,982	78,516	32,534	70.8
5	104,482	123,532	19,050	18.2
C	118,707	198,907	80,200	67.6
B	143,742	439,198	295,456	205.5
D	74,254	238,000	163,746	220.5
A	855,129	1,568,000	712,871	83.4
Colorado	1,753,942	3,292,079	1,538,137	87.7

Table XIX. Colorado Cities and Towns With Greatest Population

CITY	POPULATION 1960	POPULATION 1968
Arvada	19,242	32,200
Aurora	48,548	69,680
Boulder	37,718	60,360
Colorado Springs	70,194	118,500
Denver	493,887	489,000
Durango	10,530	11,600
Englewood	33,398	36,650
Fort Collins	25,027	40,000
Grand Junction	18,694	22,750
Greeley	26,413	33,000
Littleton	13,670	20,500
Longmont	11,489	18,500
Pueblo	91,181	104,200
Sterling	10,751	11,400
Thornton	11,353	14,500
Trinidad	10,691	11,000
Westminster	13,850	19,200
Total	946,636	1,110,040
Alamosa	6,205	6,700
Brighton	7,055	8,200
Canon City	8,973	9,360
Commerce City	8,970	18,500
Cortez	6,764	7,850
Fort Morgan	7,579	7,800
Golden	7,118	8,761
La Junta	8,026	9,000
Lamar	7,369	8,750
Loveland	9,734	14,726
Montrose	5,044	7,000
Walsenburg	5,071	6,200
Total	87,708	112,847

Table XIX. Colorado Cities and Towns With Greatest Population (Continued)

CITY	POPULATION 1960	POPULATION 1968
Broomfield	4,535	6,780
Edgewater	4,314	5,400
Glenwood Springs	3,637	5,000
Leadville	4,008	6,000
Manitou Springs	3,626	5,000
Rocky Ford	4,929	5,400
Sheridan	3,559	5,000
Total	28,608	38,580
Brush	3,621	4,000
Buena Vista	1,806	2,500
Burlington	2,090	2,900
Cherry Hills	1,931	4,000
Craig	3,984	4,500
Delta	3,832	4,100
Florence	2,821	3,200
Fort Lupton	2,194	2,532
Fountain	1,602	2,754
Gunnison	3,477	4,000
Lafayette	2,612	3,100
Las Animas	3,402	3,500
Monte Vista	3,385	3,750
Rifle	2,135	3,000
Total	38,892	47,836

Source: "Population of Colorado Cities and Towns 1960-68." Division of Accounts and Control, State Budget Office, Denver, Colorado, April, 1968.

Table XX. Net Migration for SEA 1
From 1955 to 1960, By Age and Sex

AGES	MALE	FEMALE	TOTAL
5-9	— 383	— 269	— 652
10-14	— 343	— 346	— 689
15-19	— 363	— 433	— 796
20-24	— 416	— 9	— 425
25-29	— 49	— 135	— 184
30-34	— 49	— 84	— 133
35-39	— 41	— 198	— 239
40-44	— 287	— 75	— 365
45-54	— 268	— 430	— 698
55-64	— 252	— 188	— 440
65+	— 377	— 411	— 788
All ages over 5	—2,828	—2,578	—5,409

Table XXI. Net Migration for SEA 2
From 1955 to 1960, By Age and Sex

AGES	MALE	FEMALE	TOTAL
5-9	105	200	305
10-14	— 90	122	32
15-19	— 437	— 491	— 928
20-24	—1,521	—1,121	—2,642
25-29	— 166	— 98	— 264
30-34	157	162	319
35-39	213	149	362
40-44	80	145	225
45-54	— 102	— 124	— 226
55-64	31	153	184
65+	76	— 97	— 21
All ages over 5	—1,654	—1,000	—2,654

Table XXII. Net Migration for SEA 3
From 1955 to 1960, By Age and Sex

AGES	MALE	FEMALE	TOTAL
5-9	— 296	— 344	— 640
10-14	— 67	14	— 53
15-19	514	777	1,291
20-24	37	— 83	— 46
25-29	— 531	— 654	—1,185
30-34	— 524	— 248	— 772
35-39	— 182	— 144	— 326
40-44	— 102	— 35	— 137
45-54	4	39	43
55-64	— 161	— 86	— 247
65+	159	92	251
All ages over 5	—1,149	— 672	—1,821

Table XXIII. Net Migration for SEA 4
From 1955 to 1960, By Age and Sex

AGES	MALE	FEMALE	TOTAL
5-9	— 370	— 391	— 761
10-14	— 315	— 140	— 455
15-19	— 393	— 615	—1,008
20-24	— 740	— 643	—1,383
25-29	— 94	— 59	— 153
30-34	— 207	— 251	— 458
35-39	— 198	— 145	— 343
40-44	— 130	— 191	— 321
45-54	— 104	— 67	— 171
55-64	— 55	— 79	— 134
65+	— 90	— 13	— 103
All ages over 5	—2,696	—2,594	—5,290

Table XXIV. Net Migration for SEA 5
From 1955 to 1960, By Age and Sex

AGES	MALE	FEMALE	TOTAL
5-9	— 372	— 592	— 964
10-14	— 428	— 430	— 858
15-19	— 524	— 652	—1,176
20-24	— 947	—1,313	—2,260
25-29	— 68	— 462	— 530
30-34	— 264	— 268	— 532
35-39	— 181	— 227	— 408
40-44	— 72	— 79	— 151
45-54	— 239	— 286	— 525
55-64	— 148	— 134	— 282
65+	76	— 17	59
All ages over 5	—3,167	—4,460	—7,627

Table XXV. Net Migration for SEA C
From 1955 to 1960, By Age and Sex

AGES	MALE	FEMALE	TOTAL
5-9	— 46	— 25	— 77
10-14	— 117	— 9	— 126
15-19	— 289	— 24	— 313
20-24	— 432	— 183	— 615
25-29	129	— 2	127
30-34	— 61	7	— 54
35-39	— 108	— 64	— 172
40-44	33	13	46
45-54	— 39	— 36	— 75
55-64	— 77	— 104	— 181
65+	— 108	85	— 23
All ages over 5	—1,115	— 342	—1,463

Table XXVI. Net Migration for SEA B
From 1955 to 1960, By Age and Sex

AGES	MALE	FEMALE	TOTAL
5-9	818	531	1,349
10-14	970	1,035	2,005
15-19	2,384	927	3,311
20-24	3,500	1,045	4,545
25-29	—3,538	— 377	—3,915
30-34	— 91	546	455
35-39	528	747	1,275
40-44	389	620	1,009
45-54	522	448	970
55-64	181	302	483
65+	189	92	281
All ages over 5	5,852	5,916	11,768

Tabe XXVII. Net Migration for SEA D
From 1955 to 1960, By Age and Sex

AGES	MALE	FEMALE	TOTAL
5-9	755	771	1,526
10-14	661	686	1,347
15-19	1,774	1,666	3,440
20-24	1,512	943	2,455
25-29	— 121	81	— 40
30-34	388	551	939
35-39	628	619	1,247
40-44	256	377	633
45-54	491	450	941
55-64	240	285	525
65+	196	352	548
All ages over 5	6,780	6,781	13,561

Table XXVIII. Net Migration for SEA A
From 1955 to 1960, By Age and Sex

AGES	MALE	FEMALE	TOTAL
5-9	3,856	3,920	7,776
10-14	3,274	2,909	6,183
15-19	3,221	2,715	5,936
20-24	2,587	6,545	9,132
25-29	4,110	4,788	8,898
30-34	3,470	2,830	6,300
35-39	2,325	1,712	4,037
40-44	1,812	1,718	3,530
45-54	1,680	1,854	3,534
55-64	631	915	1,546
65+	369	934	1,303
All ages over 5	27,335	30,840	58,175

Source for Tables XX through XXVIII:
U. S. Census of Population: 1960: Subject Reports: Mobility for States and State Economic Areas: Characteristics of the Population by Mobility Status and Migration Streams. (Final Report PC (2)-28) U. S. Department of Commerce, Bureau of the Census, Washington: U. S. Government Printing Office.

Table XXIX. Distribution of Minority Group Population By State Economic Area, 1960

SEA	SPANISH-SURNAME	NEGRO	INDIAN
1	4,279	132	103
2	24,334	237	2,123
3	13,794	231	108
4	557	25	28
5	22,343	503	82
C	25,437	2,247	87
B	6,135	5,069	203
D	3,103	141	87
A	57,191	31.407	1,467
State Total	157,191	39,992	4,288

Table XXX. Proportions of Minority Group Poulations of the State in Each SEA, 1960

SEA	SPANISH-SURNAME (PERCENT)	NEGRO (PERCENT)	INDIAN (PERCENT)
1	2.7	0.3	2.4
2	15.5	0.6	49.5
3	8.8	0.6	2.5
4	0.3	0.1	0.7
5	14.2	1.3	1.9
C	16.2	5.6	2.0
B	3.9	12.7	4.8
D	2.0	0.4	2.0
A	36.4	78.4	34.2
State Total	100.0	100.00	100.0

Table XXXI. Minority Group Proportions of Total Population of Each SEA, 1960

SEA	SPANISH-SURNAME (PERCENT)	NEGRO (PERCENT)	INDIAN (PERCENT)	TOTAL SPANISH-SURNAME NEGRO AND INDIAN (PERCENT)
1	5.6	0.2	0.1	5.9
2	14.8	0.1	1.3	16.2
3	8.0	0.1	0.1	8.2
4	1.2	0.1	0.1	1.4
5	21.4	0.5	0.1	22.0
C	21.4	1.9	0.1	23.4
B	4.3	3.5	0.1	7.9
D	4.2	0.2	0.1	4.5
A	6.7	3.7	0.2	10.6
State Average	9.0	2.3	0.2	11.5

Table XXXII. Negro Children as Proportion of Age Cohorts, and Negro Population as Proportion of Total Population, 1960

COUNTY	UNDER 5 YEARS OLD	5-14	15-19	NEGRO POPULATION AS PERCENT OF TOTAL
Adams	1.5	1.6	1.8	1.,
Arapahoe	0.6	0.6	0.8	0.7
Boulder	0.9	0.7	1.0	0.8
Denver	10.0	8.4	6.7	7.1
El Paso	5.9	3.7	3.9	4.2
Jefferson	0.3	0.3	1.3	0.4
Pueblo	2.1	2.2	2.1	2.2

Table XXXIII. Spanish-Surname Children as Proportion of Age Cohorts, and Spanish-Surname Population as Proportion of Total Population, 1960.

COUNTY	UNDER 5 YEARS OLD	5-14	15-19	SPANISH-SURNAME POPULATION AS PERCENT OF TOTAL
Adams	8.1	8.7	10.0	7.1
Arapahoe	3.1	2.9	2.8	2.6
Boulder	5.7	6.4	4.4	4.2
Conejos	61.8	55.7	61.5	53.1
Costilla	25.8	34.0	40.6	72.6
Denver	13.0	13.6	11.6	8.7
El Paso	6.1	5.6	5.3	4.3
Huerfano	54.7	56.1	66.6	45.9
Jefferson	2.4	2.3	3.1	2.0
Las Animas	42.0	45.6	50.2	37.2
Otero	31.1	29.3	28.6	22.1
Pueblo	29.6	28.2	25.3	21.4
Rio Grande	40.2	36.5	35.7	31.2
Weld	17.8	18.0	13.6	12.2

Table XXXIV. Median School Years Completed by Persons Twenty-Five Years Old and Older, 1960

STATE	ALL	WHITE	NON-WHITE
Utah	12.2	12.2	10.1
Alaska	12.1	12.4	6.6
California	12.1	12.1	10.5
Colorado	12.1	12.1	11.2
Nevada	12.1	12.2	8.8
Washington	12.1	12.2	10.5
Wyoming	12.1	12.1	9.3
Idaho	11.8	11.8	9.6
Oregon	11.8	11.8	9.9
Kansas	11.7	11.8	9.6
Massachusettes	11.6	11.6	10.3
Montana	11.6	11.7	8.7
Nebraska	11.6	11.7	9.6
Arizona	11.3	11.7	7.0
Hawaii	11.3	12.4	9.9
Iowa	11.3	11.3	9.5
New Mexico	11.2	11.5	7.1
Delaware	11.1	11.6	8.4
Connecticut	11.0	11.1	9.1
Maine	11.0	11.0	10.7
Florida	10.9	11.6	7.0
New Hampshire	10.9	10.9	11.7
Ohio	10.9	11.0	9.1
Vermont	10.9	10.9	10.5
Indiana	10.8	10.9	9.0
Michigan	10.8	11.0	9.1
Minnesota	10.8	10.8	9.9
New York	10.7	10.8	9.4
New Jersey	10.6	10.8	8.8
United States	10.6	10.9	8.2
Illinois	10.5	10.7	9.0
Maryland	10.4	11.0	8.1
Oklahoma	10.4	10.7	8.6
South Dakota	10.4	10.5	8.6
Texas	10.4	10.8	8.1
Wisconsin	10.4	10.4	9.0
Pennsylvania	10.2	10.3	8.9
Rhode Island	10.0	10.0	9.5
Virginia	9.9	10.8	7.2
Missouri	9.6	9.8	8.7
North Dakota	9.3	9.3	8.4
Alabama	9.1	10.2	6.5
Georgia	9.0	10.3	6.1

Table XXXIV. Median School Years Completed by Persons Twenty-Five Years Old and Older, 1960 (Continued)

STATE	ALL	WHITE	NON-WHITE
Arkansas	8.9	9.5	6.5
Mississippi	8.9	11.0	6.0
North Carolina	8.9	9.8	7.0
Louisiana	8.8	10.5	6.0
Tennessee	8.8	9.0	7.5
W ` irginia	8.8	8.8	8.4
Kentucky	8.7	8.7	8.2
South Carolina	8.7	10.3	5.9

Reproduced from page 28, Research Report 1969-R1, *Rankings of the States*, 1969, Research Division — National Education Association.

Table XXXV. Years of School Completed by White Persons of Spanish-Surname in Colorado, Urban and Rural: 1960

YEARS OF SCHOOL COMPLETED		TOTAL	URBAN	RURAL NON-FARM	RURAL FARM
Male, 14 years old and over		5,306	3,791	1,145	370
No school years completed		217	118	72	27
Elementary:	1-4 years	580	361	162	57
	5-6 years	710	459	179	72
	7 years	501	350	113	38
	8 years	1,030	756	219	55
High School:	1-3 years	1,343	991	275	77
	4 years	661	526	91	44
College:	1-3 years	207	173	34	
	4 years or more	57	57		
Median school years completed		8.5	8.8	8.2	7.8
Female, 14 years old and over		4,508	3,133	1,038	337
No school years completed		169	88	65	16
Elementary:	1-4 years	490	248	178	64
	5-6 years	584	326	161	97
	7 years	467	354	87	26
	8 years	967	701	226	40
High School:	1-3 years	1,045	810	194	41
	4 years	681	509	123	49
College:	1-3 years	79	75		4
	4 years or more	26	22	4	
Median school years completed		8.6	8.8	8.1	6.8

Table XXXVI. Comparison of Colorado Urban Population By Ethnic Group, Age Group and Number Employed, 1960

	All Groups	Spanish-Surname	Non-White	All Other
Total Population	1,292,768	108,025	46,352	1,138,391
Under Age 15	293,131	47,082	12,692	253,357
Civilian Labor Force	496,255	29,607	17,368	449,280

Table XXXVII. Comparison of Percent of Colorado Urban Population In Ethnic Groups, Age Groups and Civilian Labor Force With Dependency Ratios For Each Group, 1960

	All Groups	Spanish-Surname	Non-White	All Other
Total Population	100.00	8.40	3.60	88.10
Under Age 15	100.00	16.10	4.30	79.60
Civilian Labor Force	100.00	6.00	3.50	90.50
Dependency Ratio	1.61	2.65	1.67	1.53

Table XXXVIII. Comparison of Total Population in Colorado By Ethnic Group, Age Group and Number Employed, 1960

	All Groups	Spanish-Surname	Non-White	All Other
Total Population	1,753,925	157,173	53,675	1,543,077
Under Age 15	402,864	69,104	14,936	318,824
Civilian Labor Force	652,805	41,055	18,956	592,794

Table XXXIX. Comparison of Percent of Colorado Population In Ethnic Groups, Age Groups and Civilian Labor Force With Dependency Ratios For Each Group, 1960

	All Groups	Spanish-Surname	Non-White	All Other
Total Population	100.00	9.00	3.10	88.00
Under Age 15	100.00	17.20	3.70	79.10
Civilian Labor Force	100.00	6.30	2.90	90.80
Dependency Ratio	1.69	2.83	1.83	1.60

Table XL. Proportion of Colorado Non-Agricultural Employment By SEA and Industry, 1968

PERCENT

SEA	MINING	CONTRACT CONSTRUCT-TION	MANU-FACTURING	TRANSPOR-TATION AND PUBLIC UTILITIES	TRADE	SERVICES	SEA TOTAL
1	0.578	0.376	0.237	0.299	0.866	1.539	3.895
2	0.510	0.594	0.566	0.640	1.811	2.965	7.086
3	0.133	0.732	1.007	0.605	1.909	3.483	7.869
4	0.006	0.146	0.124	0.138	0.526	0.697	1.637
5	0.203	0.323	0.485	0.414	1.097	1.750	4.272
C	0.007	0.230	2.247	0.452	1.204	2.074	6.214
B	0.012	0.583	0.722	0.385	1.508	3.694	6.904
D-A	0.457	4.009	11.192	4.827	14.910	26.728	62.123
State Total	1.906	6.993	16.580	7.760	23.831	42.930	100.000

XLI. Proportion of Colorado Non-Agricultural Employment By SEA and Industry, 1975

PERCENT

SEA	MINING	CONTRACT CONSTRUCT-TION	MANU-FACTURING	TRANSPOR-TATION AND PUBLIC UTILITIES	TRADE	SERVICES	SEA TOTAL
1	0.451	0.351	0.243	0.266	0.859	1.603	3.773
2	0.398	0.554	0.581	0.569	1.798	3.087	6.987
3	0.104	0.682	1.035	0.537	1.896	3.627	7.881
4	0.005	0.136	0.127	0.123	0.523	0.725	1.639
5	0.158	0.301	0.498	0.368	1.090	1.823	4.238
C	0.006	0.214	2.307	0.403	1.196	2.159	6.285
B	0.009	0.544	0.742	0.342	1.497	3.846	6.980
D-A	0.402	3.728	10.424	4.446	15.424	27.793	62.217
State Total	1.533	6.510	15.957	7.054	24.283	44.663	100.000

Table XLII. Proportion of Colorado Non-Agricultural Employment By SEA

SEA	1970	1975	1980	1985
1	3.900	3.773	3.895	3.880
2	7.600	6.987	6.569	6.661
3	7.800	7.880	8.243	8.296
4	1.400	1.639	1.873	1.934
5	4.800	4.236	3.929	3.945
C	6.200	6.284	6.569	6.533
B	6.900	6.978	7.462	7.750
D-A	61.400	62.223	61.450	61.001
State Total	100.000	100.000	100.000	100.000

Table XLIII. Proportion of Colorado Total Employment By SEA

SEA	1970	1975	1980	1985
1	4.068	3.936	4.022	3.983
2	8.269	7.580	7.087	7.056
3	8.887	8.865	8.876	8.807
4	2.132	2.192	2.309	2.286
5	5.147	4.584	4.219	4.179
C	5.986	6.014	6.423	6.415
B	6.677	6.703	7.284	7.601
D-A	58.834	60.126	59.780	59.673
State Total	100.000	100.000	100.000	100.000

Table XLIV. Colorado's Projected Labor Force, By Industry and Population, By SEA, 1970

SEA	Agri-cultural Employ-ment	Non Agri-cultural Employ-ment	Total Employ-ment	Civilian Labor Force	Labor Force Participa-tion Rate	Population
1	3,525	31,085	34,610	35,680	.40	89,200
2	9,682	60,599	70,281	72,455	.43	168,500
3	12,361	62,649	75,010	77,330	.38	203,500
4	6,721	11,414	18,135	19,696	.40	49,200
5	5,734	38,056	43,790	45,144	.44	102,600
C	1,128	49,797	50.925	52,500	.42	125,000
B	1,175	55,624	56,799	58,556	.23	254,592
D-A	7,774	492,746	500,520	516,000	.43	1,200,000
State Total	48,100	801,970	850,070	877,361	.40	2,192,592

Table XLV. Colorado's Projected Labor Force, By Industry and Population, By SEA, 1975

SEA	Agri-cultural Employ-ment	Non Agri-cultural Employ-ment	Total Employ-ment	Civilian Labor Force	Labor Force Paricipa-tion Rate	Population
1	3,150	34,714	37,864	39,035	.39	100,700
2	8,652	64,278	72,930	75,186	.42	177,000
3	11,046	72,500	83,546	86,130	.37	232,500
4	6,006	15,078	21,084	21,736	.37	59,200
5	5,124	38,973	44,097	45,461	.43	106,100
C	1,008	57,813	58,821	60,640	.41	148,000
B	1,050	64,200	65,250	67,268	.22	308,175
D-A	5,964	572,444	578,408	596,297	.42	1,412,000
State Total	42,000	920,000	962,000	991,753	.39	2,543,675

Table XLVI. Colorado's Projected Labor Force, By Industry and Population, By SEA, 1980

SEA	Agri-cultural Employ-ment	Non Agri-cultural Employ-ment	Total Employ-ment	Civilian Labor Force	Labor Force Paricipa-tion Rate	Popnlation
1	2,850	40,730	43,580	44,928	.39	115,200
2	7,828	68,967	76,795	79,170	.42	188,500
3	9,994	86,191	96,185	99,160	.37	268,000
4	5,434	19,581	25,015	25,789	.37	69,700
5	4,636	41,078	45,714	47,128	.43	109,600
C	912	68,686	69,598	71,750	.41	175,000
B	950	77,973	78,923	81,364	.22	369,835
D-A	5,396	642,370	647,766	667,800	.42	1,590,000
State Total	38,000	1,045,576	1,083,576	1,117,089	.39	2,885,835

Table XLVII. Colorado's Projected Labor Force By Industry and Population, By SEA, 1985

SEA	Agri-cultural Employ-ment	Non Agri-cultural Employ-ment	Total Employ-ment	Civilian Labor Force	Labor Force Participa-tion Rate	Population
1	2,625	46,483	49,108	50,627	.39	129,813
2	7,210	75,796	87,006	89,697	.42	213,564
3	9,205	99,380	108,585	111,943	.37	302,549
4	5,005	23,174	28,179	29,051	.37	78,516
5	4,270	47,255	51,525	53,119	.43	123,532
C	840	78,265	79,105	81,552	.41	198,907
B	875	92,850	93,725	96,624	.22	439,198
D-A	4,970	730,794	735,764	758,520	.42	1,806,000
State Total	35,000	1,193,997	1,228,997	1,271,133	.39	3,292,079

Table XLVIII. Personal Income in Colorado's State Economic Area 1: 1960-1966 (In Thousands of Dollars)

County	1960	1961	1962	1963	1964	1965	1966
Chaffee	14,697	15,241	15,770	17,883	19,757	22,842	20,720
Clear Creek	6,531	6,671	6,681	7,584	9,126	10,246	12,273
Eagle	7,243	7,988	9,453	10,372	11,873	13,857	17,408
Garfield	24,729	26,118	28,813	29,781	32,902	39,190	40,999
Gilpin	1,377	1,563	1,804	2,033	2,290	2,251	2,296
Grand	7,298	7,441	7,812	8,449	8,957	9,108	9,459
Gunnison	11,297	12,848	14,103	15,652	16,586	16,128	17,082
Hinsdale	1,049	1,039	1,074	1,459	1,471	1,468	1,561
Jackson	3,818	3,751	4,210	4,216	4,097	4,262	3,875
Lake	13,082	14,113	12,036	14,420	16,296	23,023	19,110
Mineral	777	860	905	934	1,041	951	1,035
Moffat	17,505	16,956	18,627	18,714	19,408	18,725	20,488
Ouray	3,082	3,166	3,003	3,015	3,155	3,431	3,600
Park	4,194	3,752	3,691	3,987	4,196	4,504	4,542
Pitkin	7,292	8,413	9,021	10,503	13,352	16,359	17,440
Rio Blanco	11,538	11,902	12,349	12,500	13,147	12,122	11,516
Routt	10,659	10,821	11,923	12,454	12,531	13,264	13,516
San Juan	1,341	1,168	1,301	1,323	1,507	1,558	1,548
Summit	5,162	5,412	5,221	5,900	7.319	8,484	8,672
Teller	4,715	4,683	6,136	5,566	5,538	6,861	5,895
SEA 1 Total	157,386	163,906	173,933	186,745	204,549	228,634	233,035

Table XLIX. Personal Income in Colorado's State Economic Area 2: 1960-1966 (In Thousands of Dollars)

County	1960	1961	1962	1963	1964	1965	1966
Alamosa	17,393	18,508	19,464	20,265	20,863	21,691	22,646
Archuleta	3,666	4,057	4,378	4,472	4,207	5,236	5,008
Conejos	9,105	9,429	10,066	9,290	9,962	10,966	11,127
Costilla	3,658	3,834	3,907	4,278	4,346	3,736	4,072
Delta	23,886	25,250	26,187	25,073	26,737	27,714	26,960
Dolores	4,144	4,248	3,662	3,847	4,048	4,630	4,631
La Plata	38,511	41,049	43,468	41,857	43,836	38,417	44,166
Mesa	106,418	110,866	116,440	118,678	130,949	132,722	134,503
Montezuma	25,133	25,249	25,994	28,501	30,269	31,031	31,773
Montrose	29,253	30,434	32,277	33,722	36,089	37,159	38,298
Rio Grande	16,908	17,048	17,763	19,295	21,601	23,022	23,368
Saguache	5,899	5,889	6,321	6.533	7,085	7,758	7,215
San Miguel	6,270	6,062	6,174	6,236	6,099	6,051	6,300
SEA 2 Total	290,244	301,923	316,101	322,047	346,091	350,133	360,067

Table L. Personal Income in Colorado's State Economic Area 3: 1960-1966 (In Thousands of Dollars)

County	1960	1961	1962	1963	1964	1965	1966
Larimer	107,708	112,957	127,137	141,846	156,865	169,542	176,644
Logan	42,250	43,079	45,367	47,989	48,095	47,627	48,550
Morgan	40,019	38,985	42,943	44,606	44,889	41,706	48,402
Sedgwick	8,059	8,362	8,660	8,619	9,630	8,446	9,010
Weld	133,470	141,109	152,101	159,848	166,161	172,018	176,890
SEA 3 Total	331,506	344,492	376,208	402,908	425,640	439,339	459,496

Table LI. Personal Income in Colorado's State Economic Area 4: 1960-1966 (In Thousands of Dollars)

County	1960	1961	1962	1963	1964	1965	1966
Cheyenne	7,002	8,149	8,452	7,443	6,702	6,697	8,048
Douglas	8,869	10,260	11,079	11,862	13,750	14,644	15,260
Elbert	5,651	6,264	6,948	5,992	5,999	6,606	7,298
Kiowa	4,784	5,083	5,056	4,421	3,891	3,971	3,992
Kit Carson	13,652	14,182	14,103	15,102	15,062	15,257	16,334
Lincoln	11,211	11,101	11,048	10,786	10,169	10,869	10,861
Phillips	9,216	10,589	11,050	10,334	9,119	8,357	8,450
Washiington	12,098	13,221	13,569	12,662	11,440	11,456	9,386
Yuma	17,049	17,408	18,366	17,993	16,754	17,731	18,570
SEA 4 Total	89,532	96,257	99,671	96,595	92,886	95,588	98,199

Table LII. Personal Income in Colorado's State Economic Area 5: 1960-1966 (In Thousands of Dollars)

County	1960	1961	1962	1963	1964	1965	1966
Baca	11,738	11,399	12,411	14,190	11,009	10,954	13,863
Bent	12,539	13,285	14,178	13,877	13,675	14,240	15,496
Crowley	5,613	5,416	5,225	5,231	4,527	4,837	4,806
Custer	1,785	1,756	1,862	1,771	1,711	1,968	1,932
Fremont	32,816	34,282	35,004	37,808	39,116	42,424	43,475
Huerfano	10,801	11,359	11,876	12,135	11,995	12,241	12,523
Las Animas	28,591	26,497	28,405	27,796	27,544	29,255	29,941
Otero	40,368	41,884	43,907	46,211	46,738	48,545	50,986
Prowers	22,275	23,296	24,080	25,394	24,876	27,209	28,378
SEA 5 Total	166,526	169,174	176,948	184,413	181,191	191,673	201,400

Table LIII. Personal Income in Colorado's State Economic Areas C, B and D: 1960-1966 (In Thousands of Dollars)

County	1960	1961	1962	1963	1964	1965	1966
Pueblo (SEA C)	226,808	232,465	242,021	256,523	288,431	314,950	313,625
El Paso (SEA B)	320,923	348,251	393,154	428,290	486,392	525,232	546,482
Boulder (SEA D)	176,297	199,885	231,327	254,332	270,568	293,919	312,488

Table LIV. Personal Income in Colorado's State Economic Area A: 1960-1966 (In Thousands of Dollars)

County	1960	1961	1962	1963	1964	1965	1966
Adams	248,647	310,731	335,743	418,988	421,341	451,381	486,761
Arapahoe	307,878	450,697	409,156	451,246	457,443	464,504	493,395
Denver	1,386,096	1,370,319	1,439,692	1,397,497	1,463,756	1,512,293	1,497,801
Jefferson	353,977	422,407	486,637	578,106	602,743	625,641	679,635
SEA A Total	2,296,598	2,554,154	2,671,228	2,845,837	2,945,283	3,053,819	3,157,592
State Total	4,055,820	4,410,507	4,680,591	4,977,690	5,241,031	5,493,287	5,682,384

Source of Tables XLVIII - LIV: 1960-64—Seastone, Don, and Roger Herriet. *The Level of Personal Income and Gross Product in Colorado Counties and Regions. 1960-66.* Fort Collins, Colorado, Department of Economics, Colorado State University, August 19, 1966. 1965-66—Seastone, Don, and Jack Beattie. *Personal Income and Gross Product All Colorado Counties and Regions, 1966, Based on January—September Data.* Publication No. 3, Personal Income and Gross Product Series. Fort Collins, Colorado, Department of Economics, Colorado State University, November, 1966.

Table LV. Personal Income in Colorado, By State Economic Areas, 1960-1966 (In Thousands of Dollars)

SEA	1960	1961	1962	1963	1964	1965	1966
1	157,386	163,906	173,933	186,745	204,549	228,634	233,035
2	290,244	301,923	316,101	322,047	346,091	350.133	360,067
3	331,506	344,492	376,208	402,908	425,640	439,339	459,496
4	89,532	96,257	99,671	96,595	92,886	95,588	98,199
5	166,526	169,174	176,948	184,413	181,191	191,673	201,400
C	226,808	232,465	242,021	256,523	288,431	314,950	313,625
B	320,923	348,251	393,154	428,290	486,392	525,232	546,482
D	176,297	199,885	231,327	254,332	270,568	293,919	312,488
A	2,296,598	2,554,154	2,671,228	2,845,837	2,945,283	3,053,819	3,157,592
State Total	4,055,820	4,410,507	4,680,591	4,977,690	5,241,031	5,493,287	5,682,384

Table LVI. Percent of Personal Income in Colorado By State Economic Areas, 1960-1966

SEA	1960	1961	1962	1963	1964	1965	1966
1	3.88	3.72	3.72	3.75	3.90	4.16	4.10
2	7.16	6.85	6.75	6.47	6.60	6.37	6.34
3	8.17	7.81	8.04	8.09	8.12	8.00	8.09
4	2.21	2.18	2.13	1.94	1.77	1.74	1.73
5	4.11	3.84	3.78	3.70	3.46	3.49	3.54
C	5.59	5.27	5.17	5.15	5.50	5.73	5.52
B	7.91	7.90	8.40	8.60	9.28	9.56	9.62
D	4.35	4.53	4.94	5.11	5.16	5.35	5.50
A	56.62	57.91	57.07	57.17	56.20	55.59	55.57
State Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table LVII. Amount of Change in Colorado Personal Income (In Millions of Dollars)

SEA	1961	1962	1963	1964	1965	1966
1	6.5	10.0	12.8	17.8	24.1	4.4
2	11.7	14.2	5.9	24.0	4.0	9.9
3	13.0	31.7	26.7	22.7	13.7	20.2
4	6.7	3.4	-3.1	-3.7	2.7	2.6
5	2.6	7.8	7.5	-3.2	10.5	9.7
C	5.7	9.6	14.5	31.9	26.5	-1.3
B	27.3	44.9	35.1	58.1	38.8	21.3
D	23.6	31.4	23.0	16.2	23.4	18.6
A	257.6	117.1	174.6	99.4	108.5	103.8
State Total	354.7	270.1	297.1	253.3	252.3	189.2

Table LVIII.

Proportion of Households in Colorado With Incomes Under $4000, 1965, and Per Capita Personal Income, 1964

County	Percent Households with Income under $4000	Average Per Capita Personal Income
Moffat	32	$2553
Routt	51	2021
Rio Blanco	33	2434
Garfield	43	2632
Jackson	44	2341
Grand	42	2454
Gilpin	52	2955
Clear Creek	42	3147
Summit	24	3659
Eagle	54	2423
Pitkin	32	4307
Lake	30	2172
Park	45	2398
Teller	55	2130
Chaffee	50	2345
Gunnison	46	2632
Hinsdale	23	7365
Mineral	54	2191
Ouray	58	1856
San Juan	55	1722
Mesa	41	2424
Delta	63	1697
Montrose	53	1869
San Miguel	44	2159
Dolores	38	1840
Montezuma	48	2162
La Plata	42	2191
Archuleta	65	1544
Saguache	66	1540
Rio Grande	56	1830
Alamosa	50	1949
Conejos	68	1145
Costilla	75	1073
Larimer	45	2413
Weld	48	2103
Morgan	47	2107
Logan	40	2334
Sedgwick	46	2266
Phillips	51	2026
Washington	51	1707
Yuma	54	1861
Douglas	43	2370
Elbert	64	1643
Kit Carson	49	2092
Lincoln	52	1918

Table LVIII (Continued)
Proportion of Households in Colorado With Incomes Under $4000, 1965, and Per Capita Personal Income, 1964

COUNTY	PERCENT HOUSEHOLDS WITH INCOME UNDER $4,000	AVERAGE PER CAPITA PERSONAL INCOME
Cheyenne	44	$2393
Kiowa	43	1621
Crowley	58	1131
Otero	49	1892
Bent	54	1817
Prowers	52	1829
Baca	53	1706
Las Animas	62	1398
Huerfano	66	1508
Custer	68	1342
Fremont	52	1862
Pueblo	38	2271
El Paso	38	2827
Boulder	32	3006
Adams	26	2753
Arapahoe	23	3314
Jefferson	21	3464
Denver	31	2782
Colorado	35	2579

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