DOCUMENT RESUME

ED 109 759 95 EA 007 347

TITLE Skyline Wide Educational Plan (SWEP) Planning Project. Combined Quarterly Report No. 4 (April 1 to June 30, 1974) and Final Report (July, 1973 to August, 1974). Volume 1.

INSTITUTION Dallas Independent School District, Tex. Dept. of Research and Evaluation.

SPONS AGENCY Bureau of School Systems (DHEW/OE), Washington, D.C.

PUB DATE Aug 74

NOTE 200p.; Related documents are EA 007 348-349

EDRS PRICE MF-$0.76 HC-$9.51 PLUS POSTAGE

DESCRIPTORS Community Role; Curriculum Development; *Educational Change; *Educational Objectives; *Educational Planning; *Futures (of Society); *Models; Prediction; Secondary Education; Simulation

IDENTIFIERS *Delphi Technique; Texas

ABSTRACT

The mission of Project SWEP (Skyline Wide Educational Plan) was to conceptualize the secondary school of the years 1980-2000 and to develop a viable working model of such schooling. The staff first sought a comprehensive description of the society of the 1980s and beyond, with emphasis on how education might be impacted by various facets of that future society. From this description of society, a graphic model of future schooling evolved. This SWEP model was then applied to the creation of a hypothetical secondary school serving the needs of special students within the Dallas-Fort Worth metroplex. This application provided a test of the model's logic, of its planning specifications, and of its possible utility as a guide for future planners within the metroplex as well as across the nation. This application of the model to an imaginary schooling site was assigned the acronym SWEP-H and was envisioned as having characteristics related to such areas as learning environments, instructional techniques and programs, student choices, scheduling systems, societal changes, staff participation, staffing arrangements, and continuous learning. (Author/IPT)


1990

SKYLINE WIDE EDUCATIONAL PLAN

AUGUST, 1974

VOLUME I

dallas independent school district

October, 1974

Nolan Estes

Dear Colleague:

For years education has played "catch up" with the demands of society and work. We taught, or placed emphasis on, those ideas and subjects which businesses needed their employees to know or which colleges required for entrance. But industry has made tremendous advances; college is not for everyone; and teenagers want to work as soon as they graduate. So, again education finds itself following rather than leading.

Project SWEP (Skyline West Educational Plan) was created to determine what a secondary school should be like in the two decades between 1980 and 2000. Such forecasting is difficult for any group, but particularly difficult for one studying a field which is not clearly defined in 1974.

Our problem was to determine the society of those two decades, then to design a curriculum to meet that society. There will, of course, be certain needs that the educational process must meet—skills, attitudes, traditions, knowledge and values. While we realize our acute responsibility to the coming society, we also are aware that the public schools reach only so far, and that other operations and media must assume jobs of training and guidance, also. Our responsibility is great, though, and we will neither shun it nor neglect it.

We have tried to define in this study the needs which fall on our shoulders, specifically in the area of the secondary school, and have outlined specific programs—including staff description, student population and facilities—which hopefully will stand up to the demands of the 1980s and 1990s.

We hope you find this volume interesting and informative.

Sincerely,

Nolan Estes

Nolan Estes
General Superintendent

NE:lf

3700 Ross Avenue Dallas Texas 75204 214 824-1620

SKYLINE WIDE EDUCATIONAL PLAN

(SWEP)

PLANNING PROJECT

COMBINED QUARTERLY REPORT NO. 4 (APRIL 1 to JUNE 30, 1974)

AND

FINAL REPORT (JULY, 1973 TO AUGUST, 1974)

PREPARED FOR:

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

OFFICE OF EDUCATION

BUREAU OF EQUAL EDUCATIONAL OPPORTUNITY

SPECIAL PROJECTS BRANCH

400 MARYLAND AVENUE, S.W.

WASHINGTON, D.C. 20202

PREPARED BY:

SWEP PROJECT STAFF

SUITE 302-303

2218 BRYAN STREET

DALLAS, TEXAS 75201

SKYLINE WIDE EDUCATIONAL PLAN

SWEP

A project for planning the school of the future to serve the Dallas-Fort Worth Metroplex

Sponsored by the U. S. Office of Education

You see things as they
are, and you ask "Why?"
But I dream things that
never were: and I ask
"Why not?"

George Bernard Shaw

FRONTISPIECE

THREE DIMENSIONAL

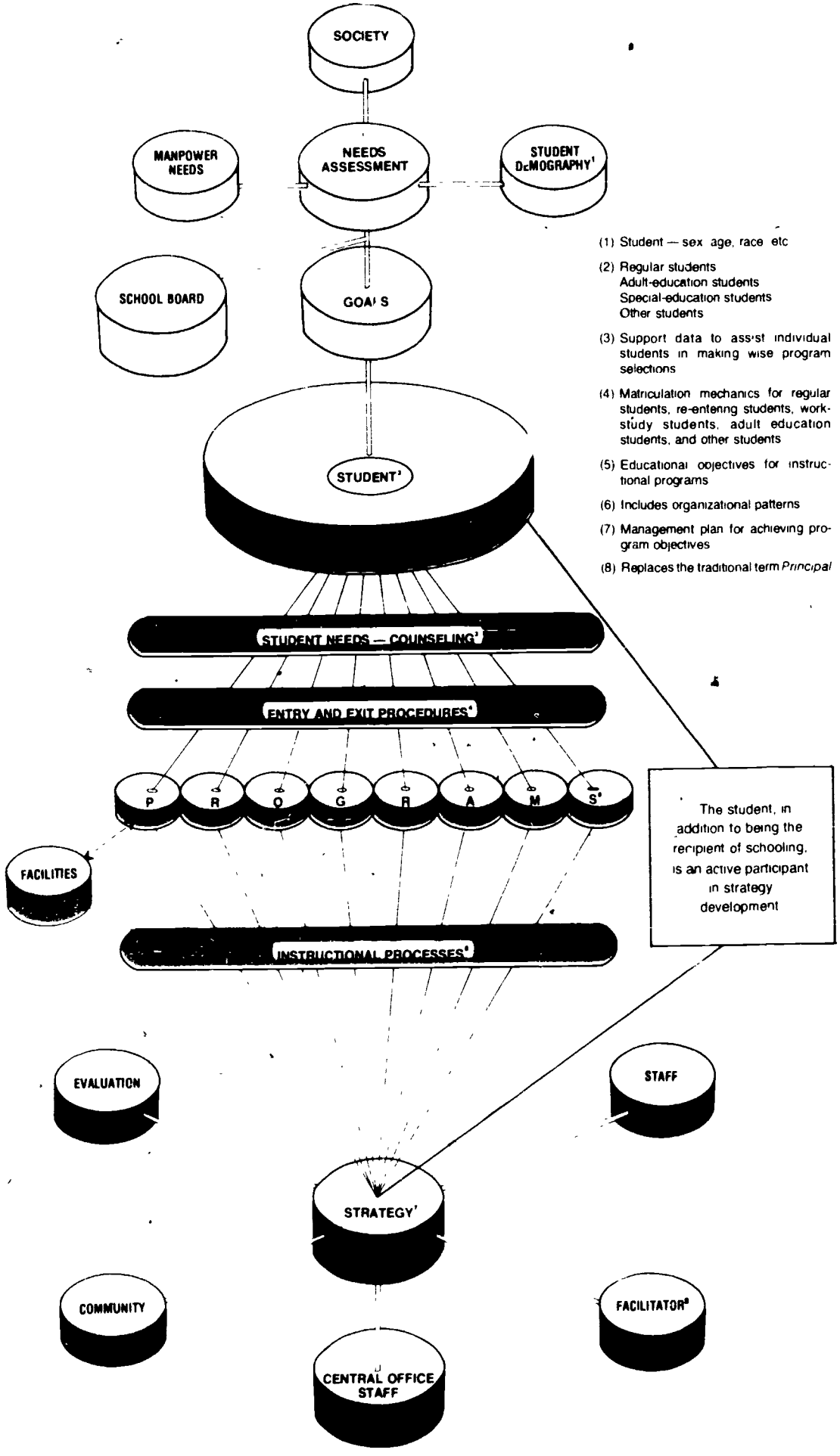
MODEL

SECONDARY SCHOOL

OF THE

FUTURE

MODEL FOR SECONDARY SCHOOLING OF THE FUTURE



SWEP EXECUTIVE SUMMARY

The mission of Project SWEP was to conceptualize the secondary school of the years 1980 - 2000 and to develop a viable working model of such schooling.

This task was difficult. In addition to the obvious uncertainties involved in making predictions about the role of future education, the literature revealed more than just a little lack of agreement as to what the ideal role of current education ought to be!

Chronologically, the Staff first sought a comprehensive description of the society of the 1980's and beyond, with emphasis upon how education might be impacted by various facets of that future society. From this description of society, a graphic model of future schooling evolved. This SWEP Model was next applied to the creation of a hypothetical secondary school serving the needs of special students within the Dallas-Fort Worth Metroplex. This application provided a test of the Model's logic, of its Planning Specifications, and of its possible utility as a guide for future planners within the Metroplex as well as across the Nation.

The SWEP Model's hypothetical application represented a synthesis and a melding of The Futures Survey data, the Delphi data, the National Review Committee input, and the considered judgments of the SWEP Staff. This hypothetical application of the Model to an imaginary schooling site was assigned the acronym SWEP-H and was envisioned as having these characteristics:

- SWEP-H programs would furnish a learning environment directed toward meeting the academic, career, and social needs of special students whose needs could not be met easily elsewhere in the Metroplex. The student body of approximately 5,000 would be comprised of a mix of ethnic minority students

This task was difficult. In addition to the obvious uncertainties involved in making predictions about the role of future education, the literature revealed more than just a little lack of agreement as to what the ideal role of current education ought to be!

Chronologically, the Staff first sought a comprehensive description of the society of the 1980's and beyond, with emphasis upon how education might be impacted by various facets of that future society. From this description of society, a graphic model of future schooling evolved. This SWEP Model was next applied to the creation of a hypothetical secondary school serving the needs of special students within the Dallas-Fort Worth Metroplex. This application provided a test of the Model's logic, of its Planning Specifications, and of its possible utility as a guide for future planners within the Metroplex as well as across the Nation.

The SWEP Model's hypothetical application represented a synthesis and a melding of The Futures Survey data, the Delphi data, the National Review Committee input, and the considered judgments of the SWEP Staff. This hypothetical application of the Model to an imaginary schooling site was assigned the acronym SWEP-H and was envisioned as having these characteristics:

- o SWEP-H programs would furnish a learning environment directed toward meeting the academic, career, and social needs of special students whose needs could not be met easily elsewhere in the Metroplex. The student body of approximately 5,000 would be comprised of a mix of ethnic minority students and educationally advantaged students.
- o Instructional techniques and programs would reflect technological advances and would be developed to suit the projected attitudinal, cognitive, and psychomotor needs of students in the 1980's and beyond. Such advances would include special-

ized applications of behavior technology and medical technology (schooling-related drugs, surgery, etc.).

- Special care would be exercised to insure that consumer education, conservation education, vocational-technical education, and the personal skills necessary for coping with society would be central to the schooling programs and relevant to the students' needs.
- The word school would have a much broader meaning than it does in the 1970's. Schooling would be inter-generational, inter-agency, and inter-regional. Schooling would be more intimately interfaced with societal components and would be more multi-sited, with much schooling occurring out in the community "where the action is."
- SWEP-H would be characterized by choice. Students would be counseled and encouraged to choose courses and teaching methods most suited to their particular learning styles, needs, aspirations, interests, and abilities. Instructional staff persons would be counseled, encouraged, and expected to choose the instructional processes with which they would be most comfortable and effective. The most qualified and professional teachers would have more flexible "teaching styles" and be thus suited to a variety of instructional processes.
- Process-wise and evaluation-wise, the school philosophy would be characterized by flexibility and a certain degree of risk orientation, especially in terms of innovative programs; and would foster an "If it teaches, and if it seems right, do it" approach to schooling. Facilities, antiquity, and such variables would not dictate school programs.
- Traditional scheduling would neither dominate nor dictate the instructional processes. Flexible scheduling would permit students and teachers to structure class times to accomodate

the students' needs.

- The word school would have a much broader meaning than it does in the 1970's. Schooling would be inter-generational, inter-agency, and inter-regional. Schooling would be more intimately interfaced with societal components and would be more multi-sited, with much schooling occurring out in the community "where the action is."
- SWEP-H would be characterized by choice. Students would be counseled and encouraged to choose courses and teaching methods most suited to their particular learning styles, needs, aspirations, interests, and abilities. Instructional staff persons would be counseled, encouraged, and expected to choose the instructional processes with which they would be most comfortable and effective. The most qualified and professional teachers would have more flexible "teaching styles" and be thus suited to a variety of instructional processes.
- Process-wise and evaluation-wise, the school philosophy would be characterized by flexibility and a certain degree of risk orientation, especially in terms of innovative programs; and would foster an "If it teaches, and if it seems right, do it" approach to schooling. Facilities, antiquity, and such variables would not dictate school programs.
- Traditional scheduling would neither dominate nor dictate the instructional processes. Flexible scheduling would permit students and teachers to structure class times to accomodate the widest spectrum of varied schedules and diverse curriculum arrangements required for community involvement, cooperative part-time studies, lectures, group discussion, off-campus instruction, travel experiences, or any other educational processes that would seem appropriate.

- Societal changes would be quickly reflected in teaching strategies. Mechanisms would be provided for the cooperative development of successful school strategies. Such development would require cooperative interaction between community representatives, parents, students, professional staff, the facilitator, the central office staff, [illegible]uation personnel.
- The design of the SWEP-H school presumes collective development and evaluation of educational goals and objectives, with input from all facets of society (including the school community). The design also incorporates a cybernetic systems approach to continuous program evaluation and development; therefore, input and feedback from students, faculty, patrons, administrators, and community serve as iterative components.
- Staffing arrangements for SWEP-H would include certificated professional teachers, non-certificated resource professionals, para-professionals with special training, and skilled lay persons from the global society to fulfill the special technical and academic roles delineated by a comprehensive needs assessment.
- The differentiated staff would function as an <u>instructional team.</u> Members of the team would provide the array of expertise and training necessary to diagnose a student's entry level for schooling to prescribe a program for schooling the student, to effect those instructional processes which would best match the student's needs and abilities and aspirations with the school's resources and instructors, and to evaluate the student's progress. (The reader is cautioned that, as used herein, instructional team and team teaching are not the same phrases. Team teaching is but one of the many possible processes of instruction; instructional team is the nomenclature

ation personnel.

- The design of the SWEP-H school presumes collective development and evaluation of educational goals and objectives, with input from all facets of society (including the school community). The design also incorporates a cybernetic systems approach to continuous program evaluation and development; therefore, input and feedback from students, faculty, [illegible], administrators, and community serve as iterative components.
- Staffing arrangements for SWEP-H would include certificated professional teachers, non-certificated resource professionals, para-professionals with special training, and skilled lay persons from the global society to fulfill the special technical and academic roles delineated by a comprehensive needs assessment.
- The differentiated staff would function as an instructional team. Members of the team would provide the array of expertise and training necessary to diagnose a student's entry level for schooling, to prescribe a program for schooling the student, to effect those instructional processes which would best match the student's needs and abilities and aspirations with the school's resources and instructors, and to evaluate the student's progress. (The reader is cautioned that, as used herein, instructional team and team teaching are not the same phrases. Team teaching is but one of the many possible processes of instruction; instructional team is the nomenclature for the entire instructional staff.)
- Each student would have the right to succeed in a course relative to her or his ability; therefore, grading procedures would be one of the many options which both teachers and students would face. Likely, fewer and fewer students and

teachers would elect instructional processes whose grading schemes are based on the traditional assumption that everyone cannot and/or should not succeed in a course! As a consequence, more and more courses would incorporate criterion-referenced (mastery-oriented) grading systems.

- Because of the unusual flexibility of this envisioned educational enterprise and because of its "responsible student choice" philosophy, continuous counseling of students by the entire schooling staff would play a vital role. Students would make choices of programs, of particular courses within programs, of times of day for schooling, of teachers, and of methods of instruction. Open campus and open-matriculation would require extensive student-parent decisions and assumptions of responsibility. Counseling would help insure that student learning styles were optimally matched with teacher teaching styles, and that both students and teachers were effectively matched with compatible instructional processes.
- Because schooling would be strongly student centered and because educational strategies would be designed to encourage responsible student choices, a critical element in the educational process, students would hopefully leave such future schools with a better sense of identity and with a higher self-esteem. They should likewise be better prepared responsibility-wise, for occupational, societal, and consumer roles in their society. They would be more aware of, and would assume greater responsibility for, the protection and conservation of their environment. This, of course, implies a concerned appreciation of self, of nature, and of aesthetics.
- SWEP-H schooling would articulate with the overall schooling of the citizen of the future, which would be virtually from the cradle to the grave. This continuous education would

tional enterprise and because of its "responsible student choice" philosophy, continuous counseling of students by the entire schooling staff would play a vital role. Students would make choices of programs, of particular courses within programs, of times of day for schooling, of teachers, and of methods of instruction. Open campus and open-matriculation would require extensive student-parent decisions and assumptions of responsibility. Counseling would help insure that student learning styles were optimally matched with teacher teaching styles, and that both students and teachers were effectively matched with compatible instructional processes.

- Because schooling would be strongly student centered and because educational strategies would be designed to encourage responsible student choices, a critical element in the educational process, students would hopefully leave such future schools with a better sense of identity and with a higher self-esteem. They should likewise be better prepared responsibility-wise, for occupational, societal, and consumer roles in their society. They would be more aware of, and would assume greater responsibility for, the protection and conservation of their environment. This, of course, implies a concerned appreciation of self, of nature, and of aesthetics.
- SWEP-H schooling would articulate with the overall schooling of the citizen of the future, which would be virtually from the cradle to the grave. This continuous education would encompass early childhood schooling to prepare an adaptable learner, adult education for career adjustments and retraining, and senior citizen schooling for retirement and leisure.
- SWEP-H would ideally be a school of the people, by the people, and for the people.

It is concluded that the SWEP Model appears to be both viable and universal, with application possibilities for school planners at any level of public education anywhere across the Nation.

- - - - - -

The appendices are found in Volume II of this Report. They reflect technical details and data of the research efforts, in terms of Metroplex student population data, Metroplex manpower needs, facility considerations, site considerations, analyses of the future society, Project finances, Project evaluation, et cetera. For example, Appendices 1 and 5 address themselves to certain of the anticipated constraints incumbent with conjoint schooling. This is because the initial application of the Project-resultant school would conceivably be situated anywhere within the Metroplex and thus the political, legal, and demographic facets of such a multi-district schooling venture had to be investigated. These investigations, reported in Volume II, include such facets as: "most likely" strategies and mechanisms for political, legal, and financial implementation of a SWEP school, forecasts of pupil enrollments throughout the Metroplex (including methods of derivation of the forecast data); forecasted ethnicity of the student population and the Metroplex population (including analyses of fertility rates and birth rates); "holding power" of future schools; forecasts of pupil and Metroplex family socio-economic status, and the like.

SWEP Volume II is a limited edition, is considered to be relevant only to readers having a special interest in the detailed data of the study, and can be purchased at cost by writing the auditor of the Dallas Independent School District, 3700 Ross Avenue, Dallas, Texas, 75204.

TABLE OF CONTENTS

VOLUME I--TECHNICAL DATA

TABLE OF CONTENTS

VOLUME II -- APPENDICES

1. Introduction

Skyline Wide Educational Plan (SWEP) was originally titled Skyline West Educational Park. During the first quarter of the life of the Project, it became apparent that the realities of the financial, social, political, legal, and educational milieu of the Dallas/Fort Worth Area (the Metroplex) precluded planning a specific educational park.

The Project's primary purpose was then redirected to the planning for quality secondary education in the Metroplex in the decade of the 1980's, and a consequent conceptualization of a model for the secondary school of the future. Because SWEP produced a model -- rather than a set of educational specifications for a designated educational park -- the original Project plans for "pre-specifications" of facility, staff, and programs were not attainable.

1.1 Project History

In April, 1973, the U.S. Office of Education (USOE) Special Projects Branch reviewed with individual school districts and consortia the Federal Government's interests in providing Emergency School Aid Act Title III grants for the planning of selected educational parks under the category of "Metropolitan Projects."

Metropolitan Projects specify that with an assumed student population of 5,000, these characteristics would exist:

a) At least 2,000 students (40%) would be from families whose income is in the upper 50% of that for the Standard Metropolitan Statistical Area (SMSA).

b) At least 2,500 students (50%) would score at or above the 60th percentile of the SMSA on a standardized test in general academic achievement.

c) Between 1,250 and 2,500 students (25%-50%) would be representative of all minority groups found in the SMSA.

The Project's primary purpose was then redirected to the planning for quality secondary education in the Metroplex in the decade of the 1980's, and a consequent conceptualization of a model for the secondary school of the future. Because SWEP produced a model -- rather than a set of educational specifications for a designated educational park -- the original Project plans for "pre-specifications" of facility, staff, and programs were not attainable.

1.1 Project History

In April, 1973, the U.S. Office of Education (USOE) Special Projects Branch reviewed with individual school districts and consortia the Federal Government's interests in providing Emergency School Aid Act Title III grants for the planning of selected educational parks under the category of "Metropolitan Projects."

Metropolitan Projects specify that with an assumed student population of 5,000, these characteristics would exist:

a) At least 2,000 students (40%) would be from families whose income is in the upper 50% of that for the Standard Metropolitan Statistical Area (SMSA).

b) At least 2,500 students (50%) would score at or above the 60th percentile of the SMSA on a standardized test in general academic achievement.

c) Between 1,250 and 2,500 students (25%-50%) would be representative of all minority groups found in the SMSA.

d) The percentage of minority group representation in the total staff would be equal to, or would exceed, the corresponding representation in the student body.

Additionally, the specifications provided that an educational park could provide either an all-level (K-12) education or solely a secondary education.

In response to USOE interest, the Dallas Independent School District (DISD), supported by the Fort Worth Independent School District (FWISD), submitted a proposal for the planning of a secondary level educational park to serve the Metroplex. The DISD was awarded a grant for the proposed project and contract work began in force with the start of DISD's 1973-74 school year, September, 1973. Prior to this, during mid-summer of 1973, Project facilities were acquired and staff members were assigned by both DISD and FWISD (See Section 4 for the logistics of the Project).

As the Project progressed, it became evident that the Metroplex communities would not support a specific educational park. Consequently, SWEP emphasis was shifted to the production of a universal kind of model for the secondary school of the future, and the application of this Model to a hypothetical Metroplex site. Conceptualization of the Model with its ancillary research and evaluation were completed in late spring of 1974.

1.2 Summary of SWEP Project Activities

At the outset it was obvious that SWEP -- as an educational program and institution -- could not exist in a vacuum. To be cost-effective as well as socially meaningful and responsive to community needs, SWEP would have to be interrelated with the future Metroplex in sociological and economic terms. Because of the lead time required to bring an educational program and facility into operation, it was apparent that "future" would likely mean pertinent to the decade of the 1980's and beyond. It was also apparent that no community could profit optimally from implementation of a plan that would be obsolescent shortly following its inception. Therefore, a time span from the year 1980 to the year 2000 was designated as the basic SWEP period of interest.

It was mandatory, then, to begin by envisioning the future years

1973-74 school year, September, 1973. Prior to this, during mid-summer of 1973, Project facilities were acquired and staff members were assigned by both DISD and FWISD (See Section 4 for the logistics of the Project).

As the Project progressed, it became evident that the Metroplex communities would not support a specific educational park. Consequently, SWEP emphasis was shifted to the production of a universal kind of model for the secondary school of the future, and the application of this Model to a hypothetical Metroplex site. Conceptualization of the Model with its ancillary research and evaluation were completed in late spring of 1974.

1.2 Summary of SWEP Project Activities

At the outset it was obvious that SWEP -- as an educational program and institution -- could not exist in a vacuum. To be cost-effective as well as socially meaningful and responsive to community needs, SWEP would have to be interrelated with the future Metroplex in sociological and economic terms. Because of the lead time required to bring an educational program and facility into operation, it was apparent that "future" would likely mean pertinent to the decade of the 1980's and beyond. It was also apparent that no community could profit optimally from implementation of a plan that would be obsolescent shortly following its inception. Therefore, a time span from the year 1980 to the year 2000 was designated as the basic SWEP period of interest.

It was mandatory, then, to begin by envisioning the future years of 1980-2000, both within and outside the Metroplex. To accomplish this, an extensive search was made of appropriate literature, a scenario of the future was produced through use of a Futures Study, and a Delphi study was conducted to establish educational goals priorities for the years to come. (Section 2 discusses the literature search and the research techniques).

Finally, a conceptual model of the future school evolved, along with Planning Specifications for implementation of this model. The Model was then applied to a hypothetical Metroplex school site, as a test of its logic and as a guide to future planners. (See Section 3). It was concluded that the Model would probably have universal applicability, and that the hypothetical application of the Model and related Project research provided bases for several recommendations for future schooling. (See Section 5).

2. The Research Data

The research data were gathered from a literature review, a Futures Survey, a collection of educational goals, an application of the Delphi method of forecasting, on-site inspections of Project-related facilities, and personal interviews.

2.1 Review of the Literature

Literature was surveyed for future trends and themes related to schooling facilities, goals, programs, manpower needs, and staff. These topics are discussed in later sections of this Report, and selected references appear in Section 6.

In addition, a large amount of literature related to the future (and to future planning) was surveyed, based primarily on searches of ERIC (Educational Research Information Center) files, using as descriptors such terms as:

Automation	Futurism
Career Development	Socioeconomic Influences
Educational Change	Technological Change

Studies located by the ERIC searches were reviewed and abstracted. Some sources from outside the ERIC files were consulted in order to substantiate ideas located and footnoted in the ERIC-abstracted literature. It is believed that an extremely

applicability, and that the hypothetical application of the model and related Project research provided bases for several recommendations for future schooling. (See Section 5).

2. The Research Data

The research data were gathered from a literature review, a Futures Survey, a collection of educational goals, an application of the Delphi method of forecasting, on-site inspections of Project-related facilities, and personal interviews.

2.1 Review of the Literature

Literature was surveyed for future trends and themes related to schooling facilities, goals, programs, manpower needs, and staff. These topics are discussed in later sections of this Report, and selected references appear in Section 6.

In addition, a large amount of literature related to the future (and to future planning) was surveyed, based primarily on searches of ERIC (Educational Research Information Center) files, using as descriptors such terms as:

Automation	Futurism
Career Development	Socioeconomic Influences
Educational Change	Technological Change

Studies located by the ERIC searches were reviewed and abstracted. Some sources from outside the ERIC files were consulted in order to substantiate ideas located and footnoted in the ERIC-abstracted literature. It is believed that an extremely broad sample of published thought on the society and the education of the future was inspected.

Research and evaluation strategies for Project SWEP were formulated in three domains after perusal of the literature. These were educational futurism, Delphi research methodology, and

contemporary educational goal development. The rationale for inquiries into these domains is presented below.

Educational Futurism -- The purpose for reviewing the futuristic literature was to tease out clues pertaining to the society of the 1980's. In doing so, an attempt was made to identify emergent themes and/or trends considered most likely to affect formal educational processes. Approximately two hundred (200) themes were gleaned from the readings and subsequently submitted to a panel of national and regional experts for assessment; i.e., submitted to planners, researchers, writers, and business leaders. (See Volume II, Appendix 6, for more about this process.) These futurist propositions to be assessed by the panel were derived, for the most part, from the writings of Daniel Bell, James Coleman, Willis Harman, Herman Kahn, Bruce Biggs, Michael Marien, Donald Michael, John Platt, Stuart Sandow, Harold Shane, and Alvin Toffler. (A selected bibliography appears in Section 6.)

It became evident very early in the research effort that futurism is a discipline in its own right as is history, mathematics, or science. It became further evident that futurism has an emerging research methodology of its own and that the more prominent futuristic research tools included: Delphi; Cross Impact Matrix and Cross-Purpose Matrix; Value Shift Analysis; Future History Analysis and Review; Field Anomaly Relaxation; Program Evaluation and Review Technique; Scenario; Future History; Study of the Sufficient Future; Logic of Suspended Disbelief; and Ariole. (See Section 6 for sources of additional information.)

Delphi Research Methodology -- The Delphi method constituted an important segment of SWEP research because it appeared to have utility for educational planners in forecasting, in consensus generation, in identification of divergent opinions, and in selection of probable futures in terms of time, quantity, and events. Numerous styles, variations, and divergent rationales for Delphi modes of inquiry exist.

cesses. Approximately two hundred (200) themes were gleaned from the readings and subsequently submitted to a panel of national and regional experts for assessment; i.e., submitted to planners, researchers, writers, and business leaders. (See Volume II, Appendix 6, for more about this process.) These futurist propositions to be assessed by the panel were derived, for the most part, from the writings of Daniel Bell, James Coleman, Willis Harman, Herman Kahn, Bruce Biggs, Michael Marien, Donald Michael, John Platt, Stuart Sandow, Harold Shane, and Alvin Toffler. (A selected bibliography appears in Section 6.)

It became evident very early in the research effort that futurism is a discipline in its own right as is history, mathematics, or science. It became further evident that futurism has an emerging research methodology of its own and that the more prominent futuristic research tools included: Delphi; Cross Impact Matrix and Cross-Purpose Matrix; Value Shift Analysis; Future History Analysis and Review; Field Anomaly Relaxation; Program Evaluation and Review Technique; Scenario; Future History; Study of the Sufficient Future; Logic of Suspended Disbelief; and Ariole. (See Section 6 for sources of additional information.)

Delphi Research Methodology -- The Delphi method constituted an important segment of SWEP research because it appeared to have utility for educational planners in forecasting, in consensus generation, in identification of divergent opinions, and in selection of probable futures in terms of time, quantity, and events. Numerous styles, variations, and divergent rationales for Delphi modes of inquiry exist. Murray Turoff (1970) claims it is a "systematic solicitation and collation of informed judgments on a particular topic". O. Helmer and N. Rescher (1959) state that Delphi "substitutes for face-to-face group activity". It is "...a carefully designed program of sequential individual interrogations (best conducted by questionnaires) interspersed with information and opinion feedback...."

According to Lindquist (1973), Delphi is a widely used technique for developing consensus among experts concerning the future. Enzer (1970) states that the Delphi technique can be viewed as a series of individual conferences conducted in writing with the following distinguishing characteristics: 1) individual contributions are requested from each participant simultaneously at each step, without knowledge of the inputs of others for that step; and (2) anonymity of respondents is maintained throughout the iterations. (The selected bibliography for the Delphi appears in Section 6.)

According to Rasp (1972), a typical Delphi study generally uses a series of four questionnaires (Q-1, Q-2, Q-3, Q-4). The first questionnaire (Q-1) solicits input from the sample. Ideally, samples include experts or authorities in the topic under investigation. Q-2 consists of response items derived from Q-1 input. Q-2 has often been described as the most difficult instrument to construct (Rasp), because of the inherent difficulty in incorporating Q-1 input into a typology from which Q-2 can be developed without altering or diluting the original content. Items on Q-2 are scored by the respondents in terms of such variables as priority, time, probability, quantity, impact, and the like.

On Q-3, respondents are instructed to reassess their opinions in light of their previous responses, group consensus, and the minority report. It is recommended that both consensus and minority information be communicated in technical reports resulting from the Delphi process. The Delphi method is considered to be a planning process, and divergent points of view are often as enlightening as the majority opinions themselves. The SWEP Delphi model varied somewhat from the model presented here, and this is discussed in Section 2.3 -- The Delphi Studies.

Educational Goals Research Studies -- The primary purpose of the

from each participant simultaneously at each step, without knowledge of the inputs of others for that step; and (2) anonymity of respondents is maintained throughout the iterations. (The selected bibliography for the Delphi appears in Section 6.)

According to Rasp (1972), a typical Delphi study generally uses a series of four questionnaires (Q-1, Q-2, Q-3, Q-4). The first questionnaire (Q-1) solicits input from the sample. Ideally, samples include experts or authorities in the topic under investigation. Q-2 consists of response items derived from Q-1 input. Q-2 has often been described as the most difficult instrument to construct (Rasp), because of the inherent difficulty in incorporating Q-1 input into a typology from which Q-2 can be developed without altering or diluting the original content. Items on Q-2 are scored by the respondents in terms of such variables as priority, time, probability, quantity, impact, and the like.

On Q-3, respondents are instructed to reassess their opinions in light of their previous responses, group consensus, and the minority report. It is recommended that both consensus and minority information be communicated in technical reports resulting from the Delphi process. The Delphi method is considered to be a planning process, and divergent points of view are often as enlightening as the majority opinions themselves. The SWEP Delphi model varied somewhat from the model presented here, and this is discussed in Section 2.3 -- The Delphi Studies.

Educational Goals Research Studies -- The primary purpose of the SWEP Delphi studies was to identify educational goals both in terms of desired student outcomes and desired educational processes for the decade of the 1980's. These goals, in turn, were to be used for curricula development, facilities design, and professional staff considerations; i.e., training, selection, and organization.

A review of literature in this domain uncovered several pertinent educational goals studies since 1970. These studies provided the genesis of the SWEP Educational Goal Bank which became, after considerable Staff refinement, the response items on the initial Delphi questionnaire (Q-1). Goals derived from the following sources were used in this endeavor: General Learning Corporation, Cottage Grove School District (Cottage Grove, Oregon), Washington State Department of Education, Phi Delta Kappa, Partners in Career Education (Dallas and Fort Worth Independent School Districts), Sarasota County Schools (Sarasota, Florida), National Assessment of Educational Progress and Texas Education Agency. A selected bibliography of educational goals studies appears in Appendix 6.

2.2 The Futures Survey (Q-0)

The purpose of the Futures Survey was to probe the question "What societal propositions can be identified for the world, the United States, and the Dallas-Fort Worth Metroplex for the decade of the 1980's?" To accomplish this, an instrument was developed and administered to recognized experts and/or authorities in futurism. The sample included approximately three hundred (300) national and local planners, researchers, and writers; all of whom were considered to be forward thinkers. This panel of futurists was asked to evaluate a set of societal propositions for the 1980's in terms of: 1) their likelihood of occurrence, and 2) their potential impact for education. (See Volume II, Appendix 6). These futuristic propositions were derived first from the literature in the form of trends or themes, were then developed into propositions, and were ultimately presented to the Futurist Panel as questionnaire items.

There were two scales for each questionnaire item: one scale

endeavor: General Learning Corporation, Cottage Grove School District (Cottage Grove, Oregon), Washington State Department of Education, Phi Delta Kappa, Partners in Career Education (Dallas and Fort Worth Independent School Districts), Sarasota County Schools (Sarasota, Florida), National Assessment of Educational Progress and Texas Education Agency. A selected bibliography of educational goals studies appears in Appendix 6.

2.2 The Futures Survey (Q-0)

The purpose of the Futures Survey was to probe the question "What societal propositions can be identified for the world, the United States, and the Dallas-Fort Worth Metroplex for the decade of the 1980's?" To accomplish this, an instrument was developed and administered to recognized experts and/or authorities in futurism. The sample included approximately three hundred (300) national and local planners, researchers, and writers; all of whom were considered to be forward thinkers. This panel of futurists was asked to evaluate a set of societal propositions for the 1980's in terms of: 1) their likelihood of occurrence, and 2) their potential impact for education. (See Volume II, Appendix 6). These futuristic propositions were derived first from the literature in the form of trends or themes, were then developed into propositions, and were ultimately presented to the Futurist Panel as questionnaire items.

There were two scales for each questionnaire item: one scale rated the likelihood of occurrence, and the other rated the potential educational impact. Both scales were five-point Likert-type scales. Of particular interest were the "5-5" items; i.e., those items perceived as most likely to occur, and from which occurrence considerable educational impact would result. Respondents were also encouraged to identify areas or facets of education that would be heavily affected.

Two 92-item parallel questionnaires were developed and subsequently administered to the 290 individuals comprising the National sample. (See Volume II, for samples of the questionnaire forms and for a detailed report of the Futures Survey). One hundred fifty-one (52%) responded. The following sub-sample participatory units were also identified and analyzed: Metroplex Insiders, Metroplex Outsiders, Educators, and Local Leaders.

Prime derivatives of The Futures Survey (Q-O) were as follows:

- Identification of five categories for societal propositions of the 1980's and their:
  - -- high likelihood of occurrence,
  - -- low likelihood of occurrence,
  - -- high educational impact,
  - -- low educational impact, and
  - -- high likelihood of occurrence and high educational impact (bivariate emphasis)
- The educational areas and/or facets most likely to be strongly affected in the future (1980's and beyond).

Sampling -- For the Futures Survey, a concerted effort was made to capture the thoughts of a select Metroplex group of reputed "forward thinkers" from a variety of occupational and special interest groups. In every case, these were persons considered by their colleagues to be several cuts above the ordinary. This was an attempt to get the best possible cross-section of thinking relative to a rather sophisticated subject.

Included in the sample were leaders from school districts across the Nation (including the Dallas, the Fort Worth, and other Metroplex school districts); National, local and regional planners in the public and private sectors; top echelon executives from government, education, business, and industry; and academicians from universities. Care was taken to include each of the three major

analyzed: Metroplex Insiders, Metroplex Outsiders, Educators, and Local Leaders.

Prime derivatives of The Futures Survey (Q-0) were as follows:

- Identification of five categories for societal propositions of the 1980's and their:
  - -- high likelihood of occurrence,
  - -- low likelihood of occurrence,
  - -- high educational impact,
  - -- low educational impact, and
  - -- high likelihood of occurrence and high educational impact (bivariate emphasis)
- The educational areas and/or facets most likely to be strongly affected in the future (1980's and beyond).

Sampling -- For the Futures Survey, a concerted effort was made to capture the thoughts of a select Metroplex group of reputed "forward thinkers" from a variety of occupational and special interest groups. In every case, these were persons considered by their colleagues to be several cuts above the ordinary. This was an attempt to get the best possible cross-section of thinking relative to a rather sophisticated subject.

Included in the sample were leaders from school districts across the Nation (including the Dallas, the Fort Worth, and other Metroplex school districts); National, local and regional planners in the public and private sectors; top echelon executives from government, education, business, and industry; and academicians from universities. Care was taken to include each of the three major racial ethnic groups of the Metroplex (Anglo, Black, and Mexican-American), both sexes, and a range of ages.

2.3 The Delphi Studies

The methodology employed consisted of a two-iteration Delphi study. Each iteration is respectively referred to herein as The First Delphi and The Second Delphi.

The SWEP Delphi research differed from the conventional model described earlier. The primary difference arose from these factors: (1) the purpose of the SWEP Delphi was to generate both consensus and divergent opinion regarding a set of future-oriented educational goals rather than to forecast possible, probable, or preferable phenomena; (2) SWEP's Q-1 was only partially open-ended, since most of the Delphi response items were generated from the literature rather than by the usual procedure of having the items generated by the Delphi Panel itself; (3) the SWEP Q-1 was accompanied by a packet of brief scenarios depicting a likely society for the decade of the 1980's in terms of manpower needs, population, life style, technology, careers, and education; and (4) the respondents were instructed to respond to the questionnaire within the framework of these future-focused societal images. Thus only two iterations were required.

2.3.1 The First Delphi (Q-1)

Delphi questionnaire number one (Q-1) consisted of 105 discrete program goal statements arrayed in the general categories of: basic skills, citizenship, ethics, aesthetics, careers, health and recreation, and life management; plus 29 process goal statements. In addition, a section was provided wherein panelists could generate new goals as they perceived a need. Each goal was matched with one or more of the "high likelihood-high impact" propositions for the future -- the material from which the scenarios were developed.* These first-iteration goal statements -- originally numbering in excess of 400 -- were extracted from the related literature, synthesized, revised

probable, or preferable phenomena; (2) SWEP's Q-1 was only partially open-ended, since most of the Delphi response items were generated from the literature rather than by the usual procedure of having the items generated by the Delphi Panel itself; (3) the SWEP Q-1 was accompanied by a packet of brief scenarios depicting a likely society for the decade of the 1980's in terms of manpower needs, population, life style, technology, careers, and education; and (4) the respondents were instructed to respond to the questionnaire within the framework of these future-focused societal images. Thus only two iterations were required.

2.3.1 The First Delphi (Q-1)

Delphi questionnaire number one (Q-1) consisted of 105 discrete program goal statements arrayed in the general categories of: basic skills, citizenship, ethics, aesthetics, careers, health and recreation, and life management; plus 29 process goal statements. In addition, a section was provided wherein panelists could generate new goals as they perceived a need. Each goal was matched with one or more of the "high likelihood-high impact" propositions for the future -- the material from which the scenarios were developed.* These first-iteration goal statements -- originally numbering in excess of 400 -- were extracted from the related literature, synthesized, revised, polished, and finally arrayed in the above-mentioned general categories.

* See Volume II for the scenarios.

A double response scale was formulated so that the Panel could furnish two kinds of information for each goal statement or questionnaire item. The first scale was designed to provide priority information regarding the educational programs. These data were used to establish the "menu" or continuum of educational experiences to be offered in the school of the future (See Sections 2.3.3 and 2.3.4). The second scale was designed to facilitate the identification of the core experiences to be offered in this school. These core experiences were the most likely experiences that all students* should have before completion of their program of studies. (See Sections 2.3.3 and 2.3.4). A five-point Likert-type response scale was used to assign the relative priority dimension, and a dichotomous-type (yes-no) scale was used to assign the core dimension.

2.3.2 The Second Delphi (Q-2)

For Delphi questionnaire number two (Q-2) the general format from Q-1 remained unaltered, except that as a result of the Panel's input on Q-1 the total number of program goals was increased from 105 to 117, and the process goals from 29 to 45. In addition, Q-2 included a minority report section accompanied by a computer printout displaying both group results and individual results from Q-1. Panelists who deviated from the group consensus, and who refused to reconsider their responses, were asked to furnish a reason for their deviant opinions.**

2.3.3 Sample

The Delphi participants represented a cross section of the Metroplex community, with the special qualification of interest in the problems of education. In all, over 900 people were invited to participate in the SWEP Delphi. Of the original number, 375 (42%) completed Q-1, and 225 of those (60%) went on to finish Q-2 and the entire Delphi

to be offered in this school. These core experiences were the most likely experiences that all students* should have before completion of their program of studies. (See Sections 2.3.3 and 2.3.4). A five-point Likert-type response scale was used to assign the relative priority dimension, and a dichotomous-type (yes-no) scale was used to assign the core dimension.

2.3.2 The Second Delphi (Q-2)

For Delphi questionnaire number two (Q-2) the general format from Q-1 remained unaltered, except that as a result of the Panel's input on Q-1 the total number of program goals was increased from 105 to 117, and the process goals from 29 to 45. In addition, Q-2 included a minority report section accompanied by a computer printout displaying both group results and individual results from Q-1. Panelists who deviated from the group consensus, and who refused to reconsider their responses, were asked to furnish a reason for their deviant opinions.**

2.3.3 Sample

The Delphi participants represented a cross section of the Metroplex community, with the special qualification of interest in the problems of education. In all, over 900 people were invited to participate in the SWEP Delphi. Of the original number, 375 (42%) completed Q-1, and 225 of those (60%) went on to finish Q-2 and the entire Delphi process.

---

* The term "all students" needs qualification. A special set of goals would be considered for the mentally retarded, emotionally disturbed, and other special cases.

** To illustrate, if the group mode for a given item was equal to 5 and an individual's response was 3, there would be a deviation of 2 units (5-3=2). In all such instances, if the deviation was more than 1 unit, the deviant party was instructed to change scores to conform with that of the group or to give a reason for not doing so (minority report).

2.3.4 Data Analysis Procedures

The following analyses were made, in terms of program and process goals:

Educational program goals:

- o Highest priority goals
- o Lowest priority goals
- o Highest core goals (experiences required of all)
- o Lowest core goals (experiences not required of all)
- o Highest priority-highest core goals (two-dimensional correlation between the priority and core rankings of identical goals)
- o Response shifts (the change in scores from Q-1 to Q-2 in the priority dimension).

Educational process goals:

- o Highest priority goals
- o Lowest priority goals
- o Response shifts (changes in scores from Q-1 to Q-2 on the priority rankings).

Also, an item-by-item minority report was developed which included each respondent's rationale for not agreeing with the consensus of the group (See Volume II, Appendix 8). The data were also analyzed by subgroups such as age, sex, ethnicity, occupation, and residence (See Volume II, Appendix 8).

TABLE I

DOUBLE - AXIS MATRIX ANALYSIS

OF

SECONDARY EDUCATIONAL GOALS FOR THE 1980's

TABLE NO. 1
Secondary Educational Goals for the 1980's

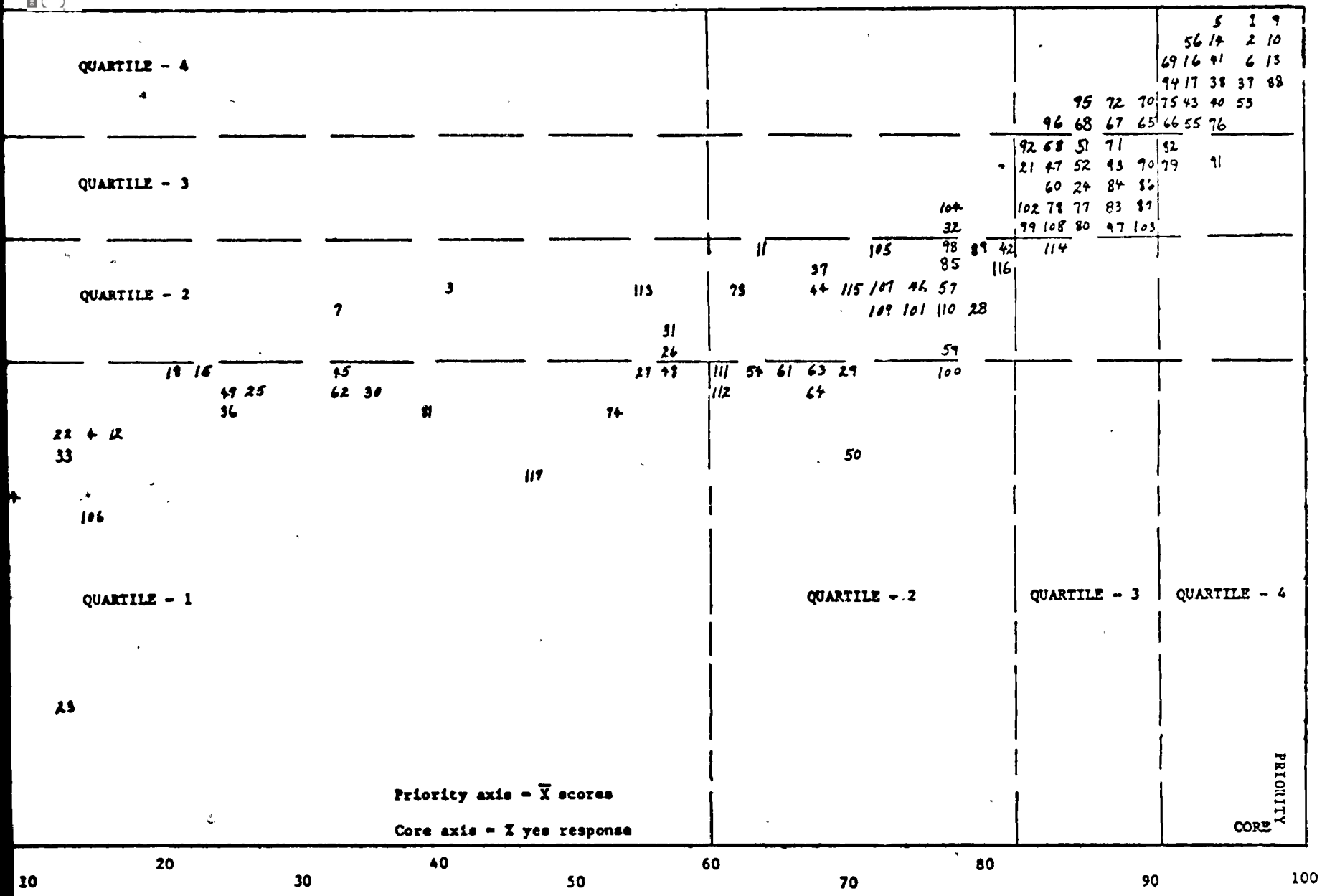
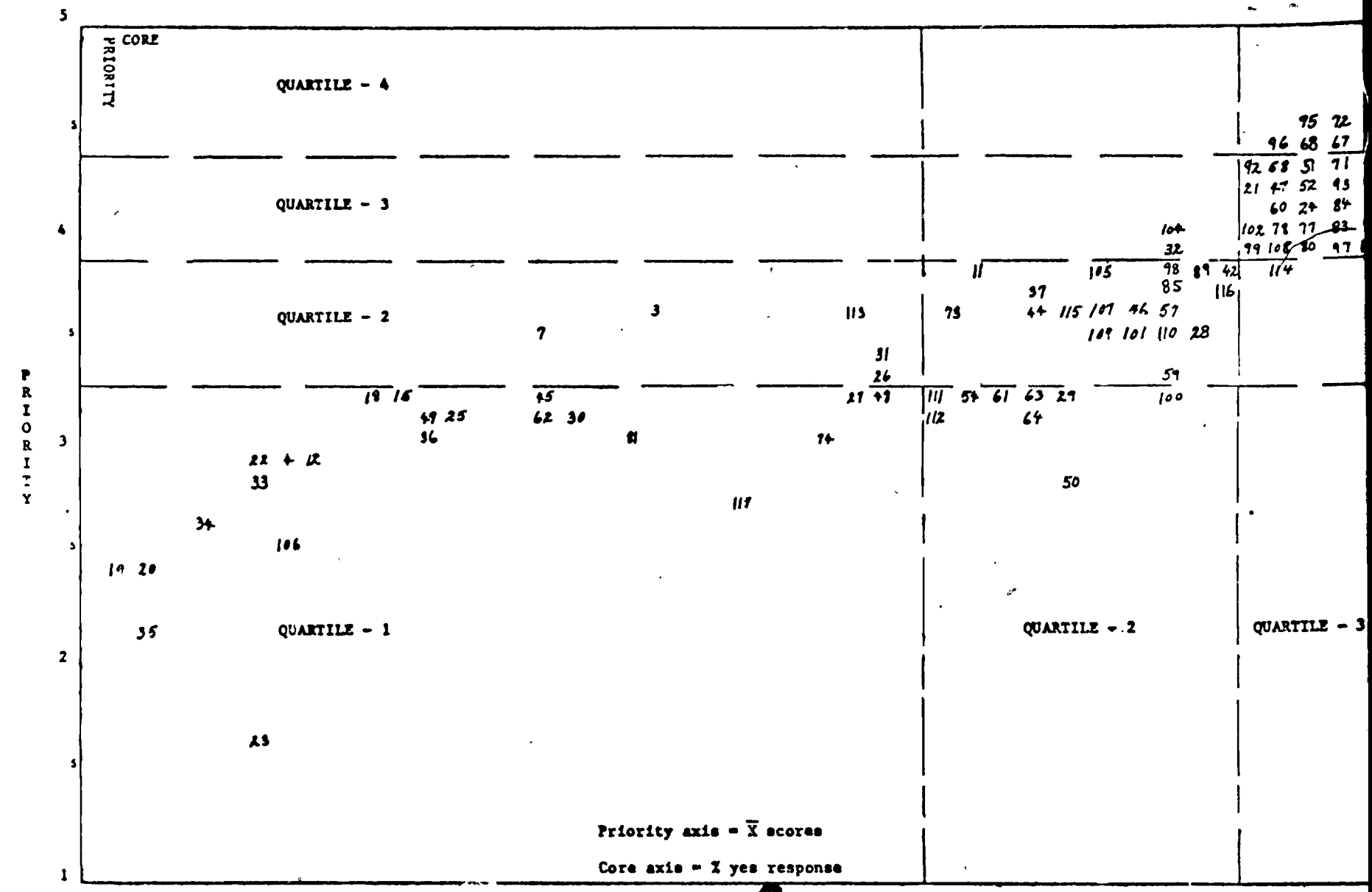


TABLE NO. 1
Secondary Educational Goals for the 1980's



Double-Axis Matrix Analysis -- Analyses of program goals were facilitated by the double-axis matrix presented in Table 1, with priority data arrayed on the vertical axis and core data on the horizontal axis. The priority data are represented in terms of mean scores, with a possible range from a low of 1.0 to a high of 5.0. The core data, however, are reported in terms of the per cent of "yes" responses -- "Yes" indicating a requirement for all students. The numbers appearing on the matrix proper, i.e., 1,2,3....117, correspond to the questionnaire item numbers; hence, the respondents' opinions relative to the priority and core issues are graphically illustrated by the relative position of the item numbers on the matrix.

To illustrate the functioning aspects of the matrix, look at Table 1. Item number 117 received a mean priority score of 2.7 and a core score of 48% "yes". The proper matrix position for this item, then, is at the intersecting point of the two corresponding perpendicular axes. This point for item number 117 may be found by proceeding up the priority axis (left vertical) to the area of 2.7, and across the core axis (horizontal) to 48% "yes". The number 117 should appear precisely at this intersection.

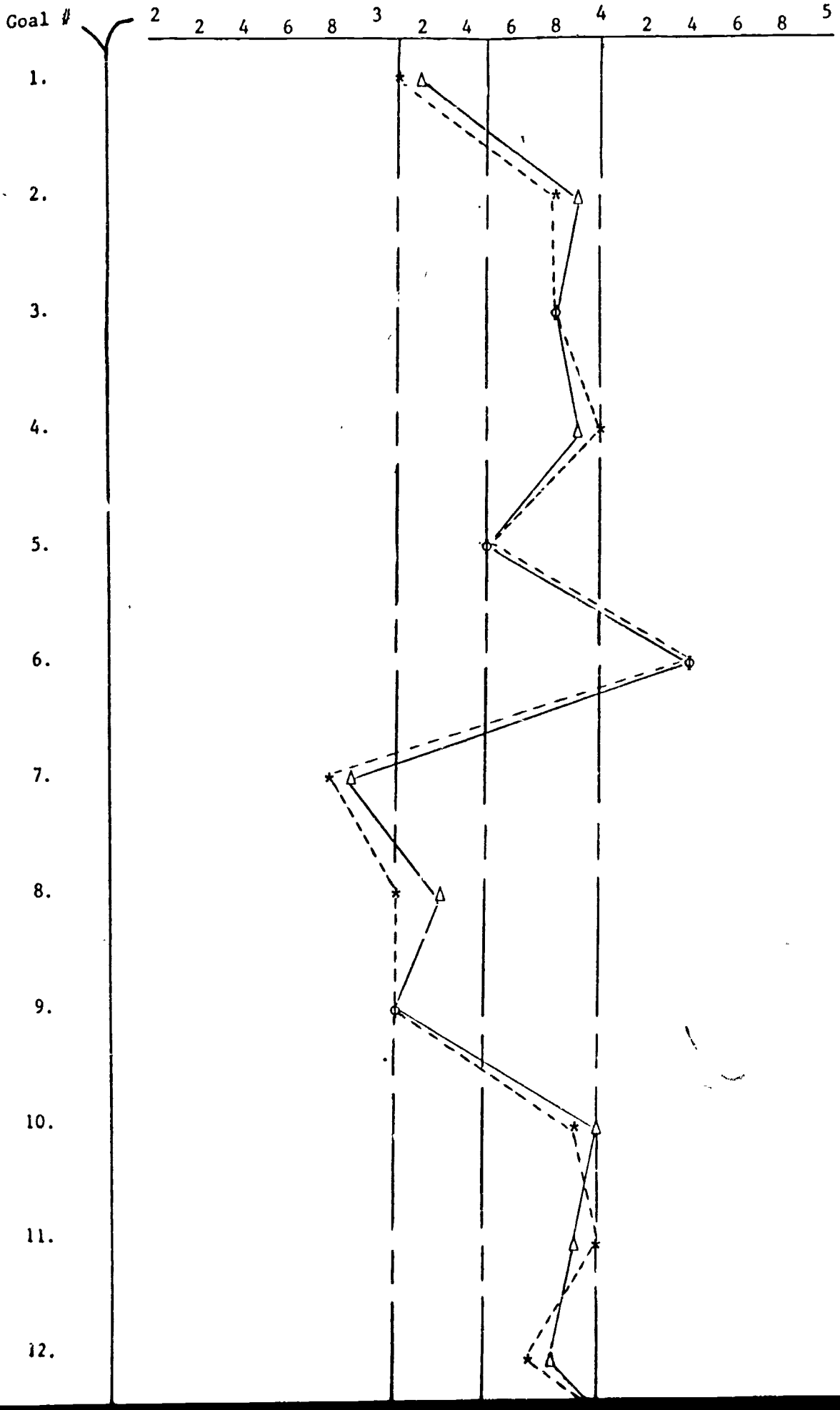
The interquartile ranges for the two distributions (priority and core) were calculated and used as the criteria for making decisions. Goals falling in the 4th quartile (above the 75th percentile) in the priority and core distributions were labeled "highest priority" and "required for all students", respectively. Conversely, goals in the first quartile (at, or below the 25th percentile) were considered "lowest priority" and "not required of all students".

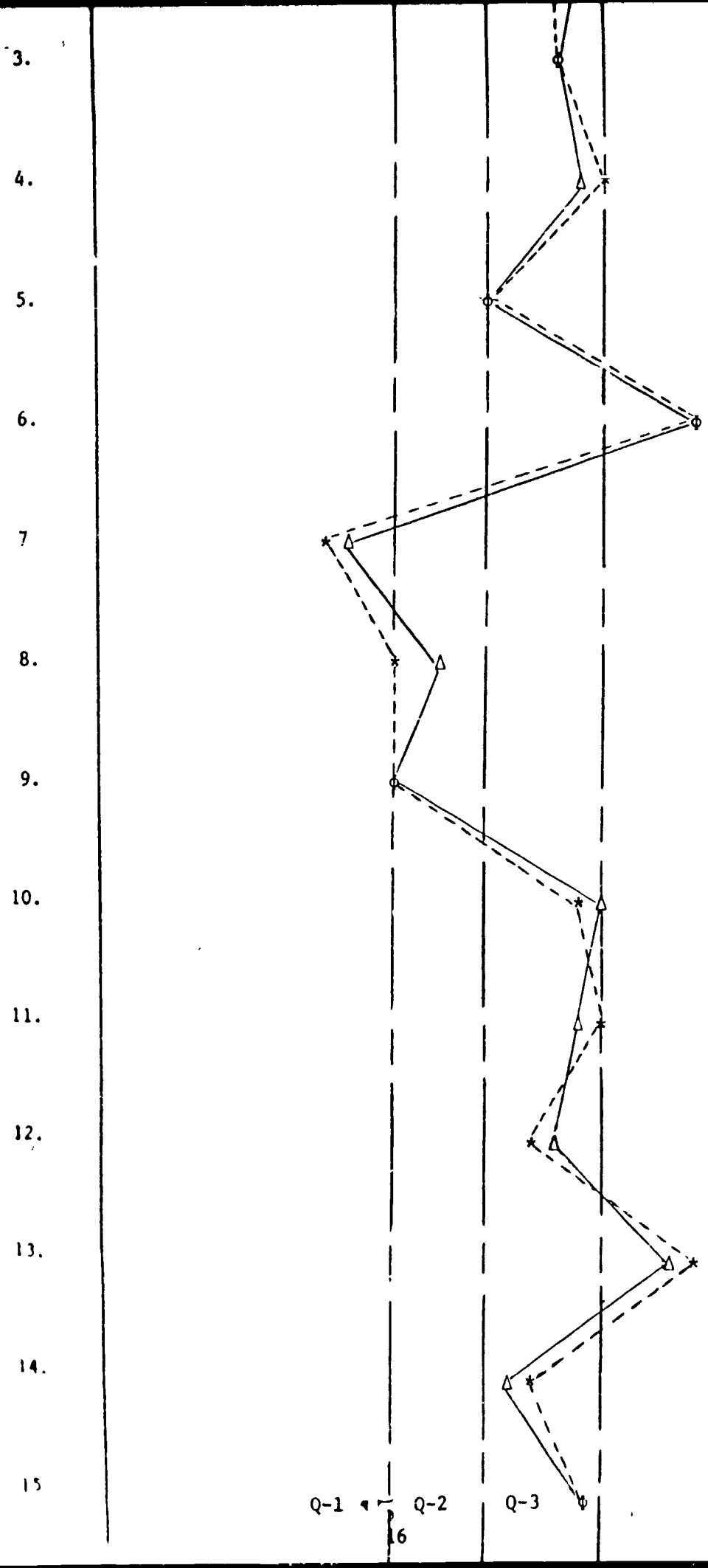
Response Shifts == Response shifts were derived for the priority dimension only. Shifts were determined from the frequency distributions of Q-1 and Q-2 data. These distributions allowed the data to be evaluated in terms of both the magnitude and direction of the shifts about the modal positions for each item, thus unmasking any subtleties within the distributions.

TABLE 2

RESPONSE SHIFTS

TABLE NO. 2
Secondary Educational Goals of the 1980's
Mean Scores




3.
4.
5.
6.
7
8.
9.
10.
11.
12.
13.
14.
15
Q-1
Q-2
Q-3

Analyses of the 45 educational process goals proceeded along one dimension (priority) rather than two, as with the program goals. The issue here was to ascertain constituents' priorities relative to operational and managerial aspects of schooling. Of particular concern were the highest and lowest priority items, and any significant shifts in responses to these. Mean, mode, standard deviation, and percentile scores were calculated for each of the process goals, and the interquartile range was invoked as the criterion for decisions. Goals in the first quartile were considered "lowest priority" and Table 2 provides a sample of Q-1 to Q-2 response shifts as reflected by mean scores and the interquartile range of Q-2. The analyses revealed no significant response shifts in the mean scores. The reader is referred to Volume II, Appendix 8, for the complete data analysis.

Minority Report--The minority report (the summary of opposing opinions for each item) was formulated from the divergent viewpoints provided by the Panel on Q-2. As mentioned earlier, individuals whose scores differed from the mode of the group on identical items by more than one unit were instructed to reevaluate their scores to within one unit of the group, or to provide a reason for not doing so. These write-in comments provided the bases for the SWEP minority report.

For a precise and detailed account of the Delphi data gathering and analyses, including the minority report, see Volume II, Appendices 6 and 8*. These appendices are the formal SWEP Product Evaluation Reports by Senior Evaluator Robert J. Burns, DISD Department of Research and Evaluation, which describe at length the Project research methodology, instrument development, data processing, and evaluation. The pertinent research material presented in the foregoing sections of this Report was essentially lifted from these appendices.

2.3.5 Delphi Panel Rankings of Educational Goals

This section indicates the Delphi Panel's responses to the goals statements both in terms of their priority dimension

were calculated for each of the process goals, and the interquartile range was invoked as the criterion for decisions. Goals in the first quartile were considered "lowest priority" and Table 2 provides a sample of Q-1 to Q-2 response shifts as reflected by mean scores and the interquartile range of Q-2. The analyses revealed no significant response shifts in the mean scores. The reader is referred to Volume II, Appendix 8, for the complete data analysis.

Minority Report--The minority report (the summary of opposing opinions for each item) was formulated from the divergent viewpoints provided by the Panel on Q-2. As mentioned earlier, individuals whose scores differed from the mode of the group on identical items by more than one unit were instructed to reevaluate their scores to within one unit of the group, or to provide a reason for not doing so. These write-in comments provided the bases for the SWEP minority report.

For a precise and detailed account of the Delphi data gathering and analyses, including the minority report, see Volume II, Appendices 6 and 8*. These appendices are the formal SWEP Product Evaluation Reports by Senior Evaluator Robert J. Burns, DISD Department of Research and Evaluation, which describe at length the Project research methodology, instrument development, data processing, and evaluation. The pertinent research material presented in the foregoing sections of this Report was essentially lifted from these appendices.

2.3.5 Delphi Panel Rankings of Educational Goals

This section indicates the Delphi Panel's responses to the goals statements both in terms of their priority dimension and their core dimension. Obvious contradictions existed between certain of the high priority goals ranked by the Panel. Such contradictions provided a partial basis for

*The reader is reminded that Vol. II is a limited edition, consists of detailed reports, and can be purchased at cost from the Project Director.

the SWEP Staff decision to base its recommendations and prognostications of future schooling upon a considered concensus of Futures Survey data, Delphi Panel data, and the literature search. In other words, the SWEP-envisioned school of the future was inferred from more than just the data from the Futures Survey or the Delphi Study research.

For the reader's convenience, the goals statements have been divided into two designated groups--process goals (how the future school should operate), and content goals (what the future school should teach):

Process Goals--Highest priority process goals were as follows:

Operate programs year round.

- Use a variety of teaching modes (methods).

Require all students to have skills that make them productive, taxpaying citizens before completing their schooling.

- Have programs geared to benefit the potential drop-out student.
- Provide special programs for gifted students.
- Provide special programs for physically, emotionally, and mentally handicapped students
- Provide academic and career counseling, free of sex role stereotypes.

Provide staff and instructional practices that act positively to minimize sex and race handicaps.

- Report student progress in terms of achievement on specific objectives

Change the process of instruction from disseminating knowledge to directing learning activities

Place more emphasis on staff development for the purpose of maintaining high staff proficiency in the use of all

the data from the Futures Survey of the Delphi Study research.

For the reader's convenience, the goals statements have been divided into two designated groups--process goals (how the future school should operate), and content goals (what the future school should teach):

Process Goals--Highest priority process goals were as follows:

Operate programs year round.

. Use a variety of teaching modes (methods).

Require all students to have skills that make them productive, taxpaying citizens before completing their schooling.

. Have programs geared to benefit the potential drop-out student.

. Provide special programs for gifted sutdents.

. Provide special programs for physically, emotionally, and mentally handicapped students

. Provide academic and career counseling, free of sex role stereotypes.

Provide staff and instructional practices that act positively to minimize sex and race handicaps.

. Report student progress in terms of achievement on specific objectives

Change the process of instruction from disseminating knowledge to directing learning activities

Place more emphasis on staff development for the purpose of maintaining high staff proficiency in the use of all available resources

The lowest priority process goals were:

. Provide opportunity for students to enter and leave programs several times during the school year.

. Permit students to come and go during the school day (open campus).

- Develop student-owned and profit-motivated enterprises that would provide actual services and products.
- Eliminate required attendance when students demonstrate competence in a basic core of general education skills.
- Require students to view certain television programs at home as an integral part of the instructional program.
- Separate students at the ninth grade level into two groups--one group to receive technical-vocational training and one group to be prepared for academic study.
- Allow activities which show nationalistic emphasis toward nations other than the United States.
- Grant credit for courses in religion completed by students in a church or synagogue.
- Allow students the option of receiving pass/fail progress reports.
- Develop methods for student evaluation of staff performance.
- Develop a system for involving many groups--such as school administrators, community leaders, teachers, and students--in administering the local public schools.
- Offer multilingual programs in all subject areas at all grade levels.
- Assign the best teachers to schools with lowest achievement records and provide them with special incentives.
- Provide pre-professional training in sports through highly competitive athletic programs.

Content Goals--Content goals were first divided into these categories: Health and Recreation; Life Management; Citizenship; Ethics; Aesthetics; Careers; and Basic Skills. For the reader's convenience, each content area is arranged as follows: First, those goals which

home as an integral part of the instructional program.

- Separate students at the ninth grade level into two groups--one group to receive technical-vocational training and one group to be prepared for academic study.
- Allow activities which show nationalistic emphasis toward nations other than the United States.
- Grant credit for courses in religion completed by students in a church or synagogue.
- Allow students the option of receiving pass/fail progress reports.
- Develop methods for student evaluation of staff performance.
- Develop a system for involving many groups--such as school administrators, community leaders, teachers, and students--in administering the local public schools.
- Offer multilingual programs in all subject areas at all grade levels.
- Assign the best teachers to schools with lowest achievement records and provide them with special incentives.
- Provide pre-professional training in sports through highly competitive athletic programs.

Content Goals--Content goals were first divided into these categories: Health and Recreation; Life Management; Citizenship; Ethics; Aesthetics; Careers; and Basic Skills. For the reader's convenience, each content area is arranged as follows: First, those goals which were ranked BOTH highest in the priority dimension and highest in the core dimension (bivariate), and secondly, those goals which were ranked BOTH lowest priority and lowest core, respectively. For goals ranked individually in the highest priority only or highest core only or in the lowest priority only or lowest core only, the

reader is referred to Volume II, Appendix 8.

HIGHEST PRIORITY AND HIGHEST CORE (BIVARIATE)

Basic Skills

Students should have developed their reading skills sufficiently to read with understanding:

- minimum transactions required for daily living, such as reading a telephone directory and road signs.
- printed material on the level of a daily newspaper.

Students should have developed their writing skills to a level necessary for:

- minimum daily living transactions, such as completing job applications.
- casual communication with friends and associates.

Students should have developed their speaking skills to a level necessary for:

- minimum daily living transactions, such as understanding simple directions and carrying on social conversations.
- understanding facts and/or simple ideas presented orally, such as being able to follow a radio news broadcast.

Students should have developed their mathematical skills to a level necessary in applying basic concepts needed for:

- minimum business transactions in daily living, such as making change, totalling a bill, and computing sales tax.
- Computing salary and salary deductions, and developing a household budget.

Students should:

- possess a commitment to the continuous improvement of life in the United States.
- understand the rights, privileges, and responsibilities of

. minimum transactions required for daily living, such as reading a telephone directory and road signs.

. printed material on the level of a daily newspaper.

Students should have developed their writing skills to a level necessary for:

. minimum daily living transactions, such as completing job applications.

. casual communication with friends and associates.

Students should have developed their speaking skills to a level necessary for:

. minimum daily living transactions, such as understanding simple directions and carrying on social conversations.

. understanding facts and/or simple ideas presented orally, such as being able to follow a radio news broadcast.

Students should have developed their mathematical skills to a level necessary in applying basic concepts needed for:

. minimum business transactions in daily living, such as making change, totalling a bill, and computing sales tax.

. Computing salary and salary deductions, and developing a household budget.

Students should:

. possess a commitment to the continuous improvement of life in the United States.

. understand the rights, privileges, and responsibilities of United States citizenship.

. have learned the basic organizational structure of the local, state, and Federal governments.

. have respect for the law and feel responsible for obeying and maintaining its principles.

(Basic Skills -- continued)

. understand and appreciate people of a different culture, race, sex, age, or life style.

Ethics

Students should:

. have developed positive moral and ethical values.

. understand the importance of these moral and ethical values in their relationships with others.

. respect the beliefs and values of other people.

Careers

Students should:

. be able to assess their personal abilities realistically in order to make viable career decisions.

. have developed a positive attitude toward work.

Health and Recreation

Students should:

. have developed a positive image of themselves.

. have developed proper knowledge, skills, and values relating to physical and mental health.

. have learned the proper use of drugs.

Life Management

Students should:

. assume increased responsibility for their own development, obligations, and actions.

LOWEST PRIORITY AND LOWEST CORE
(BIVARIATE)
Basic Skills

Students should have developed their reading skills to read with understanding:

Students should:

. have developed positive moral and ethical values.

. understand the importance of these moral and ethical values in their relationships with others.

. respect the beliefs and values of other people.

Careers

Students should:

. be able to assess their personal abilities realistically in order to make viable career decisions.

. have developed a positive attitude toward work.

Health and Recreation

Students should:

. have developed a positive image of themselves.

. have developed proper knowledge, skills, and values relating to physical and mental health.

. have learned the proper use of drugs.

Life Management

Students should:

. assume increased responsibility for their own development, obligations, and actions.

LOWEST PRIORITY AND LOWEST CORE
(BIVARIATE)
Basic Skills

Students should have developed their reading skills to read with understanding:

. printed material on the level of logic and philosophy.

Students should have developed their writing skills to a level necessary for:

. expressing creative and abstract ideas to professional audiences.

(Bivariate Low Emphasis -- continued)

Students should have developed their speaking skills to a level necessary for:

. creative expression and communication of abstract ideas and/or thoughts.

Students should have developed their listening skills to a level necessary for:

. understanding abstract ideas and concepts presented orally.

Students should have developed their mathematical skills to a level necessary in applying basic concepts needed for:

. handling such middle management tasks as puchasing, inventory, or preparing a payroll.

. entering engineering studies.

. entering advanced college mathematics study.

Students should:

. possess reading and writing skills in at least one foreign language.

. be able to converse in at least one foreign language.

. understand the basic principles of physical sciences, such as those taught in physics and chemistry.

. understand the fundamental principles of social sciences, such as those taught in psychology and sociology.

. be able to apply the basic principles of the scientific method.

. have learned the skills required for accessing information from a computer.

. have learned to assemble data in a form acceptable for computer usage.

. be able to write a computer program using a widely acceptable language such as BASIC or FORTRAN.

. be able to use an electronic calculator.

and/or thoughts.

Students should have developed their listening skills to a level necessary for:

. understanding abstract ideas and concepts presented orally.

Students should have developed their mathematical skills to a level necessary in applying basic concepts needed for:

. handling such middle management tasks as puchasing, inventory, or preparing a payroll.

. entering engineering studies.

. entering advanced college mathematics study.

Students should:

. possess reading and writing skills in at least one foreign language.

. be able to converse in at least one foreign language.

. understand the basic principles of physical sciences, such as those taught in physics and chemistry.

. understand the fundamental principles of social sciences, such as those taught in psychology and sociology.

. be able to apply the basic principles of the scientific method.

. have learned the skills required for accessing information from a computer.

. have learned to assemble data in a form acceptable for computer usage.

. be able to write a computer program using a widely acceptable language such as BASIC or FORTRAN.

. be able to use an electronic calculator.

Citizenship

Students should:

. understand the major political and economic systems of the world.

. have developed an understanding of world governments and their

(Bivariate Low Emphasis -- continued)

relationships with one another.

. understand the influence of multinational corporations upon nations and individuals.

Aesthetics

Students should:

. have developed their power of creativity and imagination through participation in the arts.

Careers

Students should:

. understand the history of the labor union movement and the contributions and problems of labor unions.

Health and Recreation

Students should:

. have participated in a variety of team sports.

Write-In Goals

Students should:

. be able to converse in Spanish.

. understand how to use one's vote, the party system, and the influence of bloc or coalition voting practices.

2.4 Derivatives of the Research

Derivatives of the research have been synthesized and categorized for the convenience of the reader as follows: student population, manpower needs, programs, staff, and facilities. While actual application of these data to the planned educational park was obviated by decisions external to the Project Staff, the data should be of value to future Metroplex planners and to urban planners across the Nation.

2.4.1 Student Population

Because Project contraints required certain ethnic and socioeconomic ratios for the pupil population (enrollment) of

Students should:

. have developed their power of creativity and imagination through participation in the arts.

Careers

Students should:

. understand the history of the labor union movement and the contributions and problems of labor unions.

Health and Recreation

Students should:

. have participated in a variety of team sports.

Write-In Goals

Students should:

. be able to converse in Spanish.

. understand how to use one's vote, the party system, and the influence of bloc or coalition voting practices.

2.4 Derivatives of the Research

Derivatives of the research have been synthesized and categorized for the convenience of the reader as follows: student population, manpower needs, programs, staff, and facilities. While actual application of these data to the planned educational park was obviated by decisions external to the Project Staff, the data should be of value to future Metroplex planners and to urban planners across the Nation.

2.4.1 Student Population

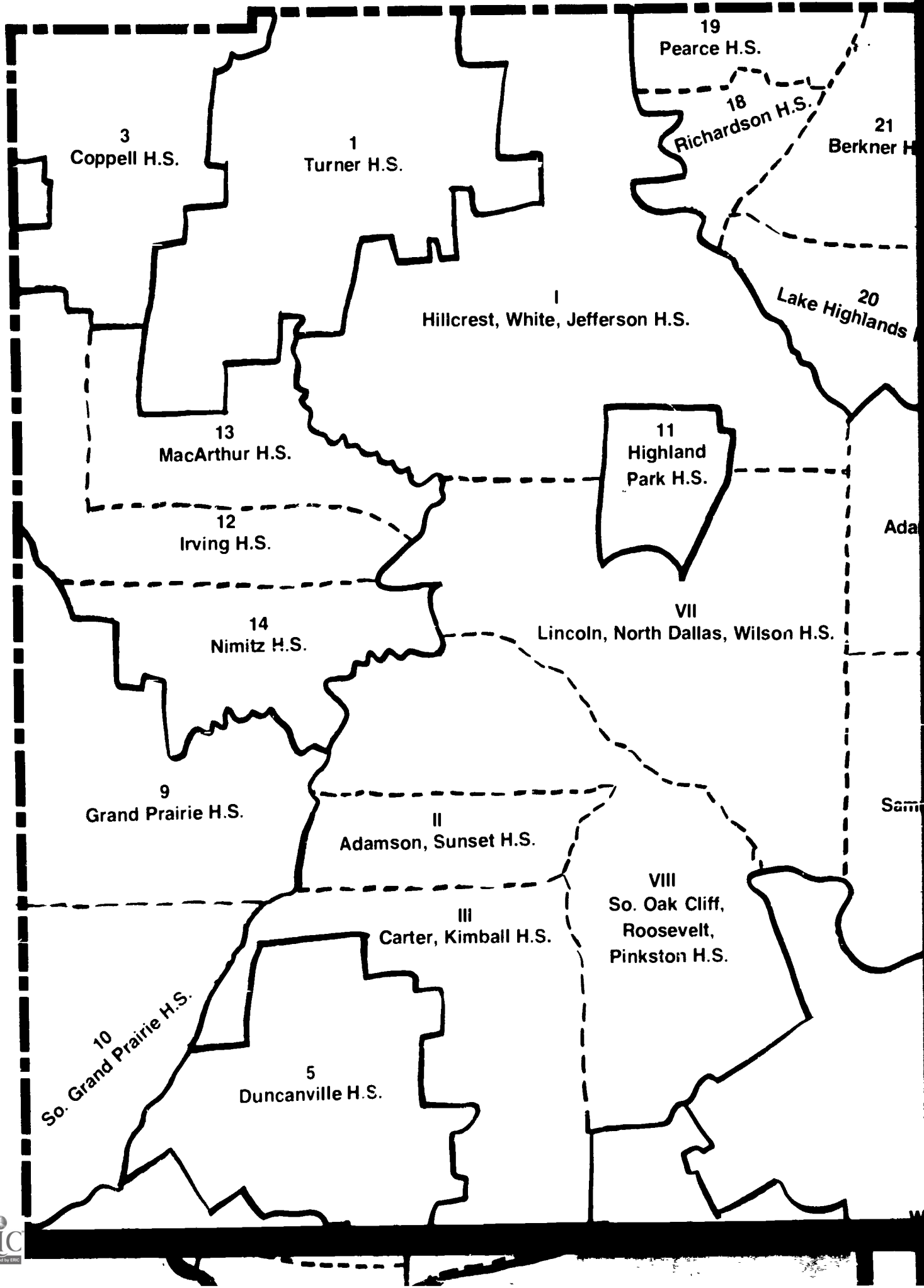
Because Project contraints required certain ethnic and socioeconomic ratios for the pupil population (enrollment) of the Project-resultant school, and because the Project-resultant school would have a specific geographically delineated area from which to draw pupils, it was decided quite early that it would be necessary to divide the two central counties (Dallas and Tarrant) into geographic areas and to project for each area the

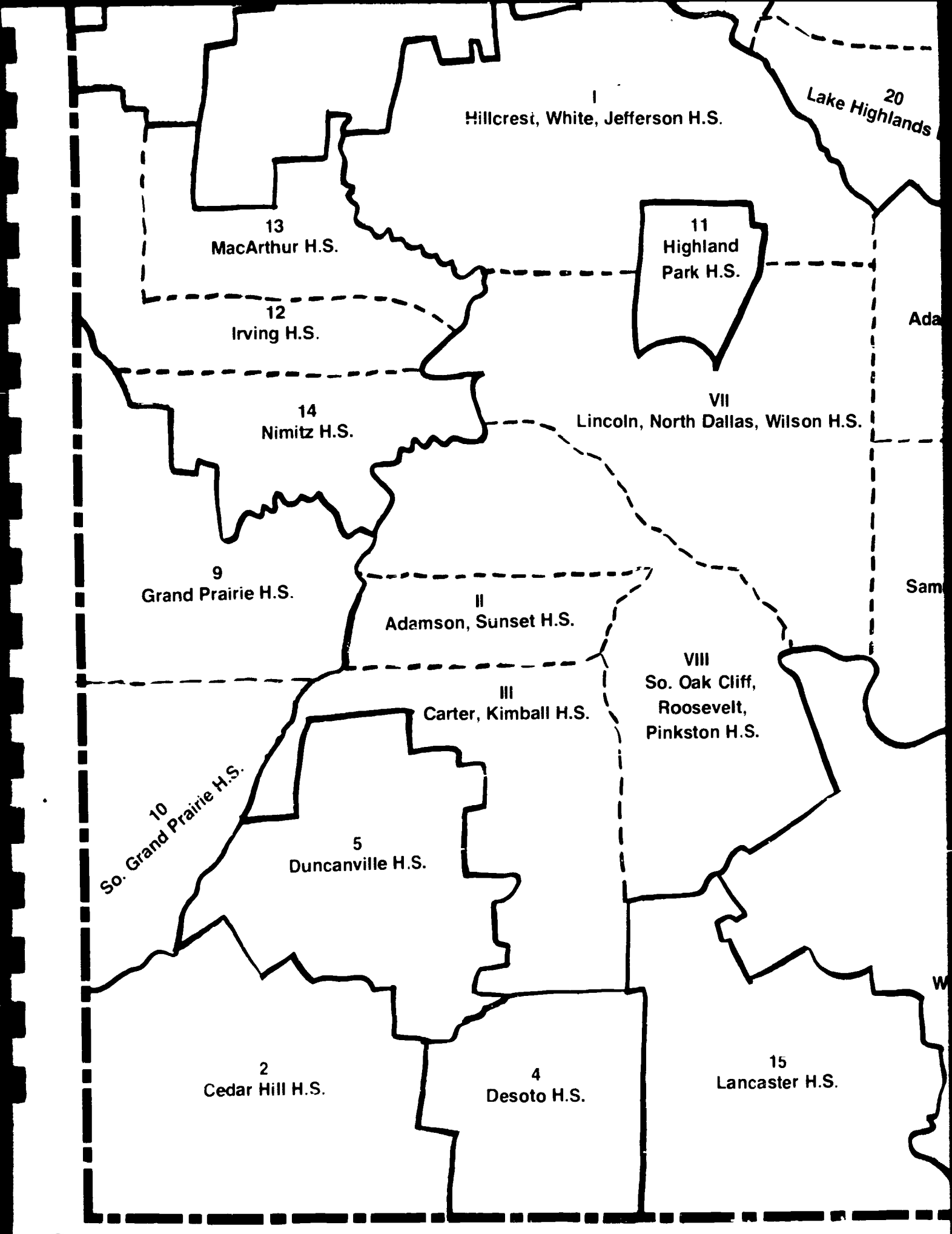
prospective pupil population and future economic conditions. Figures A-1 and A-2 present the designations, locations, and boundaries of the geographic areas used for Project demographic research.

FIGURE A-1

DALLAS COUNTY

DESIGNATIONS, LOCATION, AND BOUNDARIES OF THE GEOGRAPHIC STATISTICAL AREAS U

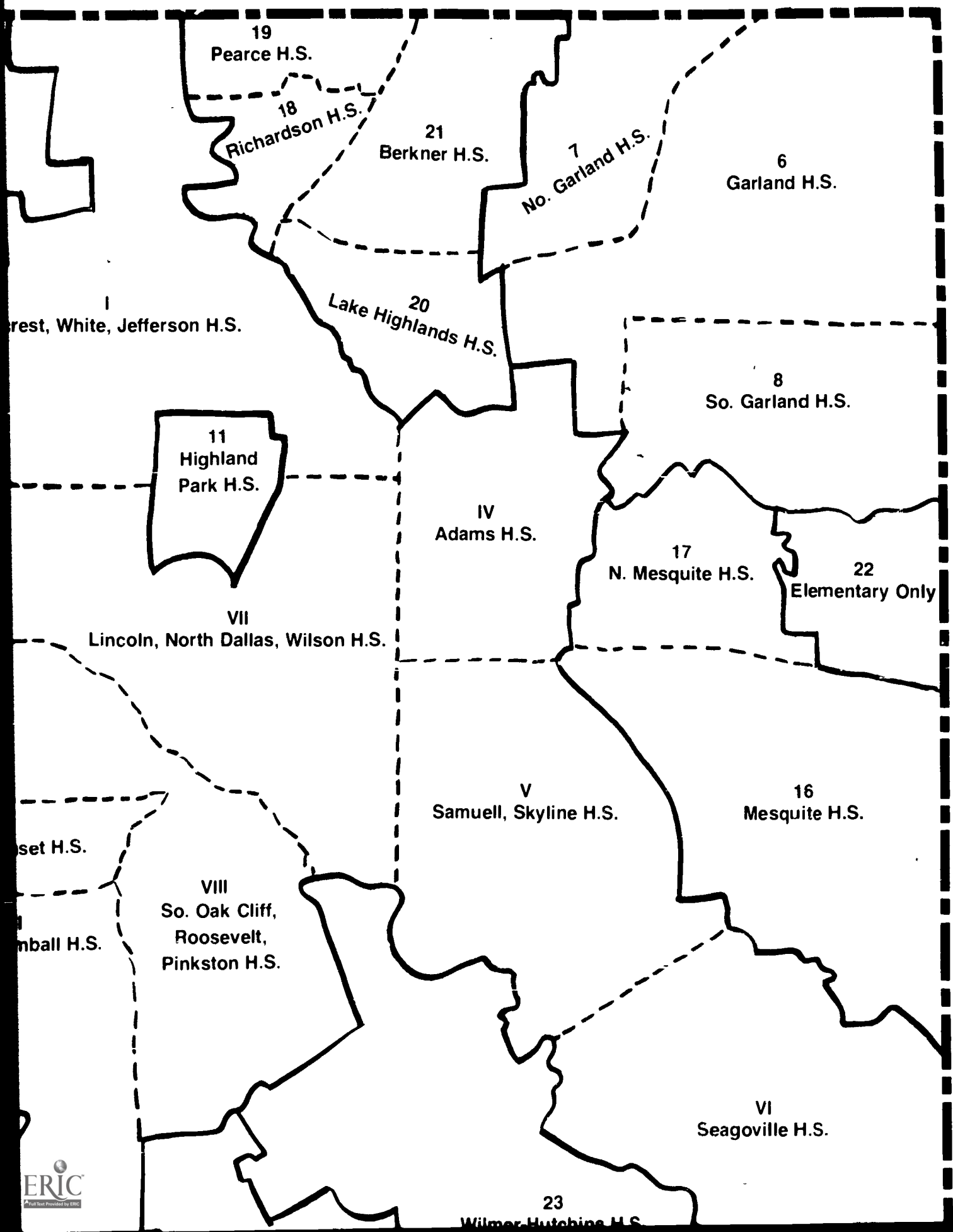




Numerals correspond to those appearing in Tables P-1, P-2, P-8

FIGURE A-1
DALLAS COUNTY

RIES OF THE GEOGRAPHIC STATISTICAL AREAS USED FOR PROJECT DEMOGRAPHIC STUDIES



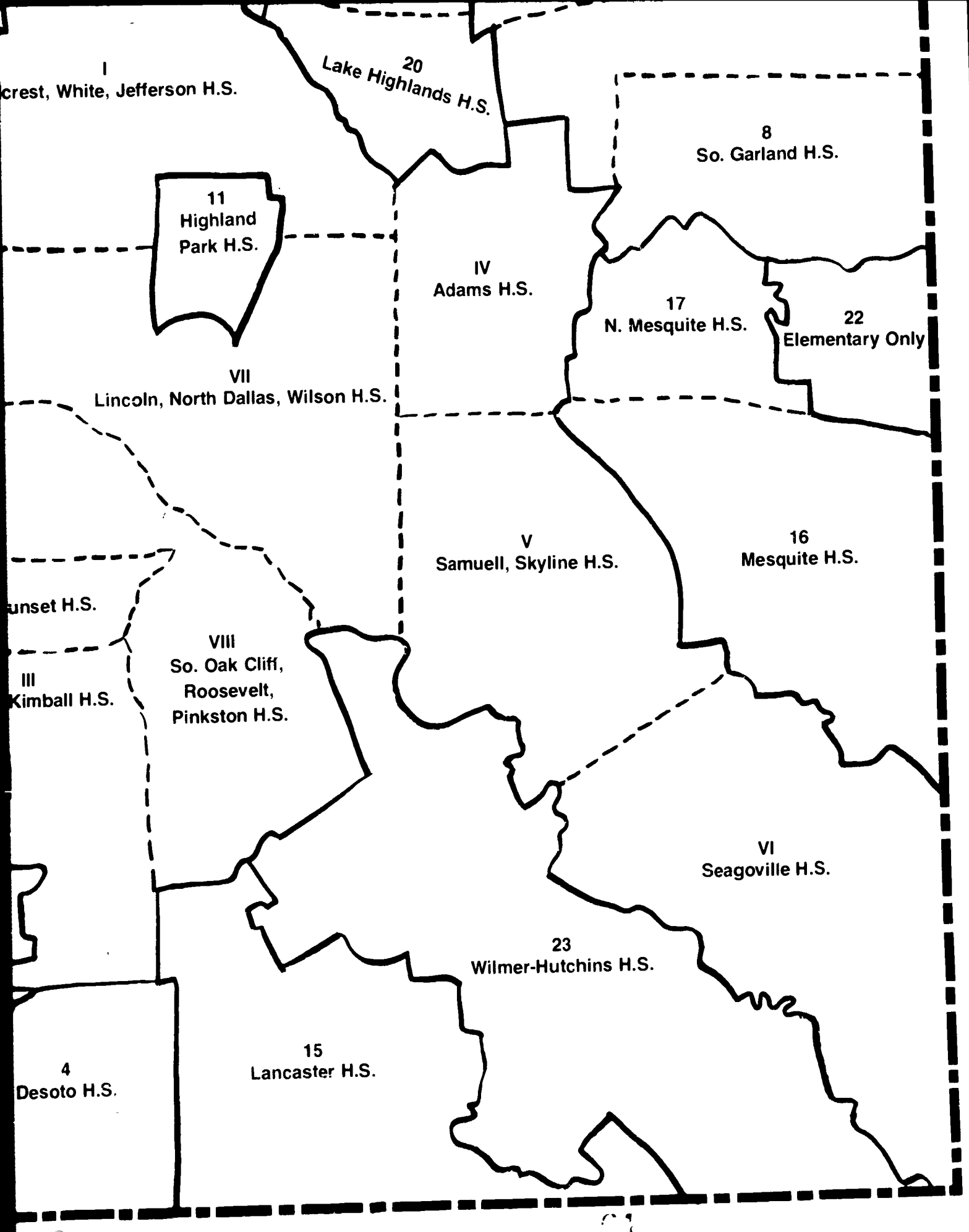
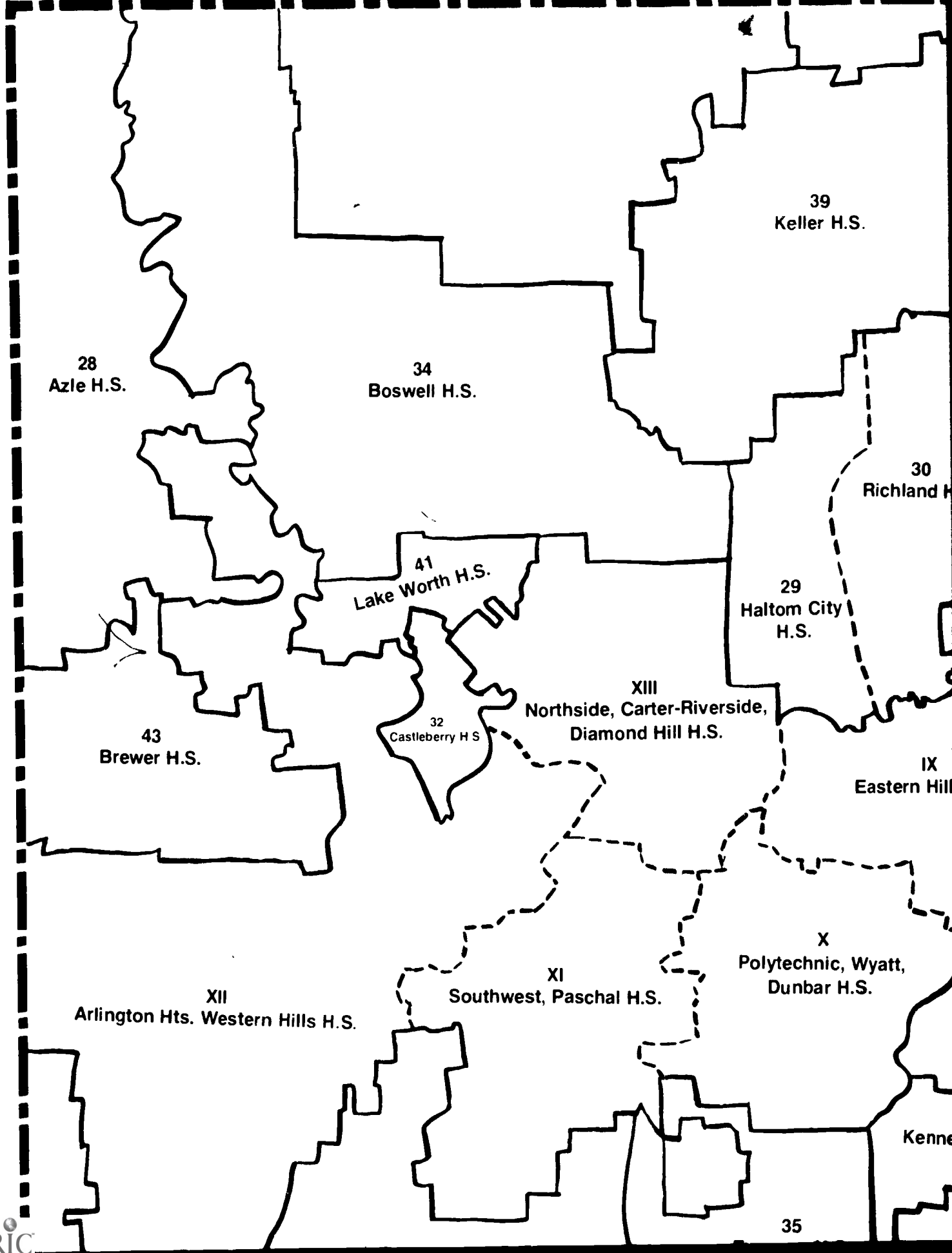
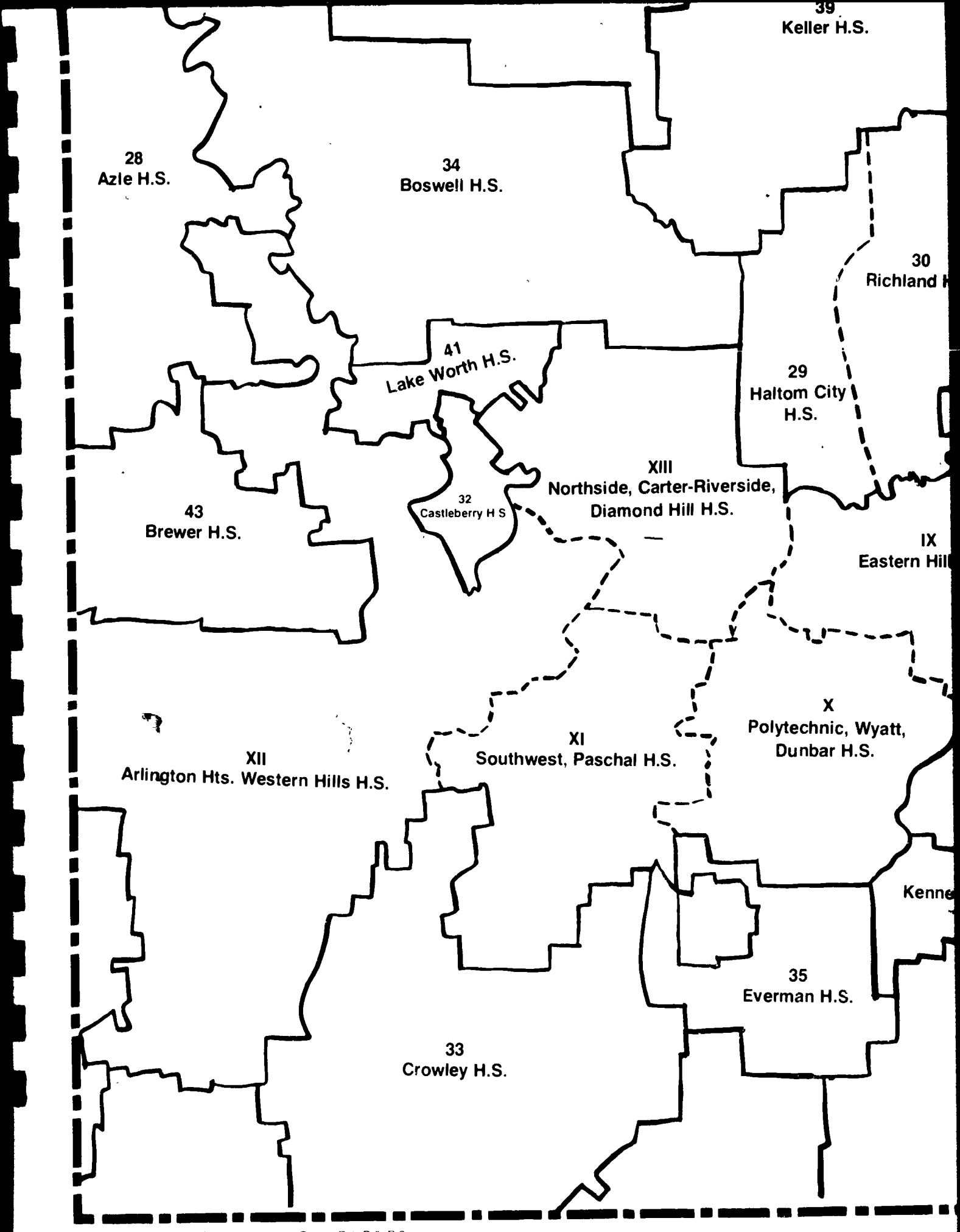

I
crest, White, Jefferson H.S.
20
Lake Highlands H.S.
8
So. Garland H.S.
11
Highland
Park H.S.
IV
Adams H.S.
17
N. Mesquite H.S.
22
Elementary Only
VII
Lincoln, North Dallas, Wilson H.S.
V
Samuell, Skyline H.S.
16
Mesquite H.S.
unset H.S.
VIII
So. Oak Cliff,
Roosevelt,
Pinkston H.S.
III
Kimball H.S.
VI
Seagoville H.S.
23
Wilmer-Hutchins H.S.
15
Lancaster H.S.
4
Desoto H.S.

FIGURE A-2

TARRANT COUNTY

DESIGNATIONS, LOCATION, AND BOUNDARIES OF THE GEOGRAPHIC STATISTICAL AREAS US



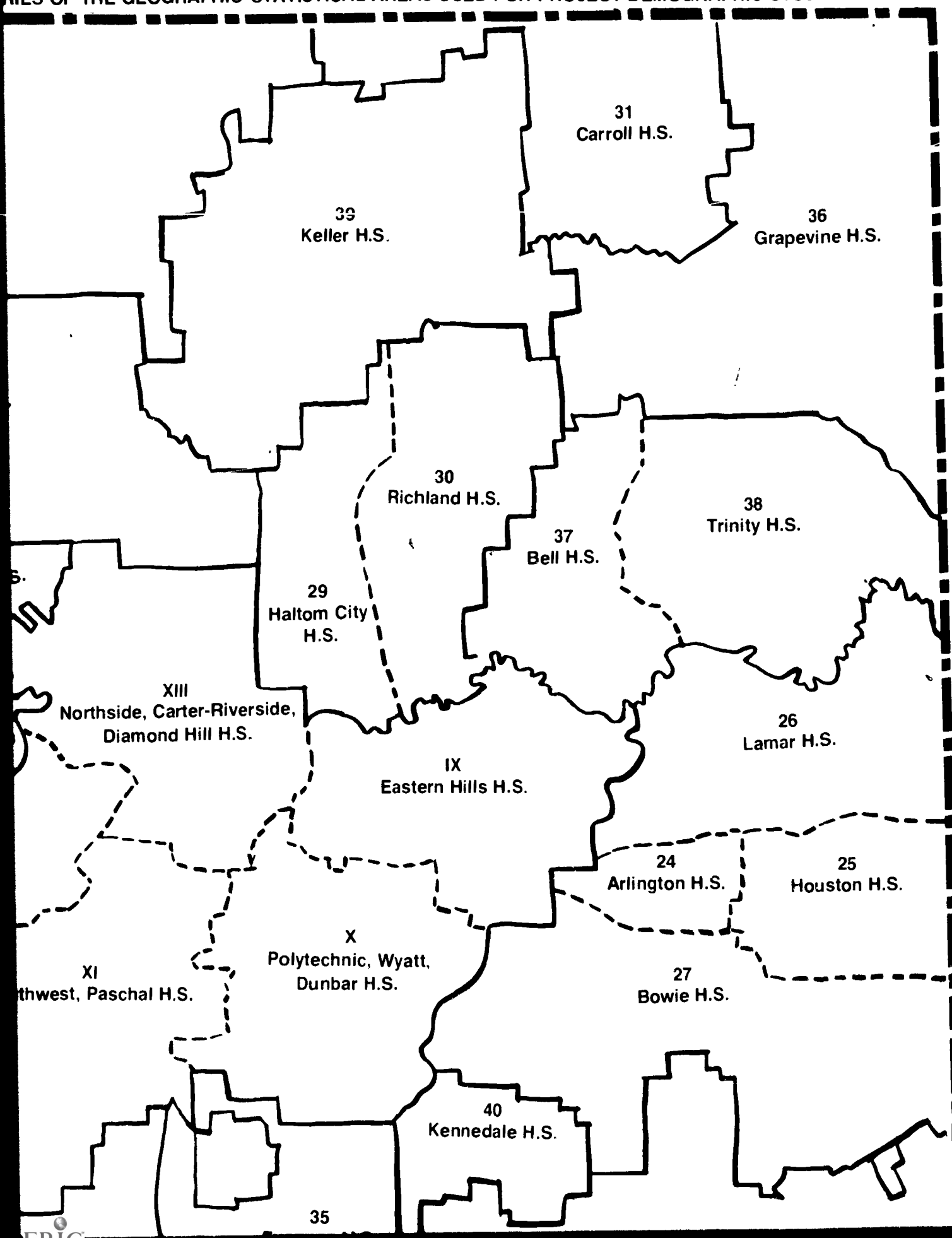


Numerals correspond to those appearing in Tables P 1 P 2 P 8

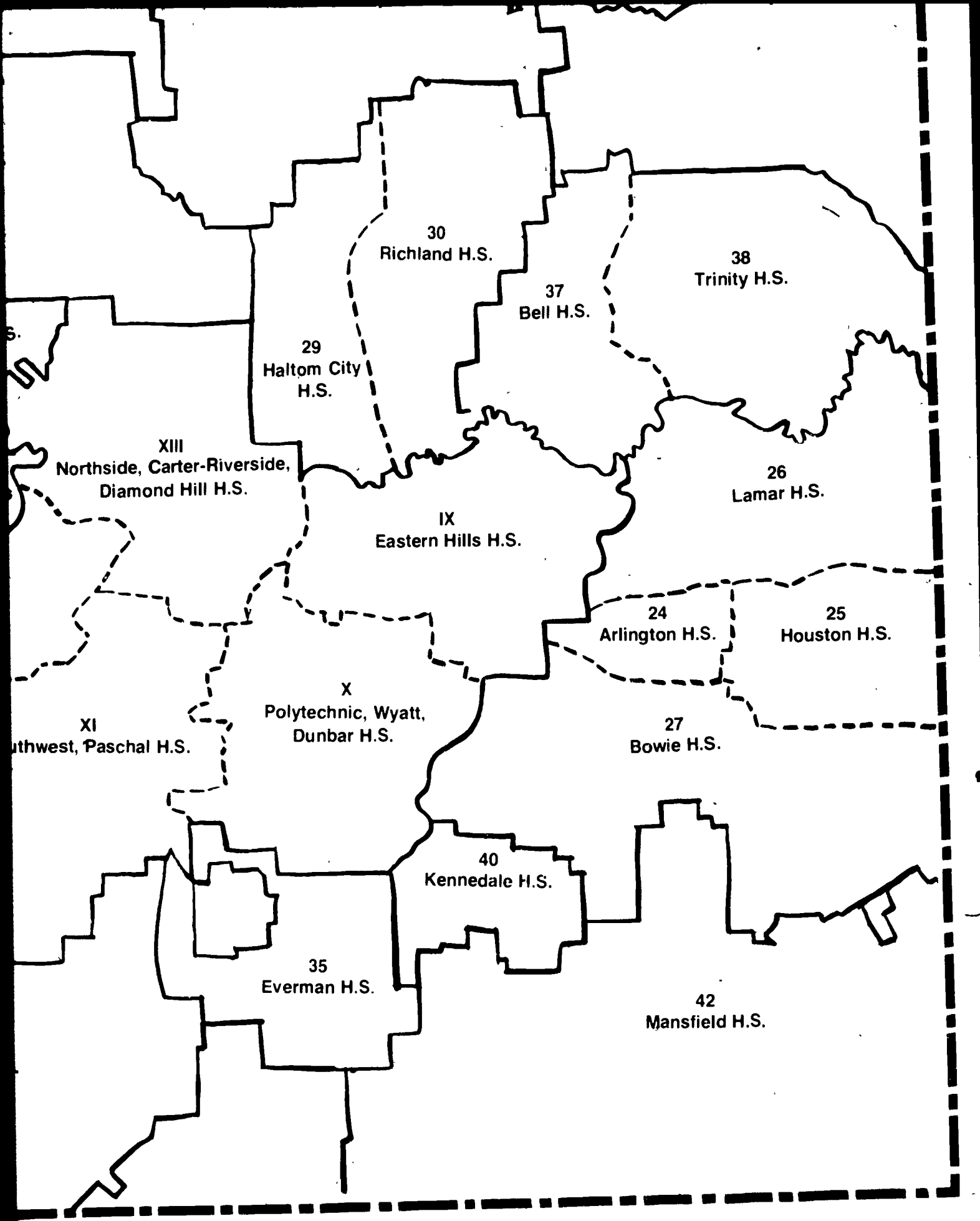
FIGURE A-2

TARRANT COUNTY

RIES OF THE GEOGRAPHIC STATISTICAL AREAS USED FOR PROJECT DEMOGRAPHIC STUDIES



ition to these younger students, more older persons will return to school


30
Richland H.S.
38
Trinity H.S.
37
Bell H.S.
29
Haltom City
H.S.
XIII
Northside, Carter-Riverside,
Diamond Hill H.S.
26
Lamar H.S.
IX
Eastern Hills H.S.
24
Arlington H.S.
25
Houston H.S.
X
Polytechnic, Wyatt,
Dunbar H.S.
XI
thwest, Paschal H.S.
27
Bowie H.S.
40
Kennedale H.S.
35
Everman H.S.
42
Mansfield H.S.

The geographic areas which have been subjected to pupil population forecasting for the Project were determinded on the basis of present high school attendance zones and are designated as follows:

1) In the Dallas and Fort Worth school districts each statistical geographic area consists of either a single geographically large (senior) high school attendance zone (1973-74 delineation) or of several geographically contiguous (senior) high school attendance zones. All of the statistical areas in these two districts, for purposes of this Project, are designated as "cluster" attendance areas and enumerated in Roman numerals in the data, tables, and figures presented.

2) In all other school districts of the two central counties the statistical areas consist of the high school attendance zones (as delineated by the respective districts for 1974), are designated as "high school" attendance areas, and are enumerated in Arabic numerals in the data, tables, and figures presented.

The forecasts for the prospective pupil population of each of these aforementioned areas were derived from linear projections using the 1970, 1971, 1972, and 1973 enrollments within each area as a "base line" and extending this base to the 1980-81 school year. This base line was further extended to the 1985-86 school year, but with derived raw estimates of pupil population further refined and adjusted to take into account such attenuating factors as: (1) declines in birthrates and variance in birthrates, as between ethnic groups, (2) prospective residential saturation within particular areas, (3) economic development having a high probability of impacting on the socioeconomic status of residents, and the ensuing increase or decrease of their numbers, (4) authoritative estimates of future net in-migration for larger segments of the Metroplex, (5) trends and probable developments in private and parochial school enrollments, and (6) other factors indigenous to a particular area. It was believed

. be able to use an electronic calculator.

(senior) high school attendance zone (1973-74 delineation) or of several geographically contiguous (senior) high school attendance zones. All of the statistical areas in these two districts, for purposes of this Project, are designated as "cluster" attendance areas and enumerated in Roman numerals in the data, tables, and figures presented.

2) In all other school districts of the two central counties the statistical areas consist of the high school attendance zones (as delineated by the respective districts for 1974), are designated as "high school" attendance areas, and are enumerated in Arabic numerals in the data, tables, and figures presented.

The forecasts for the prospective pupil population of each of these aforementioned areas were derived from linear projections using the 1970, 1971, 1972, and 1973 enrollments within each area as a "base line" and extending this base to the 1980-81 school year. This base line was further extended to the 1985-86 school year, but with derived raw estimates of pupil population further refined and adjusted to take into account such attenuating factors as: (1) declines in birthrates and variance in birthrates, as between ethnic groups, (2) prospective residential saturation within particular areas, (3) economic development having a high probability of impacting on the socioeconomic status of residents, and the ensuing increase or decrease of their numbers, (4) authoritative estimates of future net in-migration for larger segments of the Metroplex, (5) trends and probable developments in private and parochial school enrollments, and (6) other factors indigenous to a particular area. It was believed that these refined forecasts would enable decision-makers to determine which of the various alternative locations of the Project-resultant school would have a prospective pupil population compatible with the ethnic and socioeconomic constraints of the Project, as well as to provide valuable and updated demographic data to the Metroplex community at large.

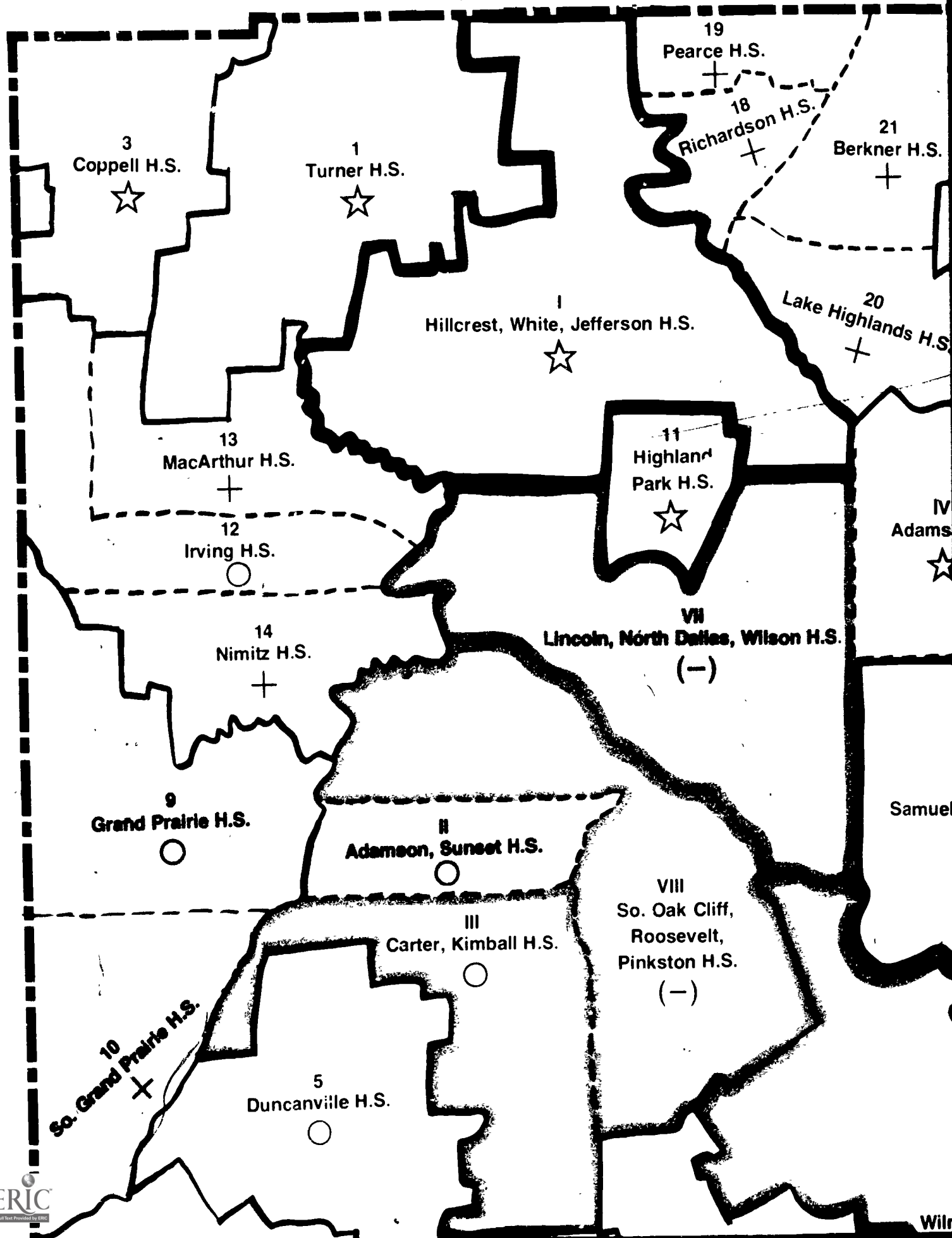
Interested readers are referred to Metroplex Student Demographic Data, Appendix I, Volume II, of this report, for a detailed and definitive treatment of Metroplex student population forecasts. This treatment includes guidelines for the derivation and organization of the forecasts, ethnic categories of the forecasted population, forecasts of enrollments K-12 for years 1980-81 and 1985-86, relevant socio-economic characteristics of the population forecasts, plus other data and observations.

An example of these kinds of forecast data is presented in Figures B-1 and B-2, which display ethnic and socio-economic characteristics of K-12 public school enrollees in the various Project geographic statistical areas for the school year 1985-86.

FIGURE B-1

DALLAS COUNTY

ETHNIC AND SOCIO-ECONOMIC CHARACTERISTICS OF PUBLIC SCHOOL P
GRADES K-12, IN THE VARIOUS GEOGRAPHICAL STATISTICAL ARE



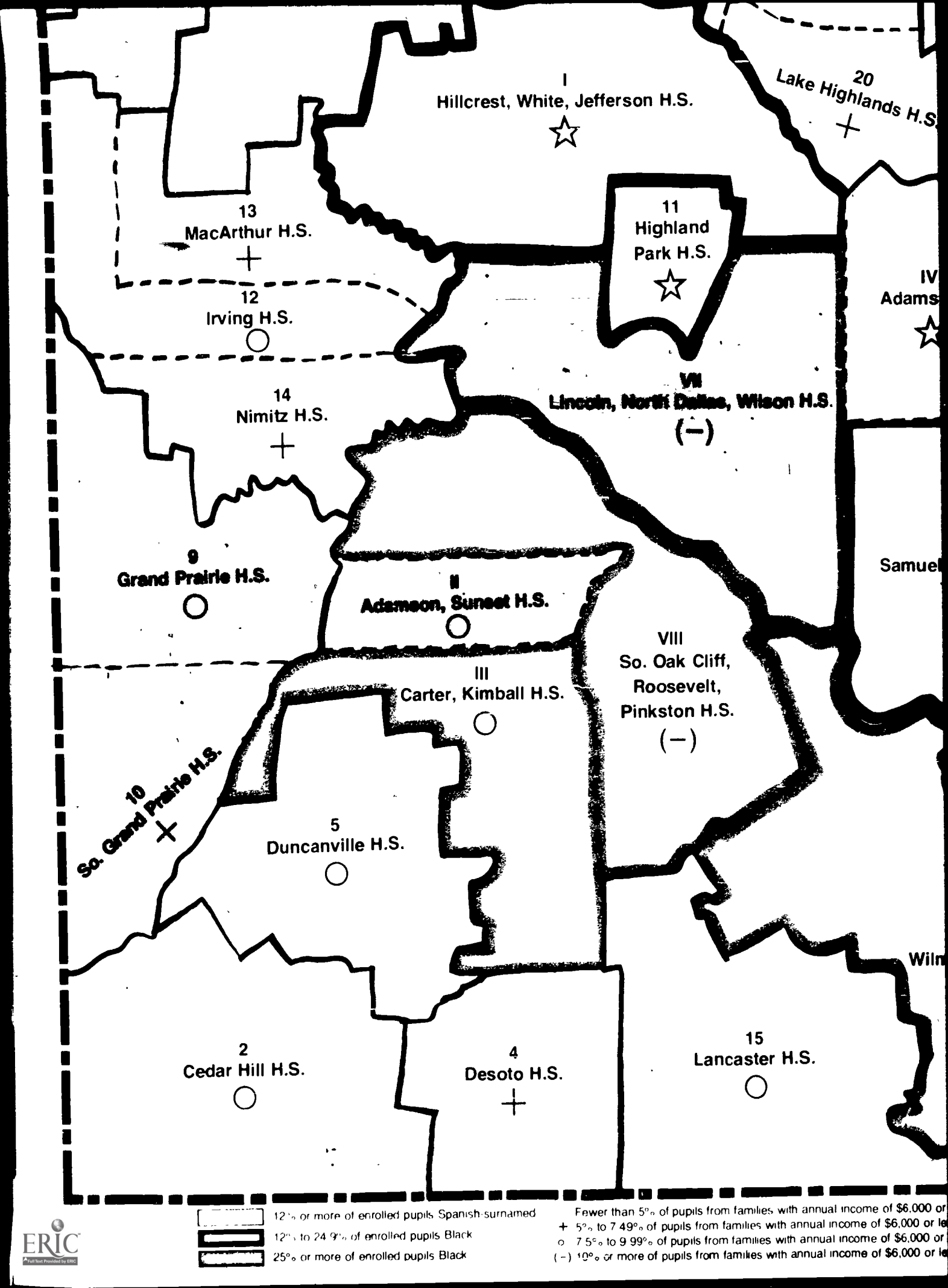
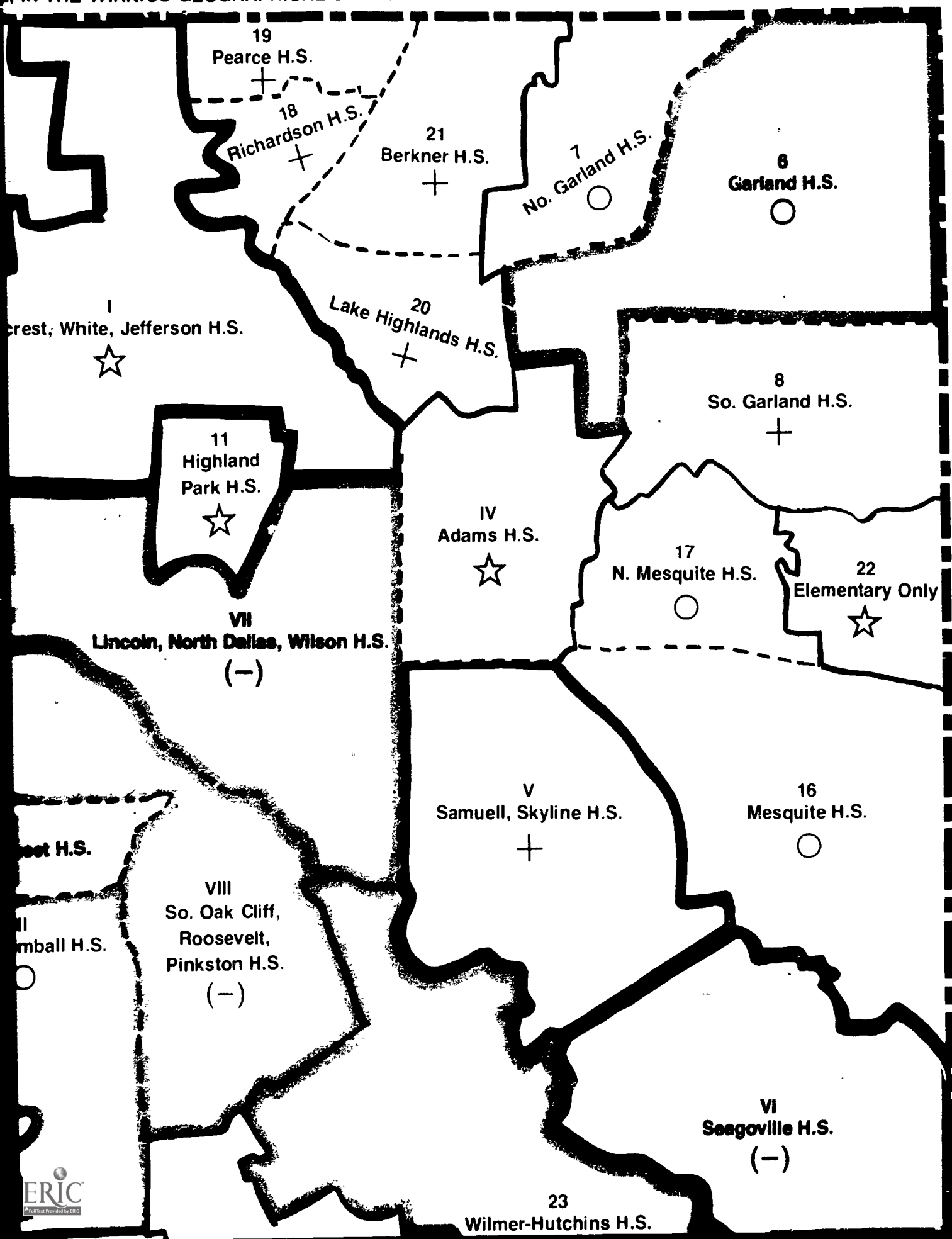
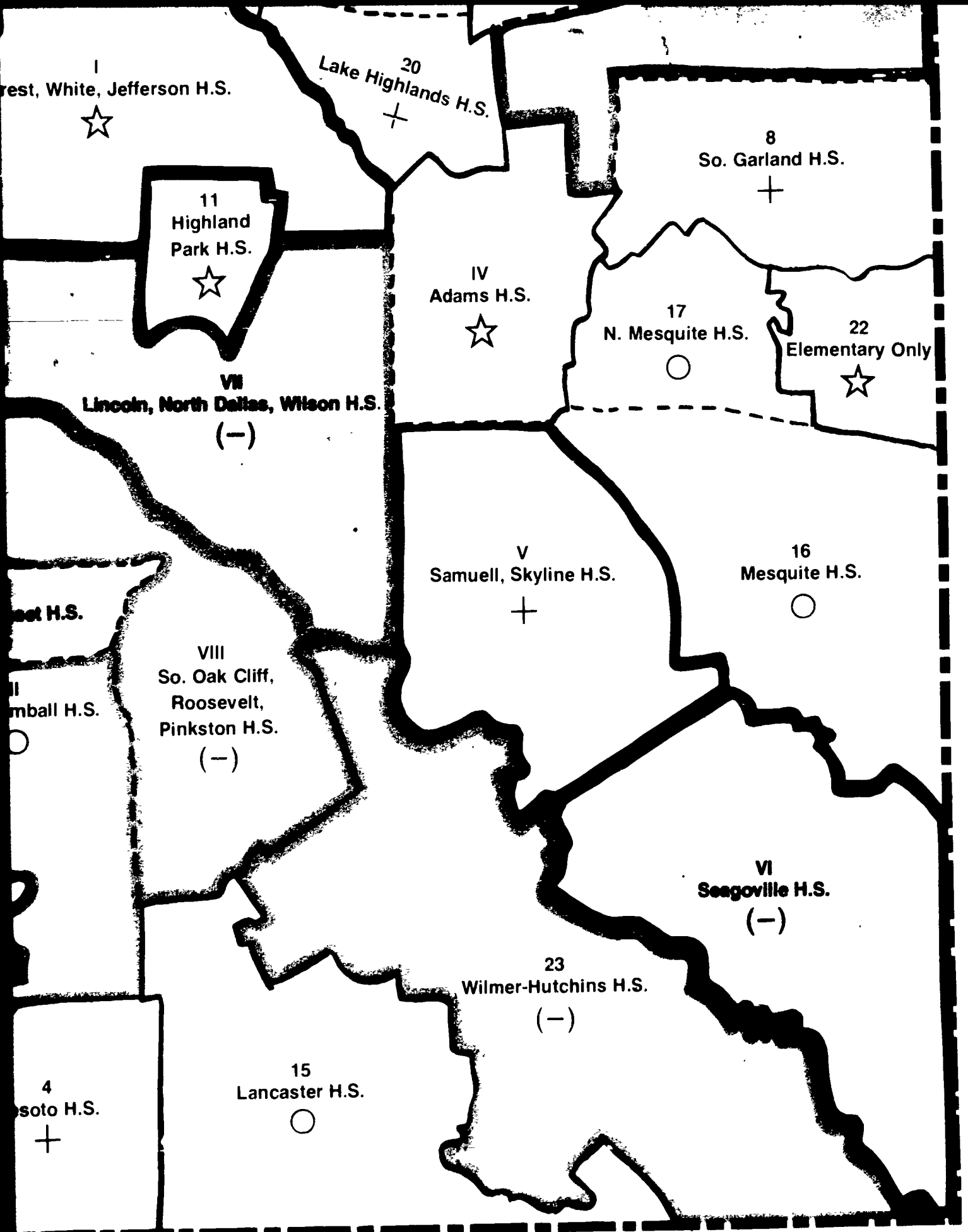

I
Hillcrest, White, Jefferson H.S.
20
Lake Highlands H.S.
13
MacArthur H.S.
11
Highland
Park H.S.
IV
Adams
12
Irving H.S.
VII
Lincoln, North Dallas, Wilson H.S.
(–)
14
Nimitz H.S.
9
Grand Prairie H.S.
II
Adamson, Sunset H.S.
Samuel
VIII
So. Oak Cliff,
Roosevelt,
Pinkston H.S.
(–)
III
Carter, Kimball H.S.
10
So. Grand Prairie H.S.
5
Duncanville H.S.
Wilm
2
Cedar Hill H.S.
4
Desoto H.S.
15
Lancaster H.S.
12% or more of enrolled pupils Spanish-surnamed
12% to 24.9% of enrolled pupils Black
25% or more of enrolled pupils Black
Fewer than 5% of pupils from families with annual income of $6,000 or
+ 5% to 7.49% of pupils from families with annual income of $6,000 or le
o 7.5% to 9.99% of pupils from families with annual income of $6,000 or
(–) 10% or more of pupils from families with annual income of $6,000 or le

FIGURE B-1
DALLAS COUNTY
O-ECONOMIC CHARACTERISTICS OF PUBLIC SCHOOL PUPIL ENROLLEES,
2, IN THE VARIOUS GEOGRAPHICAL STATISTICAL AREAS — 1985-86





Fewer than 5% of pupils from families with annual income of $6 000 or less

\+ 5% to 7 49% of pupils from families with annual income of $6 000 or less

○ 7 5% to 9 99% of pupils from families with annual income of $6 000 or less

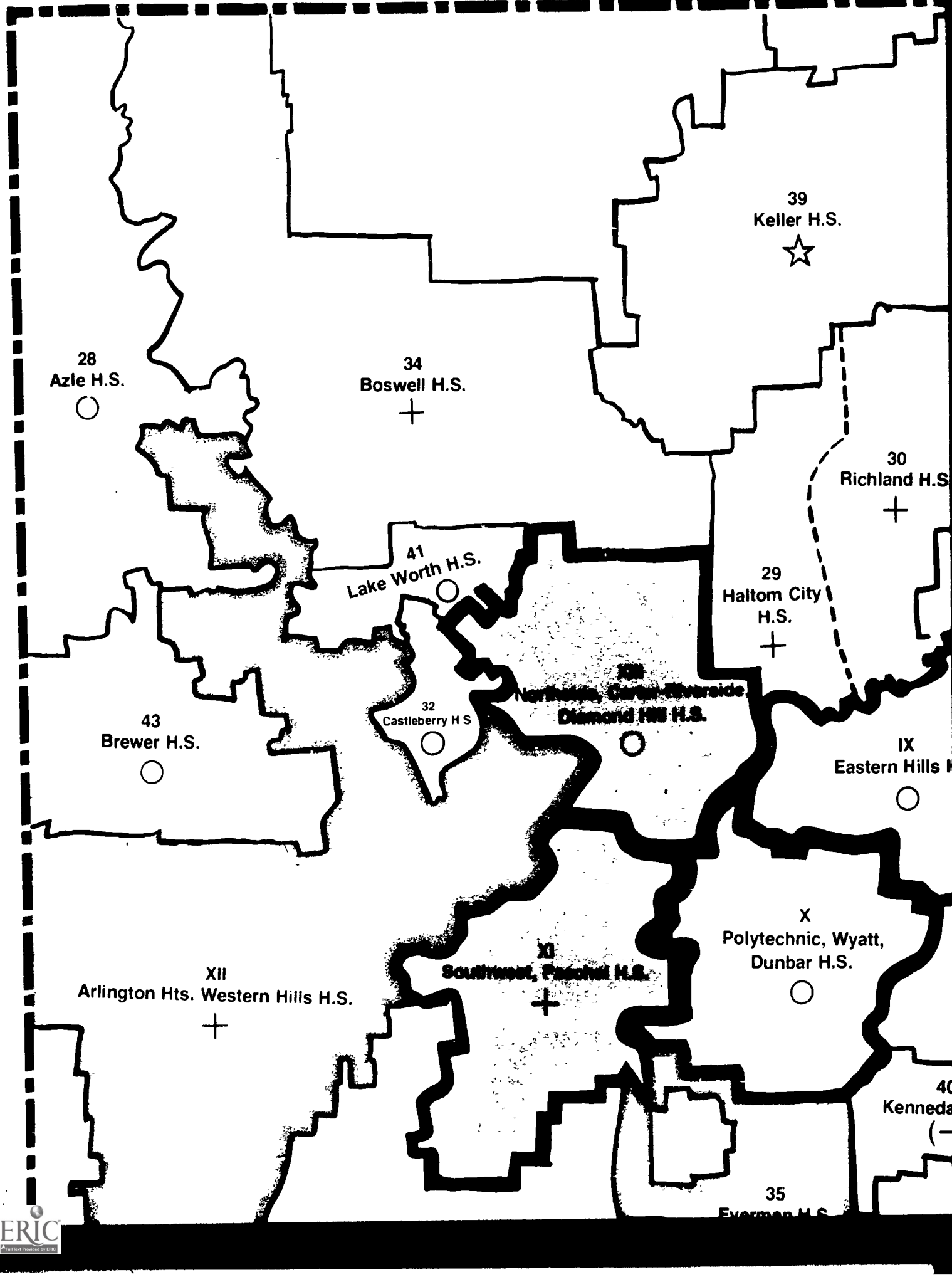
(–) 10% or more of pupils from families with annual income of $6,000 or less

FIGURE B-2

TARRANT COUNTY

ETHNIC AND SOCIO-ECONOMIC CHARACTERISTICS OF PUBLIC SCHOOL PU

GRADES K-12, IN THE VARIOUS GEOGRAPHICAL STATISTICAL AREA



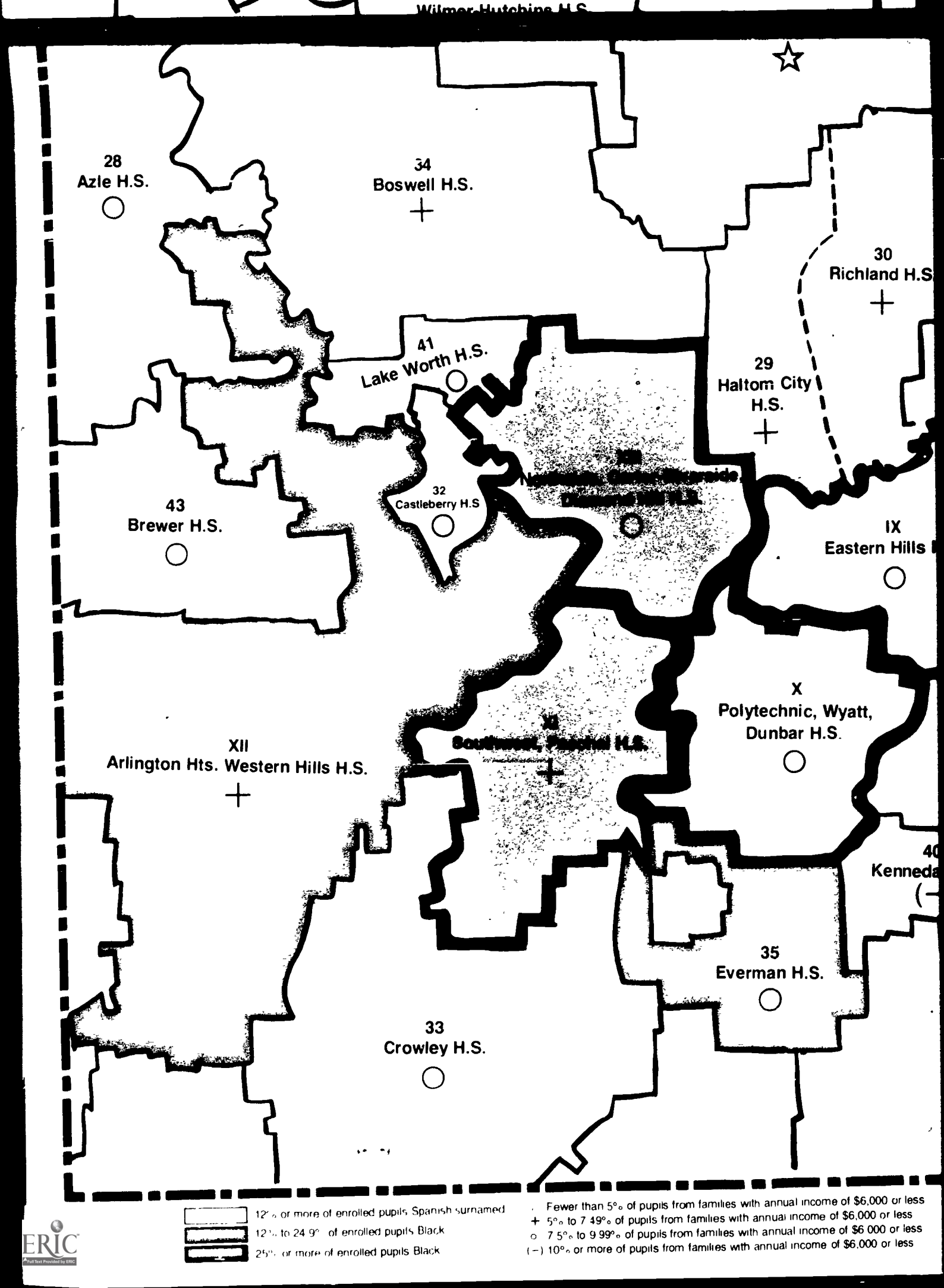
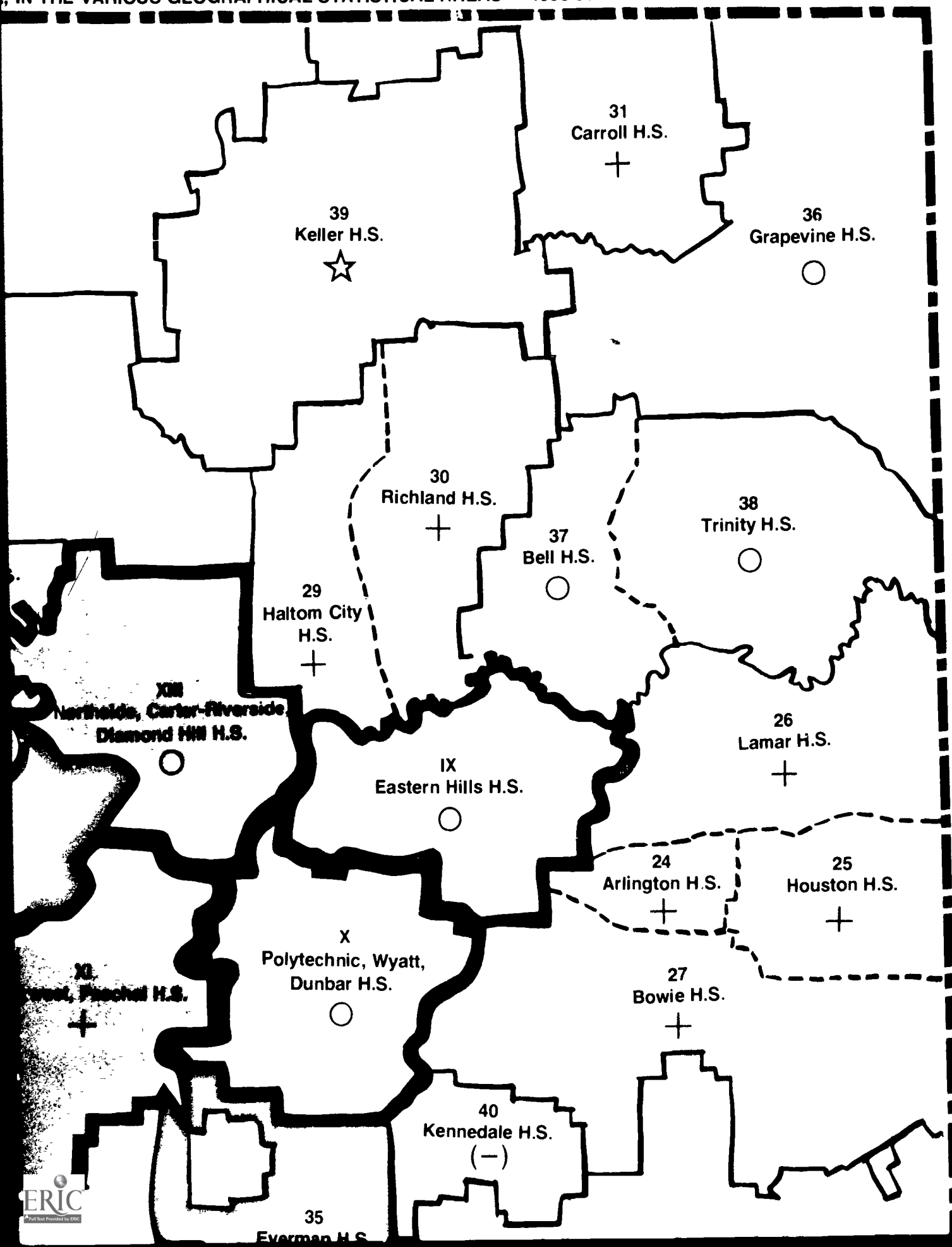
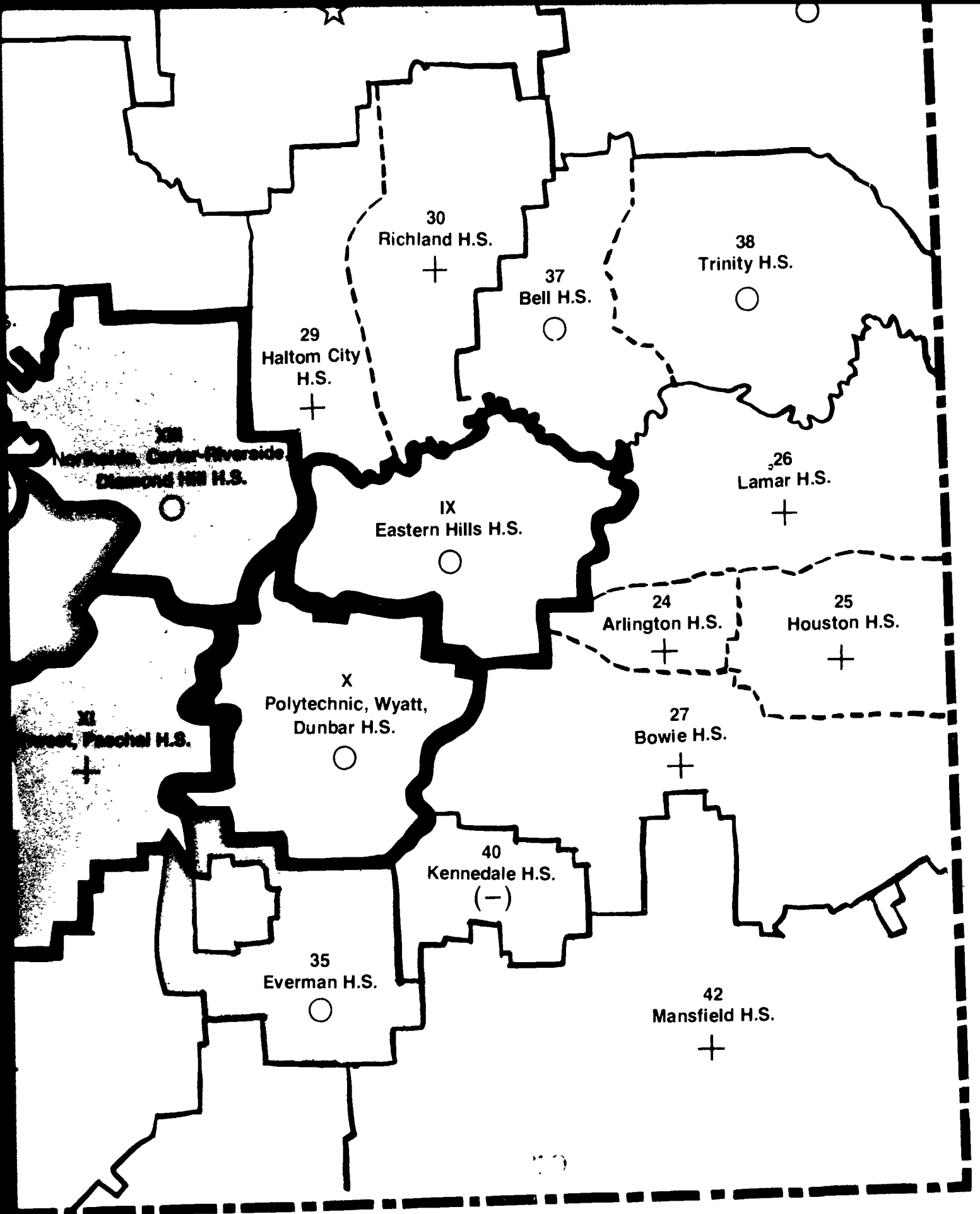

28
Azle H.S.
34
Boswell H.S.
30
Richland H.S.
41
Lake Worth H.S.
29
Haltom City
H.S.
32
Castleberry H.S
43
Brewer H.S.
IX
Eastern Hills
X
Polytechnic, Wyatt,
Dunbar H.S.
XII
Arlington Hts. Western Hills H.S.
35
Everman H.S.
33
Crowley H.S.
12% or more of enrolled pupils Spanish surnamed
12% to 24.9% of enrolled pupils Black
25% or more of enrolled pupils Black
. Fewer than 5% of pupils from families with annual income of $6,000 or less
+ 5% to 7.49% of pupils from families with annual income of $6,000 or less
○ 7.5% to 9.99% of pupils from families with annual income of $6,000 or less
(−) 10% or more of pupils from families with annual income of $6,000 or less

FIGURE B-2

TARRANT COUNTY

O-ECONOMIC CHARACTERISTICS OF PUBLIC SCHOOL PUPIL ENROLLEES,
, IN THE VARIOUS GEOGRAPHICAL STATISTICAL AREAS — 1985-86





med

- Fewer than 5% of pupils from families with annual income of $6 000 or less
- 5% to 7 49% of pupils from families with annual income of $6 000 or less
- 7 5% to 9 99% of pupils from families with annual income of $6 000 or less
- 10% or more of pupils ...m families with annual income of $6 000 or less

Changing Student Profiles -- There seems to be no indication that the value of education in the culture of the United States will diminish. On the contrary, it will apparently increase by the 1980's. Although there will be fewer young people (percentage-wise) to populate the schools of the future, those who do go to school will usually stay longer. In addition to these younger students, more older persons will return to school for training in new vocations or avocations. Thus, the number of students the schools will serve cannot be expected to change greatly, but student profiles will change as the number of older students grow larger. For example, in 1900, one out of every 25 Americans was 65 or over. By the early 1970's, this ratio had grown to 1 out of every 10 and to a total of over 20 million Americans who were 65 or over. This total is even more impressive if one considers that the combined populations of our Nation's 20 smallest states is less than 20 million! And in the decades of the 1980's and beyond, the number of Americans aged 65 or over will be even greater. Obviously, the futurist planner is obligated to consider the possible impact of these senior citizens on schooling.

2.4.2 Manpower Needs

A futuristic school serving the Dallas-Fort Worth Metroplex must determine that its product will be responsive to contemporary societal needs, economic environment, and manpower requirements. The consideration of this section is the identification of Metroplex manpower resources in terms of numbers, educational levels, and job classifications required for the decade of the 1980's.

Metroplex Manpower Needs -- Table 1 reflects data from the document, "Comprehensive Manpower Plan for the Cities of Dallas-Fort Worth and the Surrounding Area--Fiscal Year 1974," prepared by the Office of Manpower planning, North Central Texas Council of Governments (NCTCOG), Arlington, Texas.

ition to these younger students, more older persons will return to school for training in new vocations or avocations. Thus, the number of students the schools will serve cannot be expected to change greatly, but student profiles will change as the number of older students grow larger. For example, in 1900, one out of every 25 Americans was 65 or over. By the early 1970's, this ratio had grown to 1 out of every 10 and to a total of over 20 million Americans who were 65 or over. This total is even more impressive if one considers that the combined populations of our Nation's 20 smallest states is less than 20 million! And in the decades of the 1980's and beyond, the number of Americans aged 65 or over will be even greater. Obviously, the futurist planner is obligated to consider the possible impact of these senior citizens on schooling.

2.4.2 Manpower Needs

A futurist c school serving the Dallas-Fort Worth Metroplex must determine that its product will be responsive to contemporary societal needs, economic environment, and manpower requirements. The consideration of this section is the identification of Metroplex manpower resources in terms of numbers, educational levels, and job classifications required for the decade of the 1980's.

Metroplex Manpower Needs -- Table I reflects data from the document, "Comprehensive Manpower Plan for the Cities of Dallas-Fort Worth and the Surrounding Area--Fiscal Year 1974," prepared by the Office of Manpower planning, North Central Texas Council of Governments (NCTCOG), Arlington, Texas.

Information reported by NCTCOG for the Dallas Standard Metropolitan Statistical Area (SMSA) and the Fort Worth SMSA have been combined in Table I.

TABLE I

FUTURE MANPOWER REQUIREMENTS AND POTENTIAL LABOR MARKET ENTRANTS BY YEARS OF SCHOOL COMPLETED FOR THE COMBINED DALLAS-FORT WORTH STANDARD METROPOLITAN STATISTICAL AREA

YEAR 1980	EMPLOYMENT REQUIREMENTS			
	EXPANSION 35,780	REPLACEMENTS 26,789	TOTAL 62,569	

YEAR 1980	EMPLOYMENT REQUIREMENT BY YEARS OF SCHOOL COMPLETED				
	LESS THAN HIGH SCHOOL	4 YEARS HIGH SCHOOL	1-3 YEARS COLLEGE	4 YEARS COLLEGE	5 YEARS COLLEGE
	20,281	24,726	8,763	5,320	3,505

YEAR 1980	POTENTIAL WORK FORCE ENTRANTS				
	LESS THAN HIGH SCHOOL	4 YEARS HIGH SCHOOL	1-3 YEARS COLLEGE	4 YEARS COLLEGE	5 YEARS COLLEGE
	6,158	15,890	12,563	6,600	2,287

This table reveals that the labor force potential for the year 1980 is 43,498 or 70.15% of the projected labor requirement for that year. The differences between the classifications of "Employment Requirement By Years of School Completed" and the "Potential Work Force Entrants" are as follows: 69.7% less than the need for the "Less Than High School Education" category; 35.8% less than the need for the "Four Years of High School" category; 46.36% more than the need for the "1-3 Years of College" category. Further, the potential work force entrants are 46.36% more than the need for the educational category "Four Years College", and 34.76% less than the need for the "Five Years College" category.

Manpower Needs by Occupation -- Table II is extrapolated from the document "Total Employment Requirements by Occupation in the Dallas and Fort Worth SMSA," prepared by the Office of Manpower Planning, North Central Texas Council of Governments. For brevity, occupational sub-categories are not shown, and only broad occupational categories are presented.

TABLE II

TOTAL EMPLOYMENT REQUIREMENTS BY OCCUPATION IN THE DALLAS-FORT WORTH STANDARD METROPOLITAN STATISTICAL AREA 1970-1980

OCCUPATION	DALLAS-FORT WORTH SMSA		
	EXPANSION 1* REQUIREMENTS 1970-1980	REPLACEMENT 2* REQUIREMENTS 1970-1980	TOTAL 3* REQUIREMENTS 1970-1980
Total Employment	317,320	211,042	528,362
Professional, technical, kindred	63,438	26,094	89,532
Managers, officials, proprietors	25,635	25,371	51,006
Clerical and kindred workers	64,476	42,533	107,009
Sales workers	21,840	16,159	37,999
Craftsman, foreman, and kindred	[illegible],664	27,981	67,645
Operatives and kindred workers	41,702	37,552	79,254

Education" category; 35.8% less than the need for the "Four Years of High School" category; 46.36% more than the need for the "1-3 Years of College" category. Further, the potential work force entrants are 46.36% more than the need for the educational category "Four Years College", and 34.76% less than the need for the "Five Years College" category.

Manpower Needs by Occupation -- Table II is extrapolated from the document "Total Employment Requirements by Occupation in the Dallas and Fort Worth SMSA," prepared by the Office of Manpower Planning, North Central Texas Council of Governments. For brevity, occupational sub-categories are not shown, and only broad occupational categories are presented.

TABLE II

TOTAL EMPLOYMENT REQUIREMENTS BY OCCUPATION IN THE DALLAS-FORT WORTH STANDARD METROPOLITAN STATISTICAL AREA
1970-1980

OCCUPATION	DALLAS-FORT WORTH SMSA		
	EXPANSION 1* REQUIREMENTS 1970-1980	REPLACEMENT 2* REQUIREMENTS 1970-1980	TOTAL 3* REQUIREMENTS 1970-1980
Total Employment	317,320	211,042	528,362
Professional, technical, kindred	63,438	26,094	89,532
Managers, officials, proprietors	25,635	25,371	51,006
Clerical and kindred workers	64,476	42,533	107,009
Sales workers	21,840	16,159	37,999
Craftsmen, foremen, and kindred	39,664	27,981	67,645
Operatives and kindred workers	41,702	37,552	79,254
Service workers	45,854	24,858	70,712
Laborers (and farm workers)	3,164	9,944	13,108
Farmers and farm workers	554	317	871

* Table II footnotes appear on the following page.

1. Expansion requirements represent the growth in requirements by occupation for 1970-198

2. Replacement requirements assume an annual replacement rate of two per cent (2%) for each occupation.

3. Total employment requirements represent both expansion and replacement requirements for 1970-1980.

Factors Influencing Manpower Needs -- Many factors will influence the labor market in the year 1980, such as the availability of energy and material resources, the nature of the society, business cycles, Federal fiscal policies, international monetary and trade policies, national politics and concomitant social programs. Therefore, the school of the future must be prepared to meet the many contingencies that will exist in the labor market and prepare an adaptable student who will, through his schooling, have the necessary skills and knowledge to cope with what may well be a continuously changing world of work.

An example of such factors influencing future manpower needs are compulsory retirement (usually at age 65), liberalized early retirement, and extended life expectancies. These can be expected to produce major changes in manpower needs, and in corresponding educational needs.

To pursue the example of retirement factors further and to obtain a broader perspective of just this single factor, consider that in 1973 over 70 percent of the men who retired were under 65! And wives retired generally at earlier ages than did husbands -- so much earlier that while the 1973 male retirees could look forward to spending nearly one-fourth of their lives in retirement, women could expect to spend about one-third of their lifetimes in the retired phase! And all indications portend even more liberal retirement in the future society.

2.4.3 Staff

The literature indicated that most educators agree that the single most important ingredient in the educational process

placement requirements for 1970-1980.

Factors Influencing Manpower Needs -- Many factors will influence the labor market in the year 1980, such as the availability of energy and material resources, the nature of the society, business cycles, federal fiscal policies, international monetary and trade policies, national politics and concomitant social processes. Therefore, the school of the future must be prepared to meet the many contingencies that will exist in the labor market and prepare an adaptable student who will, through his schooling, have the necessary skills and knowledge to cope with what may well be a continuously changing world of work.

An example of such factors influencing future manpower needs are compulsory retirement (usually at age 65), liberalized early retirement, and extended life expectancies. These can be expected to produce major changes in manpower needs, and in corresponding educational needs.

To pursue the example of retirement factors further and to obtain a broader perspective of just this single factor, consider that in 1973 over 70 percent of the men who retired were under 65! And wives retired generally at earlier ages than did husbands -- so much earlier that while the 1973 male retirees could look forward to spending nearly one-fourth of their lives in retirement, women could expect to spend about one-third of their lifetimes in the retired phase! And all indications portend even more liberal retirement in the future society.

4.3 Staff

The literature indicated that most educators agree that the single most important ingredient in the educational process is the instructor; and that it is almost impossible to succeed with the finest curriculum, the finest facilities, and the poorest teachers. On the other hand, the consensus was that mediocre curricula and mediocre facilities plus the finest teachers can produce considerable success. Therefore, if the schools of the future are to be successful,

the instructional team must be of the highest quality and must possess specialized skills. (As used in this Report, the phrase instructional team does not imply team teaching. Instructional team represents all members of the instructional staff; whereas, team teaching represents an instructional process.) Further, these skills must be in keeping with the latest developments in the art of schooling.

The purpose of this subsection is to introduce some of the implications for staffing the school of the future, expecially in terms of competency, strategy, in-service training, supervision of instruction, concept of instructional team and accountability.

The following assumptions are used as the foundation for the discussions which follow:

- Teachers of the future will exhibit requisite competencies for giving quality instruction.
- The instructional team will be differentiated with respect to specialized training, instructional duties, and salaries.
- Teacher organizations will not impose a learning quota (limit of learning) on the educational process. Students will be encouraged to learn as much as possible as quickly as possible.
- State statutes will be adjusted to allow whatever staff licensing requirements are deemed necessary to produce the most cost-effective teaching-learning environment.
- The use of a differentiated staff as an instructional team will be integrated into the professional preparation of the facilitator (professional teacher-manager).

Staff Profile Factors -- Seemingly, the configuration of the instructional staff will be affected considerably by events of the future. The average age of professional teachers will increase. Therefore, teachers

an instructional process.) Further, these skills must be in keeping with the latest developments in the art of schooling.

The purpose of this subsection is to introduce some of the implications for staffing the school of the future, especially in terms of competency, strategy, in-service training, supervision of instruction, concept of instructional team and accountability.

The following assumptions are used as the foundation for the discussions which follow:

- Teachers of the future will exhibit requisite competencies for giving quality instruction.
- The instructional team will be differentiated with respect to specialized training, instructional duties, and salaries.
- Teacher organizations will not impose a learning quota (limit of learning) on the educational process. Students will be encouraged to learn as much as possible as quickly as possible.
- State statutes will be adjusted to allow whatever staff licensing requirements are deemed necessary to produce the most cost-effective teaching-learning environment.
- The use of a differentiated staff as an instructional team will be integrated into the professional preparation of the facilitator (professional teacher-manager).

Staff Profile Factors -- Seemingly, the configuration of the instructional staff will be affected considerably by events of the future. The average age of professional teachers will increase. Therefore, teachers will have to have opportunity for being retrained as the teaching tools they are using become obsolete. This retraining will include an opportunity to upgrade skills in the area of learning-teaching management, which implies that time and money for intensive in-service programs for teachers must be provided.

The paraprofessional, that person who will actually do most of the "pick and shovel" work, will need to be trained for specific schooling instructional tasks. The paraprofessional who has only a secondary level schooling background will possibly require one or two years of specialized training, much the same as do dental technicians and other paraprofessionals in specialized fields today.

Skills Factors -- It appears that some segments of society will have considerably more leisure time than in the 1970's. This has implications on the education of people for the profitable use of leisure time. In another section of this Report, the reader will find a discussion concerning skills necessary for the schooling of the future that are not currently being taught in the public schools, as well as a discussion of those skills that are currently being taught that should perhaps be eliminated. But beyond basic skills emphasis in the primary grades, future schooling will be devoted to building skills necessary for coping with societal problems within the immediate society in particular, and the global society in general.

Teacher Aides -- Educational processes will be more personalized than in the 1970's. To every extent possible instructional programs will be tailored to an individual student's desires and needs. Computer-aided instruction (and other yet undeveloped computer techniques, such as talking computers), the increased use of paraprofessionals, more clerical help, and expanded use of volunteers will have alleviated much of the logistical overburden that is inherent in the individualized programs of the current era. The professional teacher of the 1980's will be one step removed from the day-to-day non-instructional routines so prevalent in the classrooms of the 1970's. These routines will be accomplished by the special aides, human and/or mechanical.

Competency Strategies -- The competent teacher will obtain and maintain competency through the coordination of three prime strategies:

ionals in specialized fields today.

Skills Factors -- It appears that some segments of society will have considerably more leisure time than in the 1970's. This has implications on the education of people for the profitable use of leisure time. In another section of this Report, the reader will find a discussion concerning skills necessary for the schooling of the future that are not currently being taught in the public schools, as well as a discussion of those skill that are currently being taught that should perhaps be eliminated. But beyond basic skills emphasis in the primary grades, future schooling will be devoted to building skills necessary for coping with societal problems within the immediate society in particular, and the global society in general.

Teacher Aides -- Educational processes will be more personalized than in the 1970's. To every extent possible instructional programs will be tailored to an individual student's desires and needs. Computer-aided instruction (and other yet undeveloped computer techniques, such as talking computers), the increased use of paraprofessionals, more clerical help, and expanded use of volunteers will have alleviated much of the logistical overburden that is inherent in the individualized programs of the current era. The professional teacher of the 1980's will be one step removed from the day-to-day non-instructional routines so prevalent in the classrooms of the 1970's. These routines will be accomplished by the special aides, human and/or mechanical.

Competency Strategies -- The competent teacher will obtain and maintain competency through the coordination of three prime strategies:

. pre-service training.

. in-service training.

. supervision of instruction.

Pre-service Training -- All levels of the instructional staff will receive a formal course of training designed to build the competencies

required for the tasks to be accomplished at that level. The hierarchy of instructional levels may include:

. Learning Diagnostician (determines learning needs; in addition has had appropriate subject matter preparation): Ph. D. or equivalent.

. Master Teacher (prescription writer; in addition, has had appropriate subject matter preparation): M. Ed. or equivalent.

. Senior Teacher (teaching methods specialist; in addition, has had appropriate subject matter preparation): B. A. or equivalent.

. Assistant Teacher (subject matter specialist): A minimum of approximately two years of special training or equivalent.

In-Service Training -- "The master craftsman must sharpen his tools" provides the rationale for instituting an in-service program. Each instructional component of the school would conduct its own in-service programs so that this instruction would meet specific staff needs. These needs would be assessed by the individual staff members in concert with the leader (facilitator) of the instructional team. The strategy used for meeting these assessed needs would depend on existing circumstances and might include calling in experts, going to workshops, obtaining self-help via correspondence courses, and the like.

Supervision of Instruction -- This is a many-faceted consideration and includes:

. Instructional staff members becoming aware of the expectations or desired levels of competency commensurate with their respective position on the instructional team.

. Instructional staff members measuring themselves against levels of expectation discussed above, to determine expectation-performance discrepancies and to establish goals for improvement therein.

. Instructional officers and supervisors preparing themselves as sources of help for instructional staff members.

Master Teacher (prescription writer; in addition, has had appro-

priate subject matter preparation): M. Ed. or equivalent.

. Senior Teacher (teaching methods specialist; in addition, has had appropriate subject matter preparation): B. A. or equivalent.

. Assistant Teacher (subject matter specialist): A minimum of approximately two years of special training, or equivalent.

In-Service Training -- "The master craftsman must sharpen his tools" provides the rationale for instituting an in-service program. Each instructional component of the school would conduct its own in-service programs so that this instruction would meet specific staff needs. These needs would be assessed by the individual staff members in concert with the leader (facilitator) of the instructional team. The strategy used for meeting these assessed needs would depend on existing circumstances and might include calling in experts, going to workshops, obtaining self-help via correspondence courses, and the like.

Supervision of Instruction -- This is a many-faceted consideration and includes:

. Instructional staff members becoming aware of the expectations or desired levels of competency commensurate with their respective position on the instructional team.

. Instructional staff members measuring themselves against levels of expectation discussed above, to determine expectation-performance discrepancies and to establish goals for improvement therein.

. Instructional officers and supervisors preparing themselves as sources of help for instructional staff members.

. Instructional staff members periodically accounting to an instructional officer for their personal stewardship.

The Instructional Team -- "Masterful instruction by a team seldom just happens. It usually results from a set of carefully planned actions by well-prepared members of the team. It is not necessary that every member

of the instructional team have each and every skill required for good teaching, but a successful team must be able to collectively exhibit all skills pertinent to quality instruction.

When a student appears for instruction, he does bring along certain attributes that will aid in obtaining the desired learning. It is the responsibility of the instructional team members to ascertain these student entry-level skills. It will also be incumbent upon the team to measure day-to-day progress and to assess total achievement when the student leaves the course of instruction.

The implications of the above on the competencies of the team are many, and include an ability or obligation to:

- devise a variety of teaching techniques for instruction of any single concept.
- create and validate instructional objectives, plus revision of same based on evaluative feedback.
- construct and administer instructional diagnostic instruments.
- administer instruments for mapping the learning styles of students, and for mapping the teaching styles of the instructional team members.
- construct and administer achievement tests based on specific course learning objectives, and profile student accomplishments accordingly.
- synthesize data from counselor profiles and standardized tests to use as descriptors of student learning problems.
- write behavioral objectives that are organized into an instructional sequence.
- remain current on the state of utilitarian instructional methods in particular subject matter fields.
- diagnose and prescribe areas of self-improvement that will increase personal teaching effectiveness, and demonstrate a commitment to this type of effort.

entry-level skills. It will also be incumbent upon the team to measure day-to-day progress and to assess total achievement when the student leaves the course of instruction.

The implications of the above on the competencies of the team are many, and include an ability or obligation to:

- devise a variety of teaching techniques for instruction of any single concept.
- create and validate instructional objectives, plus revision of same based on evaluative feedback.
- construct and administer instructional diagnostic instruments.
- administer instruments for mapping the learning styles of students, and for mapping the teaching styles of the instructional team members.
- construct and administer achievement tests based on specific course learning objectives, and profile student accomplishments accordingly.
- synthesize data from counselor profiles and standardized tests to use as descriptors of student learning problems.
- write behavioral objectives that are organized into an instructional sequence.
- remain current on the state of utilitarian instructional methods in particular subject matter fields.
- diagnose and prescribe areas of self-improvement that will increase personal teaching effectiveness, and demonstrate a commitment to this type of effort.
- coordinate the efforts of the home and school in directing the student toward achievement of desired skills and behaviors. A regular part of the instructional function is to review a student's total program and progress with his/her parents.
- demonstrate organizational skills that relate to instructional

grouping, as well as the use of multimedia techniques in instruction.

- demonstrate skill in alternative methods of handling disciplinary problems, student hostility, and student frustration.
- instruct in "studentship" skills (How to learn is often as important as what one learns).
- provide a wide variety of instructional and motivational techniques. (The team shall demonstrate skill in instructional methods that include lectures, conferences, group study, practical exercises, and others.)
- demonstrate the ability and willingness to help students develop interpersonal skills.
- demonstrate the ability to evaluate effectiveness of instructional materials and resources.
- use and give instruction in the use of instructional hardware.
- define the relationship of the team to all support personnel in its facility.

In capsule form, it appears that future educational processes will be conducted by an instructional team; and that the members of this team must have the collective capability of ascertaining where any student is educationally, where this person would like to be, what capabilities the student has of achieving, and what educational tools the student already possesses. In addition, it will be necessary for the team to measure interim progress and to diagnose perodically the learning objectives or the skills that the sudent has attained. During this time, the student must also be given counsel and uidance regarding educational choices and their potential for success in terms of the student's motivations and abilities.

Accountability -- The public's demand for accountability will force reorganization and restructuring of the instructional team to an optimum

- provide a wide variety of instructional and motivational techniques. (The team shall demonstrate skill in instructional methods that include lectures, conferences, group study, practical exercises, and others.)
- demonstrate the ability and willingness to help students develop interpersonal skills.
- demonstrate the ability to evaluate effectiveness of instructional materials and resources.
- use and give instruction in the use of instructional hardware.
- define the relationship of the team to all support personnel in its facility.

In capsule form, it appears that future educational processes will be conducted by an instructional team; and that the members of this team must have the collective capability of ascertaining where any student is educationally, where this person would like to be, what capabilities the student has of achieving, and what educational tools the student already possesses. In addition, it will be necessary for the team to measure interim progress and to diagnose perodically the learning objectives or the skills that the sudent has attained. During this time, the student must also be given counsel and uidance regarding educational choices and their potential for success in terms of the student's motivations and abilities.

Accountability -- The public's demand for accountability will force reorganization and restructuring of the instructional team to an optimum cost-effective configuration. In the 1970's many instructional tasks which could have been done as well by much less skilled persons have been performed by professional teachers. Therefore, a more efficacious distribution of labor will be expected by the public in the 1980's. In terms of accountability, the schools' public will be much more literate, will

demand better communication of accountability and will generally have a more sophisticated attitude toward all facets of education. They will be more interested in the programs and processes of the school; and since the schools exist to serve these publics, they will make greater demands on the school in terms of cost-effective services.

'.5 On-Site Inspection of Facilities

This Report and Volume II, Section 3, detail the inspection of facilities made early in the planning stages of the Project. In addition to the sites described therein, a number of regional schooling facilities have been investigated.

The objective of the facilities portion of the SWEP effort was perceived to be one of "pre-specification". In terms of both the Project proposal and contractual restraints, SWEP was not commissioned to produce any designs for the final facilities and furnishings. These activities were to be post-SWEP architectural functions. However, in terms of such factors as final location and student population, it was conceived that the SWEP study would produce data or pre-specifications relative to building size and style with accompanying data relative to new versus renovated construction.

'.5.1 Facilities Research

The facilities research program began with the Project's Senior Engineer for Research providing the Staff with facilities concepts designed to stimulate related planning (See Volume II, Appendix 3.1). Concurrently, a two fold research plan was developed and implemented for projecting trends in facility designs (See Volume II, Appendix 3.2) and for determining the shortcomings that had been encountered in certain existing educational park facilities (See Volume II, Appendices 3.3 and 3.4). Of course, the required literature searches were performed in conjunction with these activities (See the selected biblio-

This Report and Volume II, Section 3, detail the inspection of facilities made early in the planning stages of the Project. In addition to the sites described therein, a number of regional schooling facilities have been investigated.

The objective of the facilities portion of the SWEP effort was perceived to be one of "pre-specification". In terms of both the Project proposal and contractual restraints, SWEP was not commissioned to produce any designs for the final facilities and furnishings. These activities were to be post-SWEP architectural functions. However, in terms of such factors as final location and student population, it was conceived that the SWEP study would produce data or pre-specifications relative to building size and style with accompanying data relative to new versus renovated construction.

2.3.1 Facilities Research

The facilities research program began with the Project's Senior Engineer for Research providing the Staff with facilities concepts designed to stimulate related planning (See VolumeII, Appendix 3.1). Concurrently, a two fold research plan was developed and implemented for projecting trends in facility designs (See Volume II, Appendix 3.2) and for determining the short-comings that had been encountered in certain existing educational park facilities (See Volume II, Appendices 3.3 and 3.4). Of course, the required literature searches were performed in conjunction with these activities (See the selected bibliography in Volume II, Section 3).

2.3.2 Related Facility Considerations and Models

During the foregoing activities, three factors had to be considered. First, circumstances had fortuitously provided some candidate locations and facilities across the Nation that could

influence SWEP and post-SWEP planning. These facilities were inspected and analyzed in terms of the projected educational park. (See Volume II, Appendices 3.3, 3.4 and 4.). Second and third, fossil fuel supply problems and concern for environmental impact were given special consideration. (See Volume II, Appendix 3.5). Concurrently, mathematical models were prepared from which SWEP designers could specify educational park utility services (See Volume II, Appendix 3.6).

2.5.3 Facilities Conclusions

Because actual construction of an educational park was precluded shortly after the Project got underway, facilities prespecifications were not generated for a specific site. However, the investigations that were performed did identify the cogent facilities factors (for details, See Volume II). The investigations revealed that the determinants for optimizing the final facilities design will best be effected at the time of the actual contracting for the facility (See Appendices 3.7 and 3.8 of Volume II).

2.6 Personal Interviews

Extensive personal interviews were conducted throughout the Project year. Section 5 of Volume II presents a summary log of most of the interviews conducted by the SWEP Staff during this time.

THREE DIMENSIONAL

MODEL

SECONDARY SCHOOL

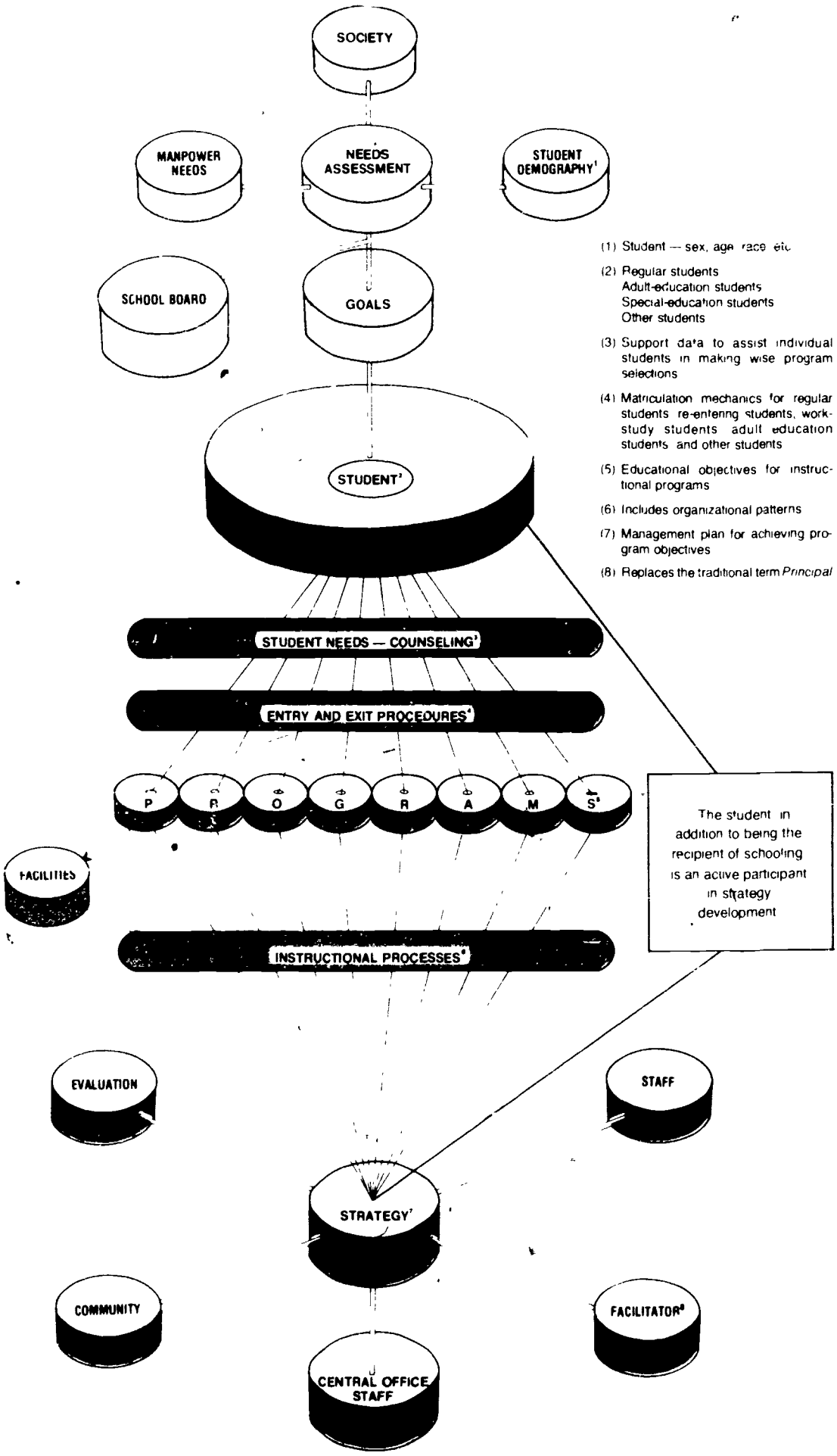
OF THE

FUTURE

"All education springs from some image of the future. If the image of the future held by a society is grossly inaccurate, its education system will betray its youth."

Alvin Toffler

MODEL FOR SECONDARY SCHOOLING OF THE FUTURE



3. The SWEP Model

This section first presents definitions and brief descriptors of the individual elements of the universal SWEP Model. By universal, it is meant that the Model is inherently flexible and could be applied to any urban school system in the Nation. Presented next are more detailed and technical descriptions for the functions of the elements within the Model, and the interrelationships between these elements.

The Model is finally applied to the hypothetical projection of a secondary school within the Dallas-Fort-Worth Metroplex. For this application, a set of Planning Specifications have been developed. These specifications are for use by any planners who wish to apply this universal Model to the actual development of a school in the future.

3.1 Definitions of the Elements of the SWEP Model

The SWEP Model of the secondary school of the 1980's represents a systems analysis approach to schooling (The Model's three-dimensional representation is shown on the preceding page). Definitions and descriptors used throughout this section were generally evolved by the Project Staff from analyses of the research data and from the survey of literature. Definitions of terms and descriptors used in the Model are as follows:

Society -- Society is the universal set from which the rationale for schooling and the functions of schooling are established. In the broadest sense, this societal set includes social classes, social groups, social systems, social environments, and the interactions implicit between all of these societal components.

Manpower Needs -- Manpower needs are the estimated employment opportunities existing for students served by the school.

Student Demography -- Student demography is the set of data relevant to the student population, such as number, ethnicity,

The Model is finally applied to the hypothetical projection of a secondary school within the Dallas-Fort-Worth Metroplex. For this application, a set of Planning Specifications have been developed. These specifications are for use by any planners who wish to apply this universal Model to the actual development of a school in the future.

3.1 Definitions of the Elements of the SWEP Model

The SWEP Model of the secondary school of the 1980's represents a systems analysis approach to schooling (The Model's three-dimensional representation is shown on the preceding page). Definitions and descriptors used throughout this section were generally evolved by the Project Staff from analyses of the research data and from the survey of literature. Definitions of terms and descriptors used in the Model are as follows:

Society -- Society is the universal set from which the rationale for schooling and the functions of schooling are established. In the broadest sense, this societal set includes social classes, social groups, social systems, social environments, and the interactions implicit between all of these societal components.

Manpower Needs -- Manpower needs are the estimated employment opportunities existing for students served by the school.

Student Demography -- Student demography is the set of data relevant to the student population, such as number, ethnicity, sex, socioeconomic factors, and residence sites.

Needs Assessment -- Needs assessment is the process used to determine discrepancies between the actual accomplishments of the school and the desired accomplishments.

School Board -- The school board is the lay authority for the school system.

Goals -- Goals are the ideals which the educational enterprise strives to achieve.

Student -- A student is any client of school services.

Student Needs and Counseling -- Counseling is the process which articulates general school goals with respect to individual student needs.

Entry and Exit Procedures -- Entry and exit procedures constitute the matriculation and separation processes for the school.

Programs -- Programs are the content, curricula, and objectives which match student needs and aspirations with educational goals.

Facilities -- Facilities are the physical environments in which schooling occurs.

Instructional Processes -- Instructional processes constitute the variety of learning schemes employed in the schooling process.

Strategy -- Strategy is the overall management plan for schooling.

Community -- The community is that subset of the society served by the school.

Evaluation -- Evaluation is the process by which quality and

Student Needs and Counseling -- Counseling is the process which articulates general school goals with respect to individual student needs.

Entry and Exit Procedures -- Entry and exit procedures constitute the matriculation and separation processes for the school.

Programs -- Programs are the content, curricula, and objectives which match student needs and aspirations with educational goals.

Facilities -- Facilities are the physical environments in which schooling occurs.

Instructional Processes -- Instructional processes constitute the variety of learning schemes employed in the schooling process.

Strategy -- Strategy is the overall management plan for schooling.

Community -- The community is that subset of the society served by the school.

Evaluation -- Evaluation is the process by which quality and extent of accomplishment is determined.

Staff -- Staff indicates all personnel employed to carry out the educational [illegible].

Facilitator -- The facilitator is the legally appointed leader of the school.

Central Office Staff -- The central office staff is the cadre of specialized personnel who provide expertise and services for the entire school system.

3.2 Technical Descriptions of Model Elements, Functions, and Interrelationships

The subsections which follow elaborate upon the elements of the Model. These elements are clustered for discussion purposes as follows: needs assessment cluster, student cluster, programs cluster, and strategy cluster.

Since this treatment is a description of a universal model, these subsections represent a synthesis of the Futurist Panel data, of the Delphi data, of the literature data, and of input from the SWEP Staff and consultants. As a result, descriptors used herein may differ in some manner from those of the Delphi respondents, the literature, or the Futurist Panel.

3.2.1 Needs Assessment Cluster (See the Model elements below and the yellow-indexed cluster of the Frontispiece). A short discussion of each of the elements of the needs assessment cluster follows.

Needs Assessment -- Needs assessment is the process which determines discrepancies between expectations and actual performance, and so it is the process used to establish a basis for the prioritization of educational goals. Needs assessment should be based upon input from a wide spectrum of societal substructures. Evaluation of manpower needs data and student demography data provide

3.2 Technical Descriptions of Model Elements, Functions, and Interrelationships

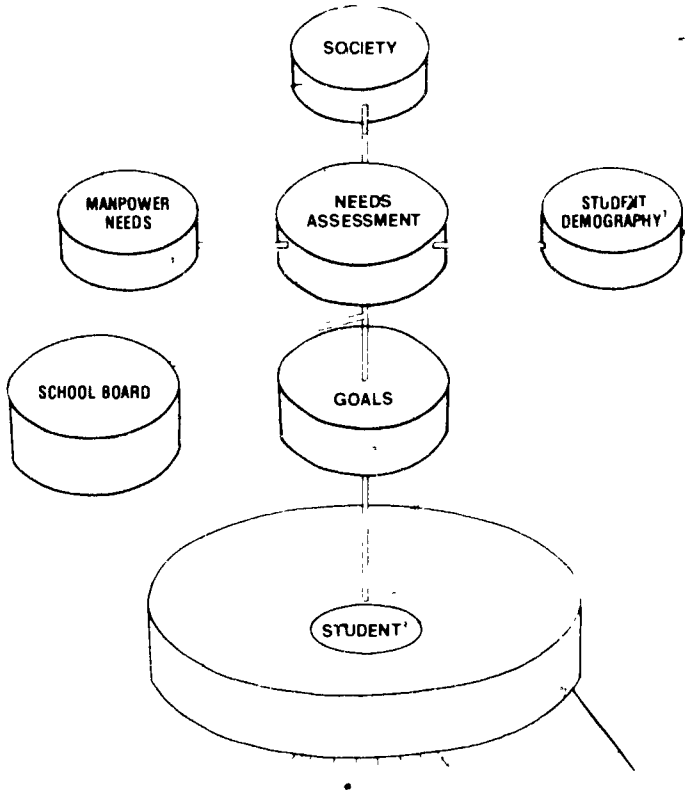
The subsections which follow elaborate upon the elements of the Model. These elements are clustered for discussion purposes as follows: needs assessment cluster, student cluster, programs cluster, and strategy cluster.

Since this treatment is a description of a universal model, these subsections represent a synthesis of the Futurist Panel data, of the Delphi data, of the literature data, and of input from the SWEP Staff and consultants. As a result, descriptors used herein may differ in some manner from those of the Delphi respondents, the literature, or the Futurist Panel.

3.2.1 Needs Assessment Cluster (See the Model elements below and the yellow-indexed cluster of the Frontispiece).

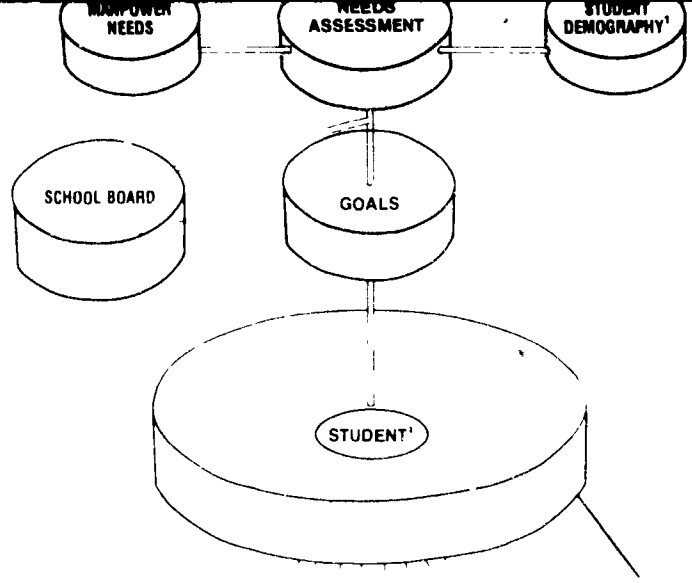
A short discussion of each of the elements of the needs assessment cluster follows.

Needs Assessment -- Needs assessment is the process which determines discrepancies between expectations and actual performance, and so it is the process used to establish a basis for the prioritization of educational goals. Needs assessment should be based upon input from a wide spectrum of societal substructures. Evaluation of manpower needs data and student demography data provide especially important input for this procedure of establishing goal priorities. In this cluster, the school board's function is to review the needs assessment, to establish educational priorities, to act as the lay authority for schooling strategy, and to serve as the public's legal



Society -- The society element is briefly described in terms of future technology, future population, future careers, future life styles, and future education. These descriptors of society are used because they are the same as those used to describe society in the research section of this report (See Section).

- Technology -- Technological advances are expected to continue to produce significant changes in society. For example, the future U.S. population should be as greatly influenced by laser and solid-state technology as the current population has been influenced by computers and television. Since all technology is based upon utilization of energy and material resources, changes in life styles and ethics



Society -- The society element is briefly described in terms of future technology, future population, future careers, future life styles, and future education. These descriptors of society are used because they are the same as those used to describe society in the research section of this report (See Section 2).

- Technology -- Technological advances are expected to continue to produce significant changes in society. For example, the future U.S. population should be as greatly influenced by laser and solid-state technology as the current population has been influenced by computers and television. Since all technology is based upon utilization of energy and material resources, changes in life styles and ethics will surely evolve because of dwindling supplies of each, coupled with the increased demands upon each by an expanding population. In addition, technology will add to the amount of leisure time available to future societies.

- Population -- The general population will increase slightly, with the greater percentage gains being experienced by senior citizens and minorities -- especially blacks. Assuming that sufficient energy to maintain suburbia and concomitant transportation are available, middle-class whites and affluent minorities will continue to move out of the densely populated urban centers and leave them inhabited mostly by the poor.
- Careers -- Automation will continue to give impetus to the transition of the work force from goods-producing careers to service-producing careers. Additional paraprofessional and technical roles will emerge in such fields as electronics, medicine, law, education, transportation, and social services. The need for additional workers will arise from such factors as:
  - the expected proportional increase of senior citizens in the population with the concomitant medical, hospital, social, and educational services needed.
  - a greater proportion of women and mothers with young children to be trained for entrance into the work force, and the concurrent demand for related educational services.
  - entrance into the schools at an earlier age, and the accompanying need for educational services.
  - increased numbers of child-care centers,

minorities will continue to move out of the densely populated urban centers and leave them inhabited mostly by the poor.

- Careers -- Automation will continue to give impetus to the transition of the work force from goods-producing careers to service-producing careers. Additional paraprofessional and technical roles will emerge in such fields as electronics, medicine, law, education, transportation, and social services. The need for additional workers will arise from such factors as:
  - the expected proportional increase of senior citizens in the population with the concomitant medical, hospital, social, and educational services needed.
  - a greater proportion of women and mothers with young children to be trained for entrance into the work force, and the concurrent demand for related educational services.
  - entrance into the schools at an earlier age, and the accompanying need for educational services.
  - increased numbers of child-care centers, with the necessary attendant services.
  - an expanded role in education by the federal government, and the necessary personnel for this implementation and administration.

the retraining of workers to pursue a second, or even a third, full-time career within a normal life span, and the consequent need for educational services.

o Life Styles -- Life styles will be characterized by a diminished stereotyping of both occupational and family roles. Society will continue to increase in complexity. A shorter work week, more leisure time, more tolerance of variant life styles, a higher population density, new products of advanced technology, and the opportunity for earlier retirement will modify current life styles. Dominance of the work ethic will continue, but will be challenged more and more.

Mental illness is expected to increase because of the problems inherent in a greater population density, continued environmental degradation, and increased societal complexity. Scarcity of fossil fuel energy and certain other material resources will probably cause drastic modifications of products and of transportation modes. Greater control of the [illegible] citizen will be exercised by the federal government, especially in the areas of [illegible] welfare, education, transportation, and land and resource uses.

[illegible] Education -- Education will be highly valued in the technocracy of the 1980's. [illegible] "careless", in the sense that [illegible] citizens [illegible] "from the cradle to the grave". [illegible] the school environment will [illegible] coping with the [illegible] [illegible] technocracy will be the universal [illegible] career and consumer education programs will provide job skills and consumer skills for students entering

family roles. Society will continue to increase in complexity. A shorter work week, more leisure time, more tolerance of variant life styles, a higher population density, new products of advanced technology, and the opportunity for earlier retirement will modify current life styles. Dominance of the work ethic will continue, but will be challenged more and more.

Mental illness is expected to increase because of the problems inherent in a greater population density, continued environmental degradation, and increased societal complexity. Scarcity of fossil fuel energy and certain other material resources will probably cause drastic modifications of products and of transportation modes. Greater control of the individual citizen will be exercised by the Federal government, especially in the areas of social welfare, education, transportation, and land and resource uses.

Education -- Education will be highly valued in the technocracy of the 1980's. Schooling will be "seamless", in the sense that curricula will be offered citizens virtually "from the cradle to the grave". Greater humanization of the school environment will occur. Basic skills and skills for coping with the personal pressures inherent in a complex technocracy will be the universal core of educational goals. Career and consumer education programs will provide job skills and consumer skills for students entering trades or entering post higher education. More degrees of career education and consumer education will take place at all levels of schooling.

[illegible]

will be stronger because of more leisure time, earlier retirement, more women in the work force, necessity for teaching new skills to workers who must be retrained, and more senior citizens. Total patronage of the public schools will be increased, principally by early childhood and adult education, but school enrollments K-12 will increase only slightly.

Cognitive and affective mapping techniques will help match teacher instructional styles with student learning styles. Such matching will encourage a wider variety of instructional modes, greater choices of instructional styles for students and teachers, more choices of programs for students, and a wider range of curriculum content.

Education will cost more. Instructional staff selection and retention practices will be much revised. Professional teacher roles will change significantly, as will those of professional administrators. Facilities will become more flexible and less centralized, with much schooling occurring outside the walls of the "school house".

Philosophically, educational systems will be flexible and choice-oriented. Both teachers and students will be required to make a wider variety of responsible choices, since schooling will be composed of a greater number of educational alternatives.

- Manpower Needs -- The manpower needs element in the Model represents the employment opportunities for students served by the school. Implicit in the element are:
  - that school programs should reflect the changing needs of the labor market and further provide bases for future projections of these needs.
  - that manpower needs will be communicated to students through an active counseling program focusing on such needs.
  - that cooperative educational programs between the schools and industry or commerce be based upon

instructional styles with student learning styles. Such matching will encourage a wider variety of instructional modes, greater choices of instructional styles for students and teachers, more choices of programs for students, and a wider range of curriculum content.

Education will cost more. Instructional staff selection and retention practices will be much revised. Professional teacher roles will change significantly, as will those of professional administrators. Facilities will become more flexible and less centralized, with much schooling occurring outside the walls of the "school house".

Philosophically, educational systems will be flexible and choice-oriented. Both teachers and students will be required to make a wider variety of responsible choices, since schooling will be composed of a greater number of educational alternatives.

- Manpower Needs -- The manpower needs element in the Model represents the employment opportunities for students served by the school. Implicit in the element are:
  - that school programs should reflect the changing needs of the labor market and further provide bases for future projections of these needs.
  - that manpower needs will be communicated to students through an active counseling program focusing on such needs.
  - that cooperative educational programs between the schools and industry or commerce be based upon future-focused evaluation of manpower needs.
- Student Demography -- The student demography element represents:
  - determination of students' vital statistics, such as sex, age, ethnicity, academic ability, and socio-economic status.
  - projections of future student population characteristics.

- acquisition of manpower needs data relative to special programs.

- School Board -- The school board, as the lay authority for the school system, assumes these principal responsibilities:
  - reviews the needs assessment data (input from all facets of school and society) and assigns educational priorities to the goals of the school system.
  - allocates the resources for accomplishment of the system's educational goals and objectives.
  - serves as the official monitor of the school system for the public.
  - provides procedures and/or climate conducive to the evaluation of educational programs, maintenance of self-renewal processes for successful programs, and timely elimination of nonproductive programs.
  - serves as a "sounding board" for special interest groups within the school community.
  - insures that the flexibility necessary for response to the changing social mores of the community is maintained.

- Goals -- Goals constitute the generalized ideals which provide direction for the school system. Goals are ultimately translated into educational objectives and these subsequently into programs. There exists an historic set of universal and perennial goals, but the board's role includes prioritizing these goals for the school system. Prioritization must be a continuous process in order to match school programs with the changing needs of society.

In this Model, the goals element interfaces with the student cluster element. Furthermore, the student element is tied

al priorities to the goals of the school system.

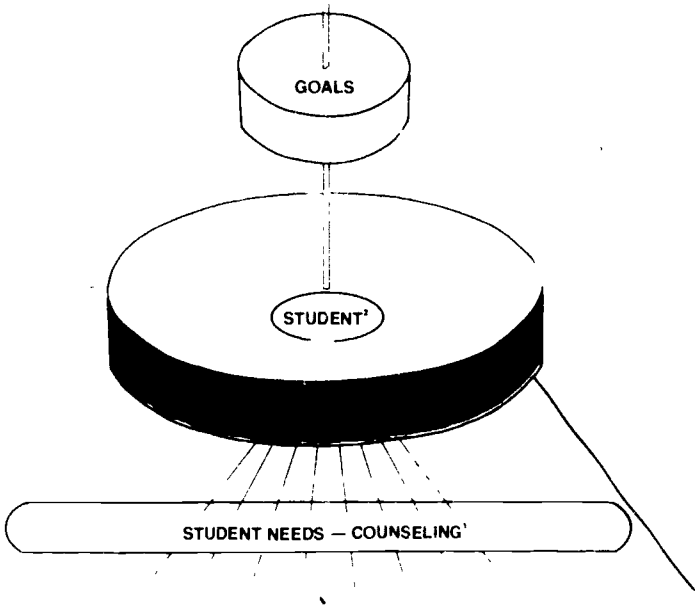
- o allocates the resources for accomplishment of the system's educational goals and objectives.
- o serves as the official monitor of the school system for the public.
- o provides procedures and/or climate conducive to the evaluation of educational programs, maintenance of self-renewal processes for successful programs. and timely elimination of nonproductive programs.
- o serves as a "sounding board" for special interest groups within the school community.
- o insures that the flexibility necessary for response to the changing social mores of the community is maintained.

o Goals -- Goals constitute the generalized ideals which provide direction for the school system. Goals are ultimately translated into educational objectives and these subsequently into programs. There exists an historic set of universal and perennial goals, but the board's role includes prioritizing these goals for the school system. Prioritization must be a continuous process, in order to match school programs with the changing needs of society.

In this Model, the goals element interfaces with the student cluster element. Furthermore, the student element is tied directly into the strategy element; and since strategy consists of the management plan for the school system, student input into the formulation of schooling goals is assured its rightful place.

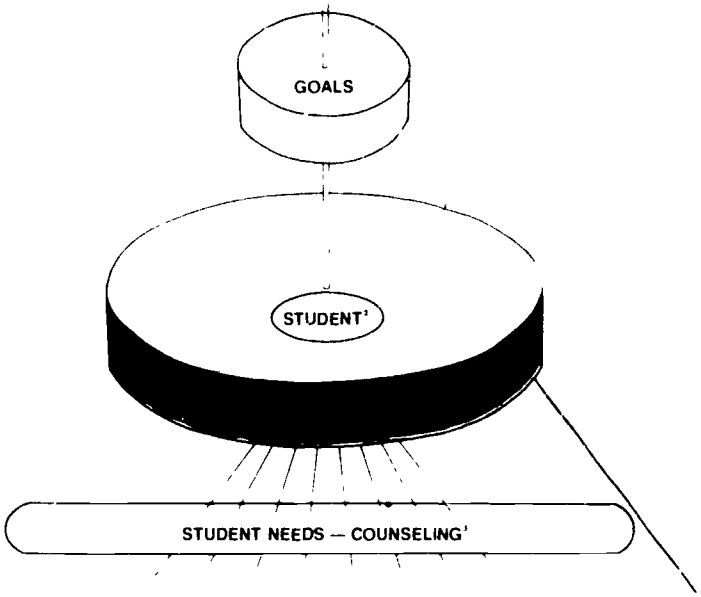
3.2.2 Student Cluster (See Model elements below and the green-indexed element in the Frontispiece).

The Model shows the student cluster (element) as the largest and most prominent of all the system components. This is because the student is the focal point of schooling.



The secondary student of the future is perceived by our Futurist authorities as having these general characteristics:

- begins school at the earliest age commensurate with educational readiness, and readiness will likely be redefined and better delineated as future education evolves into a crib-to-casket process.
- enters school with a much different frame of reference than did 1974's three-, four- and five-year-olds -- differences derived from such phenomena as:
  - -- television produced especially for children.



The secondary student of the future is perceived by our Futurist authorities as having these general characteristics:

- o begins school at the earliest age commensurate with educational readiness, and readiness will likely be redefined and better delineated as future education evolves into a crib-to-casket process.
- o enters school with a much different frame of reference than did 1974's three-, four- and five-year-olds -- differences derived from such phenomena as:
  - -- television produced especially for children.
  - -- earlier experiences with persons of different sub-cultures and socioeconomic classes.
  - -- freer home environment, in terms of self-expression.
- o enjoys considerably more legal rights in school, such as:
  - -- greater personal privacy.
  - -- greater autonomy of dress and expression.

-- access to personal records in school files, with the opportunity to appeal entries therein.

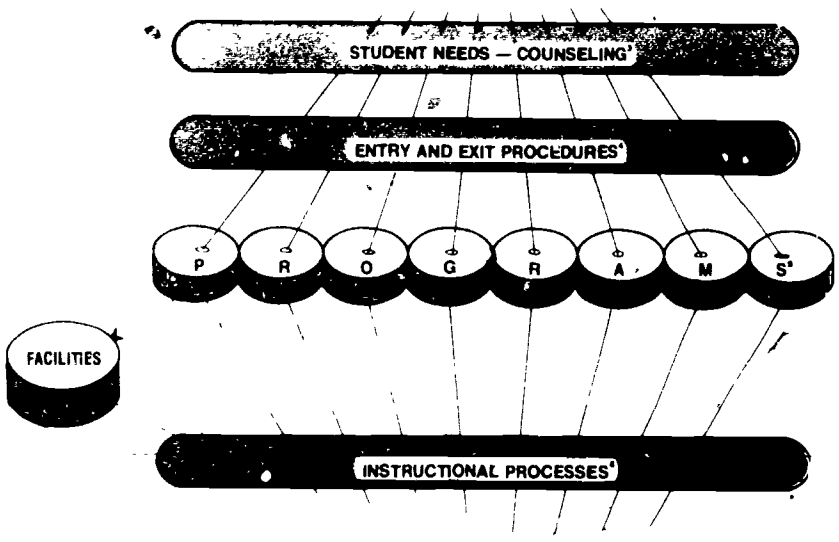
- comes from a family unit with fewer children than in families of the early 1970's.
- expects a greater voice in how the schools are managed.
- expects the right to make "nonfatal" educational mistakes. This means that sampling various educational programs will be expected and encouraged.
- expects teachers to be competent, empathetic, and to express high expectations.
- expects schools to provide adequate preparation for post-secondary academic studies, as well as for vocational, technical, and professional careers.
- feels less racial, sexual, religious, or similar kinds of prejudice pressures.
- expects scholastic credit for learning activities outside the school environment, including planned
  - -- travel experiences.
  - -- work experiences.
  - -- personal studies.
- expects school services regardless of such personal handicaps as language barriers, physical impediments, and the like.
- expects access to any school program, regardless of sex.
- expects courses in "family unit" living (as a continuation of such teaching from grade K). This curriculum should include:
  - -- sex education.
  - -- role of the family in society.
  - -- consumer education.
- feels prepared to make choices of many schooling options, such

- o expects the right to make "nonfatal" educational mistakes. This means that sampling various educational programs will be expected and encouraged.
- o expects teachers to be competent, empathetic, and to express high expectations.
- o expects schools to provide adequate preparation for post-secondary academic studies, as well as for vocational, technical, and professional careers.
- o feels less racial, sexual, religious, or similar kinds of prejudice pressures.
- o expects scholastic credit for learning activities outside the school environment, including planned
  - -- travel experiences.
  - -- work experiences.
  - -- personal studies.
- o expects school services regardless of such personal handicaps as language barriers, physical impediments, and the like.
- o expects access to any school program, regardless of sex.
- o expects courses in "family unit" living (as a continuation of such teaching from grade K). This curriculum should include:
  - -- sex education.
  - -- role of the family in society.
  - -- consumer education.
- o feels prepared to make choices of many schooling options, such as:
  - -- program choices
  - -- schedule choices
  - -- teacher choice
  - -- educational technologies and instructional processes [illegible] computer

retrieval systems, computer tutorial systems, and extensive softwares).

- expects to attend school past age 14 only by choice. (The age for compulsory school attendance will be lowered by law.)

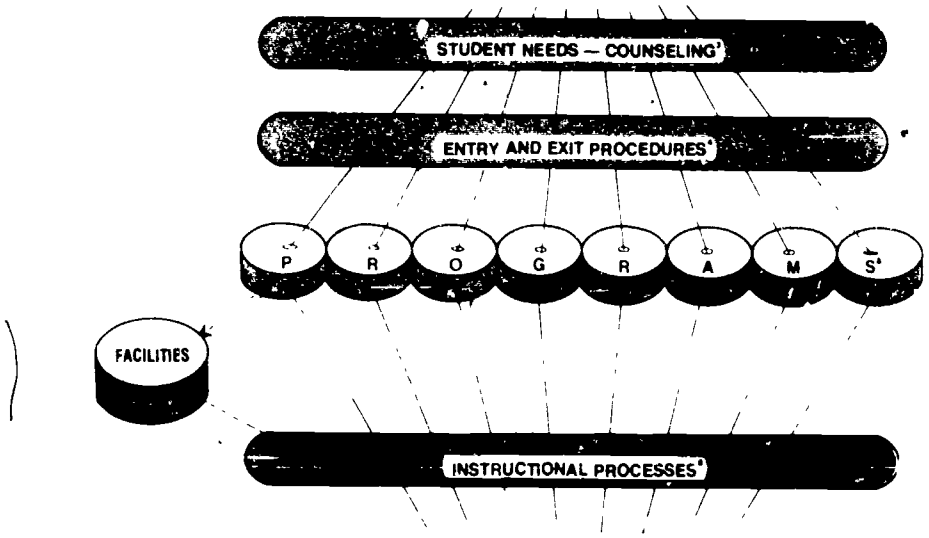
3.2.3 Programs Cluster (See Model elements below and the blue-indexed cluster of the Frontispiece).



As indicated in the cluster above, programs are derived directly from the student needs-counseling element. Entry and exit procedures incorporate open matriculation and open campus concepts. In every possible manner, facilities supplement and complement schooling, rather than dictate it. Programs and instructional processes are designed for optimal learning, and the matching of student learning styles with instructor teaching styles is one significant means to this end. Another significant idea is the self-matching of instructional processes for both teacher and student by encouraging their personal choices.

Student Needs -- Counseling -- Counseling will be both formal and informal, and will occur whenever opportune because faculty and staff will perceive counseling to be as integral and as important a schooling function as lecturing or management of learning centers. Counseling will

indexed cluster of the Frontispiece).



As indicated in the cluster above, programs are derived directly from the student needs-counseling element. Entry and exit procedures incorporate open matriculation and open campus concepts. In every possible manner, facilities supplement and complement schooling, rather than dictate it. Programs and instructional processes are designed for optimal learning, and the matching of student learning styles with instructor teaching styles is one significant means to this end. Another significant idea is the self-matching of instructional processes for both teacher and student by encouraging their personal choices.

Student Needs -- Counseling -- Counseling will be both formal and informal, and will occur whenever opportune because faculty and staff will perceive counseling to be as integral and as important a schooling function as lecturing or management of learning centers. Counseling will articulate between the goals of the school and the individual needs of the students.

Management policies will insure that adequate resources and personnel are available for effecti counseling. Counseling will service all students, including continuing education students.

Some salient aspects of future school counseling will be:

- o career planning, whereby students will be informed of the extensive educational opportunities both within the school site proper and away from the school site. Educational experiences away from the school site will be articulated with student desires and personal needs, but in terms of realistic education for future work and leisure patterns.
- o family unit and consumer planning.
- o student-centered counseling, whereby systematic referrals of students to specialists will be commonplace, and such referrals will include:
  - -- psychologists
  - -- psychiatrists
  - -- physicians
  - -- lay persons with special talents and credentials.
- o student-centered counseling, wherewith intensive focus will be placed upon means by which students can develop a positive self-image, a set of social skills, and a set of job skills as realistic preparation for a future life with dignity and respect. This would provide students with:
  - -- skills of self-evaluation.
  - -- moral and ethical decision-making confidence.
  - -- skills of authority evaluation.
- o public relations counseling to insure close and active liaison between parents, students, and counselors for the assessment of student needs and student achievement -- both for problem and non-problem students.

Counselors will be active participants in such activities as the development of school strategy and school programs. This will require

leisure patterns.

- o family unit and consumer planning.
- o student-centered counseling, whereby systematic referrals of students to specialists will be commonplace, and such referrals will include:
  - -- psychologists
  - -- psychiatrists
  - -- physicians
  - -- lay persons with special talents and credentials.
- o student-centered counseling, wherewith intensive focus will be placed upon means by which students can develop a positive self-image, a set of social skills, and a set of job skills as realistic preparation for a future life with dignity and respect. This would provide students with:
  - -- skills of self-evaluation.
  - -- moral and ethical decision-making confidence.
  - -- skills of authority evaluation.
- o public relations counseling to insure close and active liaison between parents, students, and counselors for the assessment of student needs and student achievement -- both for problem and non-problem students.

Counselors will be active participants in such activities as the development of school strategy and school programs. This will require close and catalytic contact with community leaders and community resource persons. The overall counseling mission will be to assist students to achieve their personal goals, to expand their awareness of themselves and their educational responsibilities, and to exercise their educational options. As an example, those students who enter high school with poor

or limited skills in reading will be counseled into programs which use instructional techniques not requiring reading skills, since the school and society will continue to place a high priority on these particular kinds of skills.

Secondary school completion requirements will change. Generally the required courses for all students will decrease; however, there will continue to be some universal requirements. But rather than issuing one type of high school diploma, schools will provide options for student achievement that include licensing, certifying, and granting differentiated kinds of diplomas. The program options resulting from differentiated high school completion requirements will necessitate better counseling procedures at all stages of schooling.

More adults will have to be counseled, since the school of the future will offer adults many programs in these several categories:

- basic education (reading and arithmetic).
- job training and job retraining.
- training for advancement in a present position
- life-enrichment programs, including recreational and social types of programs.

Classes for adults will be scheduled at convenient times rather than "always in night school". Adults will sometimes enroll in regular classes with secondary school-age students. Some programs will be designed for co-enrollment of students and parents, to enhance student-parent relationships.

Counseling will include services for adults who seek family and/or career counseling. Services for adults by other agencies (welfare, public health, and others) may be housed jointly with those of the school as schooling moves more and more out of the "school house" and into the greater community.

Intry and Exit Procedures -- Intry and exit procedures will fit the future school philosophy of flexibility, alternatives, and responsible

type of high school diploma, schools will provide options for student achievement that include licensing, certifying, and granting differentiated kinds of diplomas. The program options resulting from differentiated high school completion requirements will necessitate better counseling procedures at all stages of schooling.

More adults will have to be counseled, since the school of the future will offer adults many programs in these several categories:

- basic education (reading and arithmetic).
- job training and job retraining.
- training for advancement in a present position
- life-enrichment programs, including recreational and social types of programs.

Classes for adults will be scheduled at convenient times rather than "always in night school". Adults will sometimes enroll in regular classes with secondary school-age students. Some programs will be designed for co-enrollment of students and parents, to enhance student-parent relationships.

Counseling will include services for adults who seek family and/or career counseling. Services for adults by other agencies (welfare, public health, and others) may be housed jointly with those of the school as schooling moves more and more out of the "school house" and into the greater community.

Entry and Exit Procedures -- Entry and exit procedures will fit the future school philosophy of flexibility, alternatives, and responsible student choices. These procedures will be developed and maintained as a basic part of the strategy for school management. Cogent in these procedures will be:

- Low reduction of mandatory school age to 14 years.

- [illegible] recreation),
- [illegible], and similar kinds of academic options.
- Academic credit upon re-entry for what students have learned while away from the formal schooling system proper.
- Changes in traditional graduation requirements. A variety of exit points in terms of "accomplishment criteria" will be established for differentiated kinds of secondary school diplomas, certificates of completion, vocational licenses, and even special conferrals for specific school accomplishments.

Philosophically, the nature and application of entry and exit procedures will be determined by the basic nature of a student's program. But no matter what the program is, students (and parents) will be offered more scholastic openness, more alternatives in attendance and matriculation, and greater responsibility for the learning experience.

Programs As the Model indicates, programs are the content and curricula which tie student needs and aspirations to the goals of education. This sub-section is devoted to some generalizations concerning programs of the future.

Students can be expected to continue with such general basic studies as language arts, sciences, mathematics, foreign languages, music and fine arts, and physical education. There will continue to be a strong emphasis on the academic basic skills as a minimal education for all students, but "coping skills" will receive equal status.

Career education philosophy will permeate all areas of the curricula, and a wide variety of specific vocational studies will be available. Consumer awareness will also be widely stressed.

As a powerful force in human relations, the school will take advantage of the unique skills and experiences of minority, ethnic, and religious groups. Concurrently, by means of special multilingual and multicultural

established for differentiated kinds of secondary school diplomas, certificates of completion, vocational licenses, and even special conferrals for specific school accomplishments.

Philosophically, the nature and application of entry and exit procedures will be determined by the basic nature of a student's program. But no matter what the program is, students (and parents) will be offered more scholastic openness, more alternatives in attendance and matriculation, and greater responsibility for the learning experience.

Programs As the Model indicates, programs are the content and curricula which tie student needs and aspirations to the goals of education. This sub-section is devoted to some generalizations concerning programs of the future.

Students can be expected to continue with such general basic studies as language arts, sciences, mathematics, foreign languages, music and fine arts, and physical education. There will continue to be a strong emphasis on the academic basic skills as a minimal education for all students, but "coping skills" will receive equal status.

Career education philosophy will permeate all areas of the curricula, and a wide variety of specific vocational studies will be available. Consumer awareness will also be widely stressed.

As a powerful force in human relations, the school will take advantage of the unique skills and experiences of minority, ethnic, and religious groups. Concurrently, by means of special multilingual and multicultural programs, the school will become a leading social force working for the elimination of societal injustices.

Global studies will be emphasized strongly. Such issues as arms, treaties, armament, multinational commerce, population growth, natural resources management, energy shortages, and conservation will continue to increase in magnitude and in concern.

Ecological studies will become paramount, since mankind's continued existence has been threatened by a very considerable mismanagement of the environment. Students will become involved in community conservation programs stressing expendable resources management, energy management, reclamation of materials, requisites for adequate food supplies, protection from water and air and noise pollution, outdoor recreation, and similar kinds of community related programs.

School objectives will also place a high priority on "coping skills" programs preparing students to achieve a future-focused role image compatible with their abilities, needs, aspirations, and motivations. Such programs will stress the student's potential in the world of work, clarification of personal morality and ethics within the society, awareness of aesthetic values, and a fundamental understanding of the differing roles of producers and consumers in a complex technocracy.

Special programs and modifications of regular programs will exist to meet the unique needs of special students, e.g., nonconformists, handicapped, and gifted. Special programs will also exist to incorporate adults into regular day classes, into parent-child combination classes, and into other programs designed to optimally integrate the school with a diversity of student types.

The school will utilize management procedures that assure self-renewal of successful programs, emergency of new programs, and elimination or revision of unsuccessful programs. The administrative climate will foster continuing trials of improved ways to accomplish the schooling function. Ideas will be encouraged to "float to the top" for analysis, review, and appropriate action.

Options within all programs will facilitate extensive personalization of learning activities, particularly to the extent that students will receive academic credit for appropriate outside activities. Such activities might include political campaign work, community projects, student enter-

of community related programs.

School objectives will also place a high priority on "coping skills" programs preparing students to achieve a future-focused role image compatible with their abilities, needs, aspirations, and motivations. Such programs will stress the student's potential in the world of work, clarification of personal morality and ethics within the society, awareness of aesthetic values, and a fundamental understanding of the differing roles of producers and consumers in a complex technocracy.

Special programs and modifications of regular programs will exist to meet the unique needs of special students, e.g., nonconformists, handicapped, and gifted. Special programs will also exist to incorporate adults into regular day classes, into parent-child combination classes, and into other programs designed to optimally integrate the school with a diversity of student types.

The school will utilize management procedures that assure self-renewal of successful programs, emergency of new programs, and elimination or revision of unsuccessful programs. The administrative climate will foster continuing trials of improved ways to accomplish the schooling function. Ideas will be encouraged to "float to the top" for analysis, review, and appropriate action.

Options within all programs will facilitate extensive personalization of learning activities, particularly to the extent that students will receive academic credit for appropriate outside activities. Such activities might include political campaign work, community projects, student enterprises, and other kinds of real-life learning experiences

Facilities -- Facilities take on a more inclusive meaning than that of the conventional school site with classroom buildings. Facilities, for purposes of the school of the future, consist of the physical environment wherein and wherever schooling takes place.

The historic pattern of new school construction may be replaced by

one of utilization of any available community facility to meet schooling needs. For example, theaters and music centers, commercial and industrial buildings, governmental sites, public museums, community agencies, park or recreation sites, and the home are all viable prospects within the broad scope of futuristic school facilities.

New construction will be designed for multiprogram use and to accommodate diverse kinds of instructional processes. This means instructional housing will be flexible and easily rearranged upon short notice. Some construction will even be in the form of transportable units, movable from site to site as the need arises. Other construction will include "instant" inflatables and temporary "geodesics". In all cases, the facility design will be intended to constrain the schooling process as little as possible.

Established school facilities will become community learning centers and will operate 14 - 16 hours daily. Certain school facilities will be constructed for joint use by such school-related agencies as departments of recreation, health, social welfare, and child care.

Instructional Processes -- The school programs will be constituted of a variety of teaching-learning schemes, called instructional processes. The student-choice and teacher-choice orientation of instructional processes will assure a "best fit" between teaching styles and student learning strengths.

While a few teachers may be able to utilize all instructional methods in optimum fashion, school philosophy and instructional team functions will encourage teachers to elect the methods they can best handle. Some instructional methods will include:

- small-group instruction, led by teachers who are skilled in small-group dynamics.
- lectures, by instructors who demonstrate ability in speaking for group edification.
- large-group instruction, managed by persons particularly

housing will be flexible and easily rearranged upon short notice. Some construction will even be in the form of transportable units, movable from site to site as the need arises. Other construction will include "instant" inflatables and temporary "geodesics". In all cases, the facility design will be intended to constrain the schooling process as little as possible.

Established school facilities will become community learning centers and will operate 14 - 16 hours daily. Certain school facilities will be constructed for joint use by such school-related agencies as departments of recreation, health, social welfare, and child care.

Instructional Processes -- The school programs will be constituted of a variety of teaching-learning schemes, called instructional processes. The student-choice and teacher-choice orientation of instructional processes will assure a "best fit" between teaching styles and student learning strengths.

While a few teachers may be able to utilize all instructional methods in optimum fashion, school philosophy and instructional team functions will encourage teachers to elect the methods they can best handle. Some instructional methods will include:

- small-group instruction, led by teachers who are skilled in small-group dynamics.
- lectures, by instructors who demonstrate ability in speaking for group edification.
- large-group instruction, managed by persons particularly skilled and interested in this technique.
- laboratory instruction, by laboratory specialists and technicians.
- multimedia instruction, guided by teachers with media expertise.

- team teaching, by teachers who are skilled in this cooperative pedagogical approach.
- teaching partnerships, between skilled teachers who have complementary interests.
- work-study processes, carefully monitored by knowledgeable school personnel.
- independent study, guided by teachers with expertise and experience in this method.
- student-peer tutoring, supervised by teachers skilled in such management.
- correspondence courses, managed by teachers with technical abilities in this method.
- scientific-type research, supervised by teachers with backgrounds in appropriate research fields.

Some instructional methods used sparingly in the 1970's will enjoy wider usage in the future. These methods include:

- computer-assisted instruction, for students with compatible learning styles.
- year-around school operation, for students desiring this.
- variable time schedules, with students on personalized combinations of class hours and days (Open campus is implicit in this method).
- student-operated enterprises, providing actual products and services for "real-life" kinds of learning experiences.
- master-level criteria for basic skills courses.
- a "zero-reject" method as an alternative mode to the historic grading system based upon a normal grade distribution and concomitant F's. This criterion-based alternative system will be based upon diagnosis, followed by individualized corrective studies for students below proper

- independent study, guided by teachers with expertise and experience in this method.
- student peer tutoring, supervised by teachers skilled in such management.
- correspondence courses, managed by teachers with technical abilities in this method.
- scientific-type research, supervised by teachers with backgrounds in appropriate research fields.

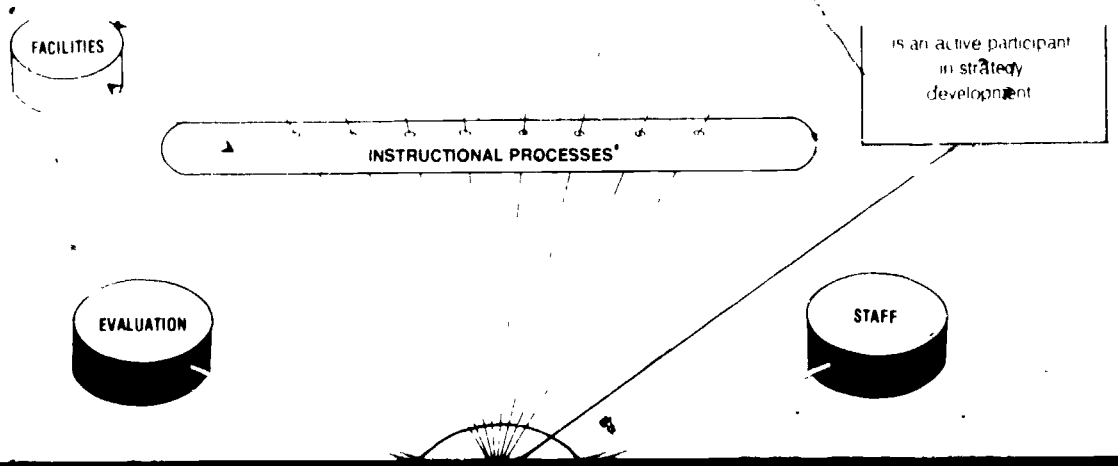
Some instructional methods used sparingly in the 1970's will enjoy wider usage in the future. These methods include:

- computer-assisted instruction, for students with compatible learning styles.
- year-around school operation, for students desiring this.
- variable time schedules, with students on personalized combinations of class hours and days (Open campus is implicit in this method).
- student-operated enterprises, providing actual products and services for "real-life" kinds of learning experiences.
- mastery-level criteria for basic skills courses.
- a "zero-reject" method as an alternative mode to the historic grading system based upon a normal grade distribution and concomitant F's. This criterion-based alternative system will be based upon diagnosis, followed by individualized corrective studies for students below proper accomplishment levels. Incorporated into this system will be the granting of academic credit for knowledge and experiences gained away from regular school programs.
- wider application of techniques for the determination of individual student needs, abilities, aspirations, and

motivations, as well as for the matching of all these with compatible teaching styles.

- educational travel, with specialists in travel opportunities supervising pre-planned experiences.
- television-centered learning for students who respond well to this medium (cable TV, closed-circuit educational channels, TV cassette courses, two-way TV instructional systems, etc.).
- utilization of a wide variety of available community experts as resource people.
- utilization of extensive educational data banks with storage and retrieval systems containing pertinent student records, governmental agency data, and other relevant information.
- extensive use of longer field trips (small-group "educational excursions" of a few days or several weeks duration).
- peer group instruction, closely supervised by specialists in group interaction.
- simulations and "teaching games" strategies for those students with a proclivity for these methods.

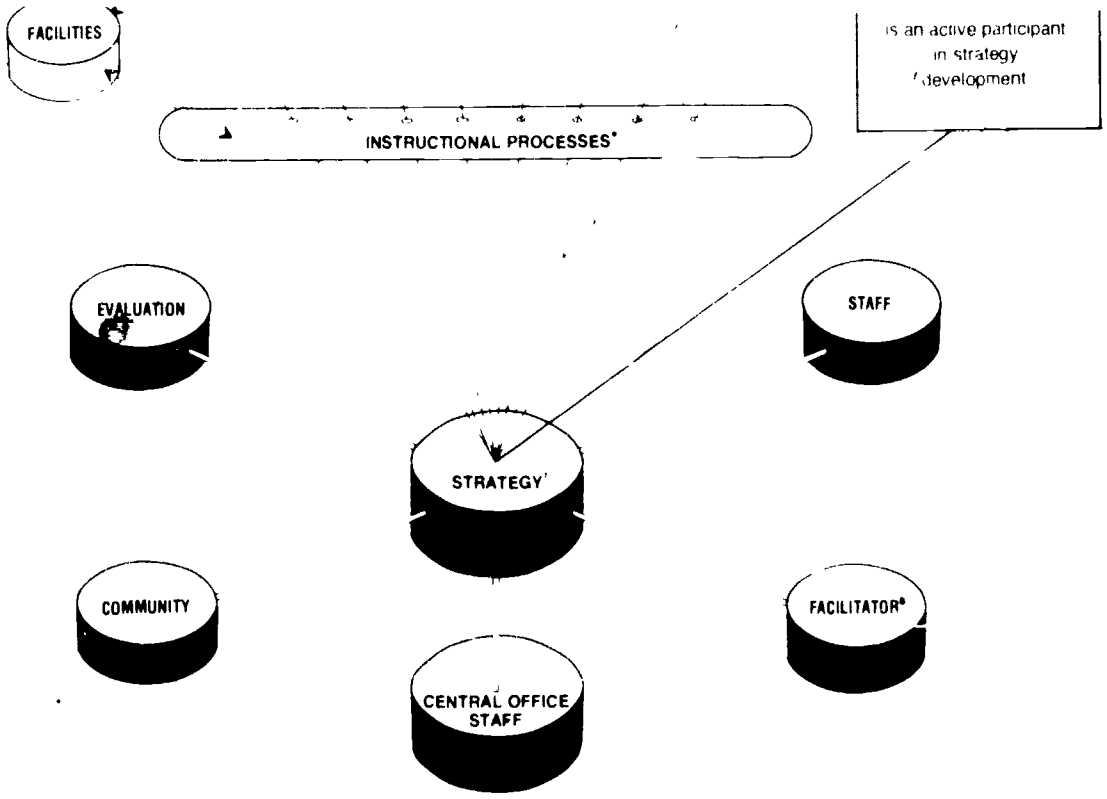
3.2.4 Strategy Cluster (See Model elements below and the red-indexed cluster in the Frontispiece).



systems, etc.).

- o utilization of a wide variety of available community experts as resource people.
- o utilization of extensive educational data banks with storage and retrieval systems containing pertinent student records, governmental agency data, and other relevant information.
- o extensive use of longer field trips (small-group "educational excursions" of a few days or several weeks duration).
- o peer group instruction, closely supervised by specialists in group interaction.
- o simulations and "teaching games" strategies for those students with a proclivity for these methods.

5.2.4 Strategy Cluster (See Model elements below and the red-indexed cluster in the Frontispiece).



Strategy -- Strategy is defined as the overall management plan for schooling. Strategy will be developed, implemented, and monitored by means of cooperative processes involving the students, parents, other community persons, school staff, school facilitators, evaluation teams, and the central office staff. Strategy will be concerned with goals, objectives, student counseling, entry and exit details, programs, instructional processes, facilities, staffing patterns, and evaluation.

The Planning Group (a subset of the Strategy element) will use as many kinds of data as possible in strategy development. These data will include societal goals prioritized by the school board, expectations of the local school community, a input from students and staff.

Positive public relations are considered essential for successful school operation. Strategy includes incorporating public relations into the management plan. Because the Model is projected as a continuation of elementary and middle school programs of similar quality and philosophy, included in strategy are processes which coordinate and articulate all strata and subgroups of the school system (such as early childhood, kindergarten, intermediate, middle, junior high, senior high, health services, media services, etc.)

Community --The educational community is defined as that portion of society served by the school. Input from the community plays a vital role in strategy development. Such input is derived from as many sources as possible and serves these principal functions:

- keeps the community informed of school events and involves the community in the decision-making processes that concern educational management.
- establishes a base of community support for programs and instructional processes, meanwhile giving assurance that the school does exist to serve the community.
- eases the likelihood of financial support of new programs, new instructional processes, bond issues,

tional processes, facilities, staffing patterns, and evaluation.

The Planning Group (a subset of the Strategy element) will use as many kinds of data as possible in strategy development. These data will include societal goals prioritized by the school board, expectations of the local school community, and input from students and staff.

Positive public relations are considered essential for successful school operation. Strategy includes incorporating public relations into the management plan. Because the Model is projected as a continuation of elementary and middle school programs of similar quality and philosophy, included in strategy are processes which coordinate and articulate all strata and subgroups of the school system (such as early childhood, kindergarten, intermediate, middle, junior high, senior high, health services, media services, etc.)

Community --The educational community is defined as that portion of society served by the school. Input from the community plays a vital role in strategy development. Such input is derived from as many sources as possible and serves these principal functions:

- keeps the community informed of school events and involves the community in the decision-making processes that concern educational management.
- establishes a base of community support for programs and instructional processes, meanwhile giving assurance that the school does exist to serve the community.
- senses the likelihood of financial support of new programs, new instructional processes, bond issues, and such.
- involves as many patrons and parents in the instructional processes as is possible.

Evaluation -- Evaluation is the process by which the quality and/or quantity of educational accomplishment is measured. The thrust of this process is determined through strategy development and its general purpose is to improve the accomplishment of designated schooling functions.

Evaluation must be made as nonthreatening to staff and to students as is possible. Its basic purpose is for the improvement of the learning process. The evaluation function will consist of self-evaluation by students, plus evaluation by staff and other school personnel in coordination with special evaluators within the school system. In addition, audit of the internal evaluation will be conducted periodically by external auditors so as to insure the validity and reliability of the evaluation functions.

Two principal evaluatory criteria will be:

1) How well does this person/program draw and retain students, employing only techniques of educational enhancement?

2) How well do the activities and efforts of this person/program foster and promote a viable school system?

Evaluation will reflect a risk-oriented philosophy. Ideas of apparent worth will be considered and implemented without statistical research as a necessary prerequisite, and evaluation will subsequently recognize and compensate for these kinds of schooling endeavors.

Teachers will not feel threatened if they are not innovative. Many teachers and students will be most comfortable and productive in the traditional single classroom atmosphere. They will constitute a necessary and respected component of the schooling effort.

Staff -- The staff includes all personnel carrying out the educational mission. [illegible], a more apt title than staff would be instructional team. In capsule form, it appears that future educational successes will be effected by an instructional team having the capability of ascertaining where any student would like to be, what capabilities the-

as is possible. Its basic purpose is for the improvement of the learning process. The evaluation function will consist of self-evaluation by students, plus evaluation by staff and other school personnel in coordination with special evaluators within the school system. In addition, audit of the internal evaluation will be conducted periodically by external auditors so as to insure the validity and reliability of the evaluation functions.

Two principal evaluatory criteria will be:

1) How well does this person/program draw and retain students, employing only techniques of educational enhancement?

2) How well do the activities and efforts of this person/program foster and promote a viable school system?

Evaluation will reflect a risk-oriented philosophy. Ideas of apparent worth will be considered and implemented without statistical research as a necessary prerequisite, and evaluation will subsequently recognize and compensate for these kinds of schooling endeavors.

Teachers will not feel threatened if they are not innovative. Many teachers and students will be most comfortable and productive in the traditional single classroom atmosphere. They will constitute a necessary and appreciated component of the schooling effort.

Staff -- The staff includes all personnel carrying out the educational mission. For this model, more apt title than staff would be instructional team*. In capsule form, it appears that future educational processes will be effected by an instructional team having the capability of ascertaining where any student would like to be, what capabilities the student has for achieving personal desires and goals, writing an appropriate prescription for the student in terms of specific learning strengths or problems, and then criteria teacher teaching-student learning styles with instructional processes and programs for optimum results.

* The reader is reminded that "instructional team" and "team teaching" are not the same.

Most of the routine schooling duties will be accomplished by specially trained paraprofessionals. As a result, tomorrow's teachers will have more time and opportunity to interact intimately with students in those kinds of optimal learning situations which require professional valuing and skills of highest order. Because the term student is used in its broadest sense, there will be teacher specialists trained in the education of many kinds of special students.

Facilitator -- The facilitator is the legally appointed leader of the school. As such, competency and effectiveness in the following items are requisites:

- o humanistic leadership qualities.
- o leadership strategies in the areas of educational improvement and innovation.
- o proper management strategies for a variety of possible pedagogical approaches, including differentiated staffing.
- o group processes techniques for expediting "committee type" tasks.
- o communication with people of various ages, sex, ethnicity, and special interests within the school community. This includes sensitiveness to the changing needs of school, society and community.
- o awareness of trends in educational processes and curricula.
- o evaluative techniques, and their uses in the decision-making process.

Central Office Staff -- The central office staff is the cadre of personnel who provide expertise and services to the entire school system. Some of the functions and responsibilities of the central office staff are to:

- o articulate between the general goals of the educational

education of many kinds of special students.

Facilitator -- The facilitator is the legally appointed leader of the school. As such, competency and effectiveness in the following items are requisites:

- o humanistic leadership qualities.
- o leadership strategies in the areas of educational improvement and innovation.
- o proper management strategies for a variety of possible pedagogical approaches, including differentiated staffing.
- o group processes techniques for expediting "committee type" tasks.
- o communication with people of various ages, sex, ethnicity, and special interests within the school community. This includes sensitiveness to the changing needs of school, society and community.
- o awareness of trends in educational processes and curricula.
- o evaluative techniques, and their uses in the decision-making process.

Central Office Staff -- The central office staff is the cadre of personnel who provide expertise and services to the entire school system. Some of the functions and responsibilities of the central office staff are to:

- o articulate between the general goals of the educational system and the specific immediate goals of local schools.
- o furnish legal assistance to the local school staff.
- o provide Planning Group strategies.
- o administer funds and provide institutional services to the local school staff.

- maintain liaison between the school board and the local school staff.
- maintain a climate of trust and confidence at all times conducive to improvement and effectiveness of the local school staff.

3.3 Application of the SWEP Model to a Metroplex Secondary School

Because circumstances beyond the control of the Project Staff precluded actual application of the Model to the anticipated Skyline West Educational Park, the Model was applied instead to a hypothetical Metroplex site. This section describes this application of the universal SWEP Model to the creation of a hypothetical secondary school, hereafter referred to as SWEP-H. The purpose of this application exercise was threefold:

(1) to test the Model and its Planning Specifications,

(2) to serve as a possible guide for other metropolitan school system planners, and

(3) to provide concepts for future schooling within the Metroplex itself.

In this test of the Model's logic and applicability, SWEP-H was hypothesized as a comprehensive secondary school designed to serve the special needs of unique students within the Dallas-Fort Worth Metroplex (Standard Metropolitan Statistical Areas). The Planning Specifications used included: needs assessment; legal, political and financial constraints; site and facilities; goals and programs; instructional processes and staff; and strategy and evaluation.

3.3.1 Needs Assessment Planning Specification

The first Planning Specification to be considered is that of needs assessment. Assessment of schooling needs can be accomplished in a number of ways, but essentially what are

precluded actual application of the Model to the anticipated Skyline West Educational Park, the Model was applied instead to a hypothetical Metroplex site. This section describes this application of the universal SWEP Model to the creation of a hypothetical secondary school, hereafter referred to as SWEP-H. The purpose of this application exercise was threefold:

(1) to test the Model and its Planning Specifications,

(2) to serve as a possible guide for other metropolitan school system planners, and

(3) to provide concepts for future schooling within the Metroplex itself.

In this test of the Model's logic and applicability, SWEP-H was hypothesized as a comprehensive secondary school designed to serve the special needs of unique students within the Dallas-Fort Worth Metroplex (Standard Metropolitan Statistical Areas). The Planning Specifications used included: needs assessment; legal, political and financial constraints; site and facilities; goals and programs; instructional processes and staff; and strategy and evaluation.

3.3.1 Needs Assessment Planning Specification

The first Planning Specification to be considered is that of needs assessment. Assessment of schooling needs can be accomplished in a number of ways, but essentially what are determined are the manpower market data, student demographic data, and data from which schooling goals can be inferred.

It will be assumed that each school district participating in the multidistrict SWEP-H school has performed a needs assessment and has

determined which communal needs exist. This particular needs assessment is an evaluation of current student-community data, plus a projection of future educational needs in terms of goals and objectives. For SWEP-H, the focus of the needs assessment begins with the Metroplex and is then widened to include the National and international scenes.

3.3.2 Legal, Political and Financial Planning Specification

Multidistrict school construction, operation, and maintenance require precise contractual agreements between school districts. In addition, many such multidistrict missions may even require special legislative dispensations. In any case, the legalities of such joint ventures must be duly considered as constraints. The reader is referred to Volume II*, Appendix 5, for a more detailed discussion of legal and political considerations, including the origin and nature of such considerations for planning the Project-resultant school and alternative strategies for dealing with these considerations.

As pointed out in the research data (Volume II, Appendix 5) there exists an almost limitless array of strategies, mechanisms, and arrangements that might be devised and/or included in a plan for a Project-resultant school involving two or more school districts; but almost every such arrangement or mechanism that might be selected would, it seems, entail one or more political and/or legal difficulties or constraints requiring advance recognition and some effort for removal or modification. In the detailed discussion of Volume II there are presented some of the "most likely" strategies and mechanisms that might be employed by participating districts for cooperative or joint establishment and/or operation of a Project-resultant school, along with an analysis of legal** and/or political*** constraints inherent to each such strategy or arrangement, and recommendations for the removal or amelioration of the effects

tenance require precise contractual agreements between school districts. In addition, many such multidistrict missions may even require special legislative dispensations. In any case, the legalities of such joint ventures must be duly considered as constraints. The reader is referred to Volume II*, Appendix 5, for a more detailed discussion of legal and political considerations, including the origin and nature of such considerations for planning the Project-resultant school and alternative strategies for dealing with these considerations.

As pointed out in the research data (Volume II, Appendix 5) there exists an almost limitless array of strategies, mechanisms, and arrangements that might be devised and/or included in a plan for a Project-resultant school involving two or more school districts; but almost every such arrangement or mechanism that might be selected would, it seems, entail one or more political and/or legal difficulties or constraints requiring advance recognition and some effort for removal or modification. In the detailed discussion of Volume II there are presented some of the "most likely" strategies and mechanisms that might be employed by participating districts for cooperative or joint establishment and/or operation of a Project-resultant school, along with an analysis of legal** and/or political*** constraints inherent to each such strategy or arrangement, and recommendations for the removal or amelioration of the effects

---

* Volume II is an assemblage of detailed research data considered to be of interest to a select few; therefore, the reader is reminded that it is available at cost from the Project Director.

** Including those arising from both statutory and juridic state law, or from the lack of either statutory provision or judicial precedent, or both.

*** "Political" as used in this presentation excludes the involvement of party or narrow partisan politics, but rather refers to decision making (or the acceptance of decisions) by the district body politic, the citizens of the school district and/or their elected representatives (the Board of School Trustees).

of such constraints. No attempt is made in this discussion to promote the desirability of the establishment and/or operation of a multi-district school, but rather to present an analysis that may be helpful to those officials who will have already tentatively decided that such a school would be desirable, provided a mutually satisfactory modus operandi can be found for bringing it into existence and for assuring its operation, and have then reached the stage of identifying and weighing possible and available strategies and arrangements as a basis for a final joint decision to proceed.

In Volume II, the feasibility of two principal strategies for multi-district schools is discussed; namely, consolidation of school districts, and cooperative arrangements between school districts. Also the following aspects of consolidation are treated:

(a) complete county-wide consolidation;

(b) consolidation of a central-city district with one or more contiguous, smaller districts; and

(c) partial or "layered" consolidation of districts.

In Volume II, the following cooperative arrangements are discussed:

(a) two or more school districts jointly providing and operating entirely within the borders of one of the districts all of the specialized educational programs/services needed for certain categories of special-need pupils who reside within any and all of the cooperating districts, and for which this purpose a facility would be jointly provided either through new construction, or the renovation and modification of an existing structure not needed otherwise by the "receiving district", and with a general agreement for the participating districts to each bear a pro rata part of the cost of the enterprise based on the proportion of the total pupil enrollment originating

and have then reached the stage of identifying and weighing possible and available strategies and arrangements as a basis for a final joint decision to proceed.

In Volume II, the feasibility of two principal strategies for multi-district schools is discussed; namely, consolidation of school districts, and cooperative arrangements between school districts. Also the following aspects of consolidation are treated:

(a) complete county-wide consolidation;

(b) consolidation of a central-city district with one or more contiguous, smaller districts; and

(c) partial or "layered" consolidation of districts.

In Volume II, the following cooperative arrangements are discussed:

(a) two or more school districts jointly providing and operating entirely within the borders of one of the districts all of the specialized educational programs/services needed for certain categories of special-need pupils who reside within any and all of the cooperating districts, and for which this purpose a facility would be jointly provided either through new construction, or the renovation and modification of an existing structure not needed otherwise by the "receiving district", and with a general agreement for the participating districts to each bear a pro rata part of the cost of the enterprise based on the proportion of the total pupil enrollment originating in each of the "sending districts"; and

(b) several school districts jointly providing and operating a galaxy of the same sort of specialized educational programs and services as described under the first variation of the cooperative-arrangement strategy, but to distribute the separate constituent specialized programs and the

facilities needed for such programs among the various participating districts, with each district providing the facilities, staff, and management for the specialized programs allocated to it. Under such an arrangement one district might provide all of the programs (in one facility provided by and within that district) needed for all of the blind-and-deaf secondary pupils residing in the multi-district area; while another participating district would provide (within its boundaries) all of the specialized programs and facilities needed for all of the paraplegic secondary pupils of the entire multidistrict area; and concurrently a third district might have the responsibility for providing programs and facilities for all of the autistic and emotionally-disturbed pupils of secondary school age residing anywhere in the participating districts.

In this manner the responsibility for all of the specialized programs that can not be provided feasibly by any one of the individual districts exclusively for its own pupils would be "parceled out" among the several districts with each district assuming a pro rata share of the cost of each program based upon the number of special-need pupils it has attending that particular program each year, calculated on a program-cost basis, and defraying such costs on a fee payment or tuition basis. The operational concept of the Project-resultant school under this set of arrangements would be quite different from the concept of a Project-resultant school in which all of its programs are provided at one locale under a unified management scheme; nevertheless, the purpose and product (educated pupils) could be the same as for the concept of the unified Project-resultant school.

For purposes of modeling it will be assumed that the legal and

(in one facility provided by and within that district)

needed for all of the blind-and-deaf secondary pupils residing in the multi-district area; while another participating district would provide (within its boundaries) all of the specialized programs and facilities needed for all of the paraplegic secondary pupils of the entire multidistrict area; and concurrently a third district might have the responsibility for providing programs and facilities for all of the autistic and emotionally-disturbed pupils of secondary school age residing anywhere in the participating districts.

1. manner the responsibility for all of the specialized programs that can not be provided feasibly by any one of the individual districts exclusively for its own pupils would be "parceled out" among the several districts with each district assuming a pro rata share of the cost of each program based upon the number of special-need pupils it has attending that particular program each year, calculated on a program-cost basis, and defraying such costs on a fee payment or tuition basis. The operational concept of the Project-resultant school under this set of arrangements would be quite different from the concept of a Project-resultant school in which all of its programs are provided at one locale under a unified management scheme; nevertheless, the purpose and product (educated pupils) could be the same as for the concept of the unified Project-resultant school.

For purposes of modeling it will be assumed that the legal and financial bases for SWIP-H have been established; and that the school will serve an area including the western portion of the Dallas Independent School District, the eastern section of the Fort Worth Independent School District, and the mid-cities school districts between.

3.3.3 Site and Facilities Planning Specification

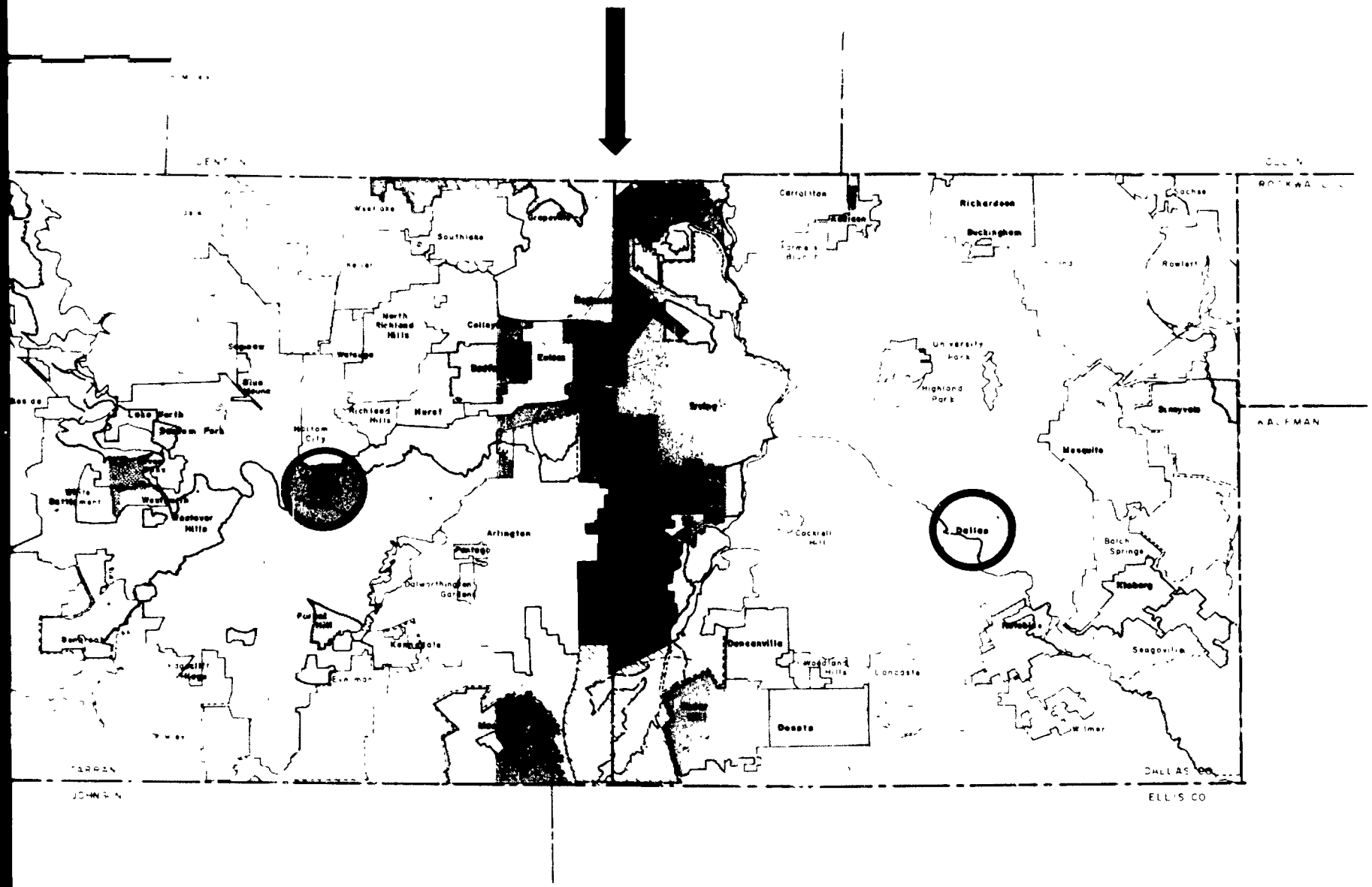
Proceeding under the assumption that the constraints of the needs assessment as well as the legal and financial Planning Specifications have been properly handled, the next step will be to consider possible alternative sites and facilities. Of course, the SWFP Model is not facility- or site-dependent, so existing installations should be first considered as prospective schooling sites. Sites and facilities considerations will be derived from the demographic, manpower, and goals data gathered during the needs assessment.

If new facility construction is contemplated, careful consideration must be given to energy needs, to waste disposal, to transportation, and to the requirements imposed by the schooling programs. In regard to energy needs, projections are deemed necessary to insure adequate supplies and to assure that construction design and materials yield optimal con[illegible] (See Appendices 3.5 and 3.6, Volume II, this Report). [illegible] include provisions for adequate handling of both [illegible] effluents, and of solid wastes; and sufficient assurance [illegible] availability of adequate [illegible] today's [illegible] transportation systems may be phased out due to [illegible] than it as the only [illegible]

[illegible]

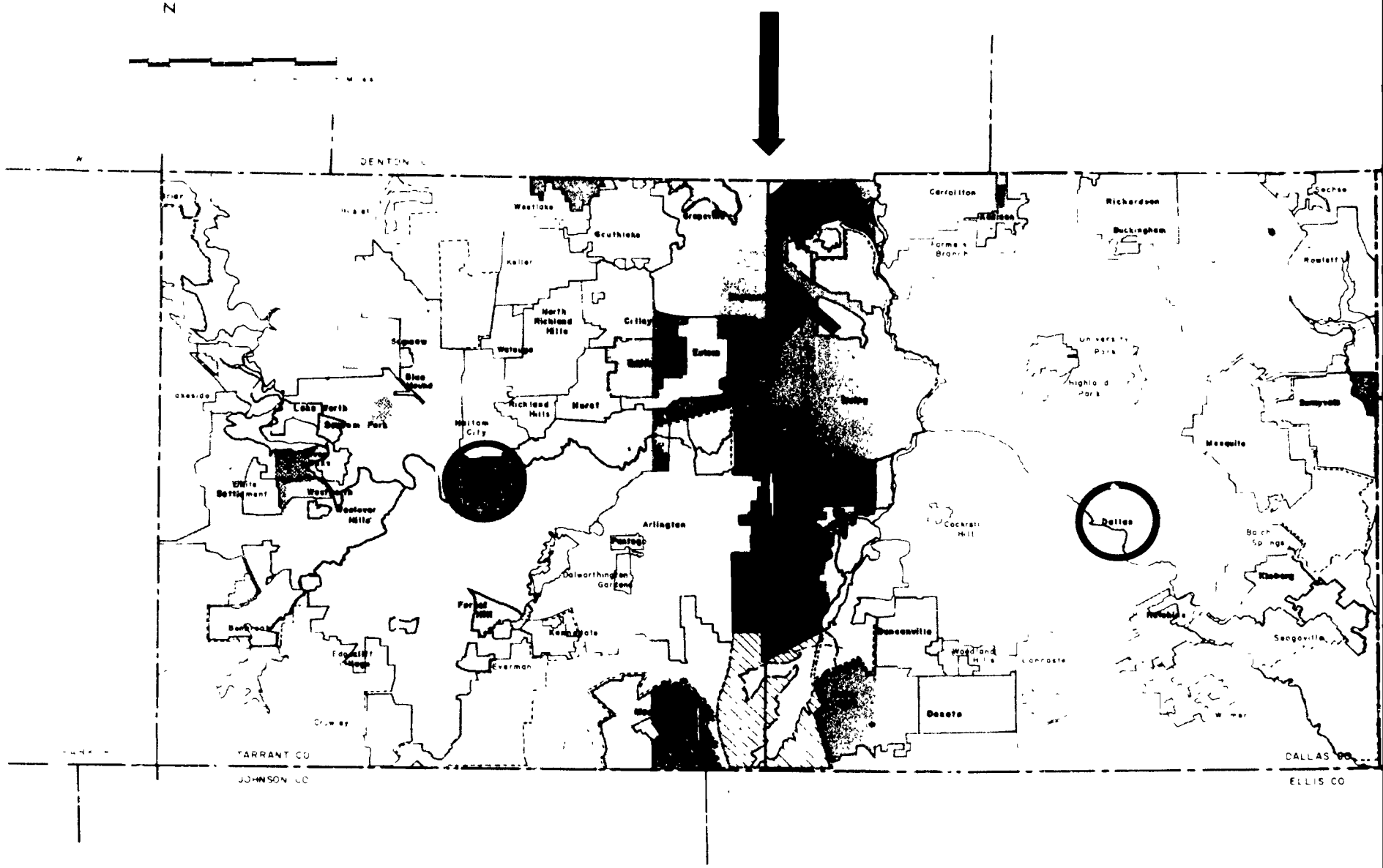
SWEP – H SITE ZONE

(Midway between Dallas and Fort Worth)



SWEP – H SITE ZONE

(Midway between Dallas and Fort Worth)



3.3.4 Goals and Programs Planning Specification

Goals and programs are planned, using data obtained from the needs assessment process. The subsections that follow categories are student demography, manpower needs, student types, and programs.

Student Demography -- Actual student demographic data for the Metroplex were obtained during the initial phases of the Project and are found in Volume II, Appendix I. These same kinds of demographic data were hypothesized for the area to be served by SWEP-H. It was assumed that the needs assessment data would infer these characteristics:

- Forty per cent (40%) of the 5,000 students in the school will come from families whose income is in the upper 50% of the income for both standard Metropolitan statistical areas.
- Fifty per cent (50%) of the 5,000 students will score at or above the 60th percentile of the standard Metropolitan statistical areas on standardized tests of academic achievement.
- Thirty-five per cent (35%) of the 5,000 students will be [illegible] groups living within the [illegible] metropolitan statistical areas.
- [illegible] 5,000 and will include [illegible].
- [illegible] ( ).
- [illegible].
- [illegible] tional needs cannot be easily met by existing Metroplex

the Metroplex were obtained during the initial phases of the Project and are found in Volume II, Appendix 1. These same kinds of demographic data were hypothesized for the area to be served by SWEP-H. It was assumed that the needs assessment data would infer these characteristics:

. Forty per cent (40%) of the 5,000 students in the school will come from families whose income is in the upper 50% of the income for both standard Metropolitan statistical areas.

. Fifty per cent (50%) of the 5,000 students will score at or above the 60th percentile of the standard metropolitan statistical areas on standardized tests of academic achievement.

. Thirty-five per cent (35%) of the 5,000 students will be from the racial minority groups living within the standard metropolitan statistical areas.

. The school enrollment will total 5,000 and will include those grades conventionally known as grades 9 through 12.

. Females will outnumber males by approximately five per cent (5%).

. Students will come from anywhere within a 15-mile radius of the central school site.

. The student will be mostly special students whose educational needs cannot be [illegible] Metroplex [illegible].

[illegible] -- [illegible] needs data for the Metro- [illegible]

[illegible].

workers, nurses, teachers,
accountants, physicians and
[illegible].....90,000

manship" for social success in the American society, to school students in [illegible] roles, to instruct students in skills needed to succeed [illegible] producers in the American economy, to school students in awareness of their roles as consumers in the American market place, and to prepare students for life-long [illegible] education processes. All programs will in- [illegible] consciousness, a strong self-aware- [illegible] awareness, and will be [illegible].

[illegible] for the SEP-[illegible] school. [illegible] will be determined primarily [illegible] diversity of programs offered will be [illegible] and the productivity of the [illegible] interesting pro- [illegible] students who might otherwise seek [illegible] schooling, governmental [illegible].

[illegible] special- [illegible]

. [illegible] (criteria)

[illegible] tenth, eleventh, and [illegible].

. [illegible] college. (one-and [illegible]).

. [illegible]

[illegible]

[illegible] student

ness emphasis, a deep commitment to environmental awareness, and will be [illegible] cost effectiveness.

[illegible] power for the SWP-E [illegible] school.

[illegible]

[illegible] programs offered will be [illegible]

[illegible] the productivity of the [illegible] an aggressive and interesting program [illegible] to lure and hold students who might otherwise seek [illegible] private schooling, governmental [illegible]

[illegible] designed to prepare SWP-E's special- [illegible] students [illegible]

. [illegible] certain mastery (criterion) [illegible] courses, rather than at the close of tenth, eleventh, and twelfth grade studies.

. Post-high school technical training in junior colleges. (one-and two-year certificated programs).

. Four-year college and university level studies.

Career awareness will be a principal educational objective and will be a thread common to all programs. The same can be said for consumer awareness, environmental awareness, and self-awareness within the curricula. All such studies will be tailored to fit the postindustrial age of the [illegible]

[illegible] curricula which each student [illegible] educational objectives. This implies a well- [illegible] objectives, with student performance [illegible] objectives [illegible]

on the conventional grade-level basis.

[illegible] programs will characterize the [illegible]-[illegible] magnet school. Such programs will include "talking computer" programs for teaching the blind, "non-literacy level" programs for teaching the illiterate or far-below-the-norm literates, and the like.

In addition to special courses meeting unique needs of students, a core of general studies including language arts, mathematics, sciences, social studies, foreign languages, music and fine arts, and physical education will continue to be offered during the 1980's. Basic skills, such as reading and arithmetic, will particularly lend themselves to differentiated kinds of "mastery systems" as opposed to the present graded structures. The offerings in each such area will be adapted to meet the unique needs of the diverse elements of the special student population.

[illegible] school programs will have structure. However, it will be [illegible] structure, [illegible] stance in that [illegible] the student. Experience [illegible] setting will be capitalized [illegible] periences to reinforce [illegible] ment of [illegible] some student-centered [illegible] areas of study, [illegible] need.

[illegible] "[illegible]". [illegible]

[illegible]

. [illegible]

. [illegible]

core of general studies including language arts, mathematics, sciences, social studies, foreign languages, music and fine arts, and physical education will continue to be offered during the 1980's. Basic skills, such as reading and arithmetic, will particularly lend themselves to differentiated kinds of "mastery systems" as opposed to the present graded structures. [illegible] the unique needs of the [illegible] student population.

The school program will have structure. However, it will be a flexible structure, one that will allow a program to be altered to [illegible] circumstance if that circumstance seems to [illegible] lead to success for the student. Experiences other than those [illegible] presented in the classroom setting will be capitalized upon for [illegible] student real-world experiences to reinforce and to crystallize classroom learning. The improvement of elementary and middle/junior high school programs will result in more students entering the secondary school at an advanced level in various areas of study, and programs will [illegible] to accommodate their special needs.

There are in [illegible] education a set of universal and perennial goals which [illegible] have, in one form or another, the "Seven Cardinal Principles of Education". [illegible], the equivalent goals guide will be that of the Fetterman [illegible] Report:

Fetterman Goals

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Process Goals

- Knowledge of Self
- Appreciation of Others
- Ability to Adjust to Change
- Clarification of Values
- Appreciation of Man's Achievements

SEEP-II's instructional objectives will supplement the general nature of these universal goals, but will be more specific in their focus on the [illegible] needs of the Metropolis as well as the special needs of its students.

[illegible] will offer [illegible]-oriented [illegible] programs, and will thus [illegible]. [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

marriage and family responsibilities

STEP-II educational objectives will supplement the general nature of these university goals, but will be more specific and will focus on the [illegible]

[illegible]

[illegible]

1[illegible]

sites, park sites, and resource persons.

every person who finishes secondary school can perhaps understand global

educational programs. It will also consist of teaching parents, guardians, and students the necessity for (and variety of) responsible choices in the alternative-type school.

Entry and Exit -- Entry and exit flexibility will play an important role in matriculation procedures. Simple rules will exist for work-study, educational "rest and recuperation", [illegible], study abroad, travel study, and other similar programs. [illegible], student-guardian choice will [illegible] the primary roles in these procedures.

Instructional Processes -- Instructional processes will constitute the variety of alternative learning [illegible], such as independent study, cooperative part-time training, [illegible]

[illegible]

cognitive nature of the learner. [illegible] from these research efforts

educational "rest and recuperation", sick leaves, study abroad, travel study, and other similar programs. Again, student-guardian choice will play primary roles in these procedures.

Instructional Processes -- Instructional processes will constitute the variety of alternative learning schemes, such as independent study, [illegible] instructional technology, [illegible]. Facilities will not dictate the instructional processes. A multitude of processes will be devised to best utilize, exploit, and otherwise educationally optimize existing "on-campus" and "off-campus" community facilities. (Most programs will incorporate some off-campus facilities). Instructional processes will thus be widely varied -- the only decisive criterion will be process-effectiveness. For the teachers, "If it teaches, and if it feels right, use it" will exemplify their philosophy. Processes will be so widely varied that students can match their learning styles with instructional styles. Processes will take advantage of quarter-system organization which will be geared to year-round operation.

New and yet untested instructional processes will likely evolve from (1) recent research which indicates that the brain's left hemisphere performs predominately verbal and analytic functions while the right hemisphere dominates spatial and holistic processes, (2) recent biofeedback research of perceptual and somatic [illegible] altered states of consciousness, and (3) recent [illegible] procedures and psychotropic drug research [illegible] [illegible] processes [illegible],

[illegible]

occur. Learning is the end product of a process that causes one to change (change perception, change behavior, etc.). It has long been recognized that interaction with a good teacher can be a determining influence in the life of a student. Teacher-student interaction frequently occurs best on an individualized basis. Therefore, most instruction will be highly individualized.

The SWEP-H staff will be comprised of specialized professional teachers, paraprofessional personnel with particular training, and community resource persons whose special skills will fulfill some of the unique technical and academic roles incumbent with the special programs of SWEP-H.

In general, the magnet school staff will:

- exhibit concern for students, respect for students, interest in students' welfare, and expectation of student accomplishment.
- accept, appreciate, and supplement the educational roles of colleagues who [illegible] teaching styles and techniques different from their own.
- remain in the magnet school only so long as they exhibit teaching behavior compatible with the basic tenet of magnet [illegible]; namely, attracting and retaining students [illegible] teacher-student interaction which enhance learning.
- [illegible] "non-reject" schooling system; [illegible] establish [illegible] individual [illegible] teaching tech- [illegible] all students, [illegible]
- [illegible] plan for the school.

The SWFP-H staff will be comprised of specialized professional teachers, paraprofessional personnel with particular training, and community resource persons whose special skills will fulfill some of the unique technical and academic roles incumbent with the special programs of SWFP-H.

In general, the magnet school staff will:

- exhibit concern for students, respect for students, interest in students' welfare, and expectation of student accomplishment.
- accept, appreciate, and supplement the educational roles of colleagues who employ teaching styles and techniques different from their own.
- remain in the magnet school only so long as they exhibit teaching behaviors compatible with the basic tenet of magnet school philosophy; namely, attracting and retaining students through teacher-student interactions which enhance learning.
- embrace the philosophy of a "zero-reject" schooling system; i.e., a system wherein grading curve does not establish performance criteria, and wherein diagnosis of individual learning needs and applications of prescribed teaching techniques focuses schooling on the personal needs of <u>all</u> students, rather than the traditional spotlighting of the needs of students who apparently best fit the system.

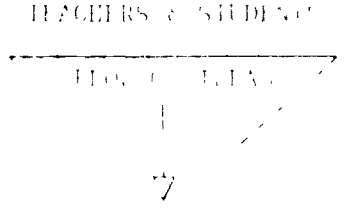
.7.4 Strategy and Evaluation Planning Specification

Strategy [illegible] the overall management plan for the school. [illegible] role will be crucial to the [illegible]. It will be noted that the Planning [illegible] [illegible]

administration, the staff, the community and internal and external school evaluators.

Useful strategy obviously implies an orchestration of all elements within the schooling Model. This is where the Planning Group plays its extremely important role. The following features of magnet school strategy are examples of the kinds of school strategies built into the SWEP-H design:

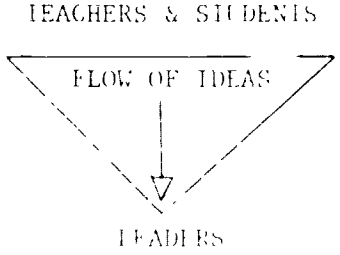
- Administrators will never say, "That's a good idea, but we can't possibly schedule it." If the idea seems good, it will be scheduled somehow.
- School climate will be risk-oriented. If the idea seems good, it will be implemented and evaluated. Conversely, antiquity will not constitute a valid argument for existence. Both innovative and historical programs will come under continuous evaluation, and nonproductive programs will be phased out in timely fashion.
- Teachers and students who desire the classical academic type of education will not be threatened; rather, they will constitute an integral part of SWEP-H schooling.
- Reversible educational planning, as diagrammed below, will promote the emergence and consequent flow of ideas (for course content, curricual, and schooling management) from the students and the teaching staff to the leaders; rather than relying heavily on the prevalent vice versa condition of the 1970's.



- [illegible] teachers and students with teachers of their choice, courses of their choice, class schedules

design:

- Administrators will never say, "That's a good idea, but we can't possibly schedule it." If the idea seems good, it will be scheduled somehow.
- School climate will be risk-oriented. If the idea seems good, it will be implemented and evaluated. Conversely, antiquity will not constitute a valid argument for existence. Both innovative and historical programs will come under continuous evaluation, and nonproductive programs will be phased out in timely fashion.
- Teachers and students who desire the classical academic type of education will not be threatened; rather, they will constitute an integral part of SWEP-H schooling.
- Reversible educational planning, as diagrammed below, will promote the emergence and consequent flow of ideas (for course content, curricual, and schooling management) from the students and the teaching staff to the leaders; rather than relying heavily on the prevalent vice versa condition of the 1970's.



- Crucial to the school will be the maximal matching of students with teachers of their choice, courses of their choice, class schedules of their choice, and curricula of their choice. And just as crucial will be the matching of teacher with instructional process of their choice.
- [illegible] will not be encouraged to participate [illegible] they feel most com-

portable and productive.

- As open schooling is possible will occur out in the community "where the action is!"
- Involvement will be the key word concerning the school's strategy (transparent plan); and the parents, students, school staff, community resource persons, central office staff, and support services personnel will have real and necessary mutually supportive functions therein.

In educational vernacular, SWEP-H will be "input solicitous and cybernetically responsive". Accordingly, the Planning Group will be given the pivotal role of seeking out and evaluating the widest spectrum of vested-interest-group input.

Planning Group -- The Planning Group is the critical subset of the Model's strategy element and includes members from all sectors of the school community--students, parents, professional staff, administrators, representatives from the community, central office staff, and representatives from higher education. The Planning Group will be responsible for articulating the interactive elements of the magnet school and will serve the particularly vital role of the cybernetic system's pilot.

Evaluation -- Because of the diversity of programs, the Planning Group will develop evaluation procedures matched to particular programs. Student evaluation, self-evaluation by teachers and students, internal management evaluators, and external evaluators will constitute part of a continuous evaluation process. The primary goal of evaluation will be [illegible] tools:

1) to improve the teaching-learning process.

2) to [illegible] cost-effectiveness.

[illegible] and assessment for responsiveness to student-centered needs and protection for faculty and students of innovative curricula. This means SWEP-H's educational leadership will assume a risi-

personnel will have real and necessary mutually supportive functions therein.

In educational vernacular, SVEP-H will be "input solicitous and cybernetically responsive". Accordingly, the Planning Group will be given the pivotal role of seeking out and evaluating the widest spectrum of vested-interest-group input.

Planning Group -- The Planning Group is the critical subset of the Model's strategy element and includes members from all sectors of the school community--students, parents, professional staff, administrators, representatives from the community, central office staff, and representatives from higher education. The Planning Group will be responsible for articulating the interactive elements of the magnet school and will serve the particularly vital role of the cybernectic system's pilot.

Evaluation -- Because of the diversity of programs, the Planning Group will develop evaluation procedures matched to particular programs. Student evaluation, self-evaluation by teachers and students, internal management evaluators, and external evaluators will constitute part of a continuous evaluation process. The primary goal of evaluation will be basically twofold:

1) to improve the teaching-learning processes.

2) to optimize cost-effectiveness.

A successful school environment for responsiveness to student-community needs demands protection for faculty and students of innovative curricula. Therefore SVEP-H's educational leadership will assume a risk-oriented evaluator posture and make evaluative allowances accordingly.

Magnet Need -- The magnet needs element in the Model represents the explicit opportunities for student [illegible] the school. Inherent in the [illegible]

target.

- that manpower needs will be communicated to students through an active counseling program focusing on such needs.
- that cooperative educational programs between the schools and industry or commerce will be based upon future-oriented evaluation of manpower needs.

Student Demography -- The student demography element represents:

- determination of students' vital statistics, such as sex, age, ethnicity, academic ability, and socio-economic status.
- projections of future student population characteristics.
- acquisition of manpower needs data relative to special programs.

The reader is referred to Volume II, Appendix I, for the actual student demographic data gathered by the SMIP staff for the Dallas-Fort Worth Metroplex.

Project Logistics

This section accounts briefly for the basic logistical portions of the SEEP Project in terms of staff and administration, facilities, and finances.

Project Staff and Administration

The configuration of the staff was altered occasionally during the Project period; however, the following basic staffing pattern prevailed:

Director.....Gerald N. King, Ph. D.

Senior Research Engineer.....Allen M Feder, Ph. D.

Senior Planner.....Browning Combs

Senior Planner.....James G. McMath

Associate Planner.....Radford Gregg

Associate Planner.....H. B. Bell

Senior Analyst.....Robert J. Burns, Ph. D.

Assistant Evaluator.....Mary Ann Allan

Data Technician.....Bambi Ragan

Executive Secretary.....Shirley Price

Secretary.....Janie Campos

Editorial Consultants.....James Bezdek, Ph. D.

Walt Elliott, Ph. D.

Brice Quarles

Services of the Senior Analyst, the Assistant Evaluator, and the Data technician were shared equally with another U.S. Office of Education project being performed by the Dallas Independent School District. The management hierarcy being used to monitor project activities consisted of the following officers of the Dallas Independent School District:

General Superintendent.....Nolan Estes

Associate Superintendent--Development.....Rogers L. Barton

The configuration of the staff was altered occasionally during the Project period; however, the following basic staffing pattern prevailed:

Director ....Gerald S. [illegible], Ph. D.

Senior Research [illegible]...................... Allen M. [illegible], Ph. D.

[illegible] ....[illegible]

Senior Planner..............................James [illegible]

Associate Planner.................. ....Radford [illegible]

Associate Planner.... . ...H. B. Bell

Senior Analyst..............................Robert L. Burns, Ph. D.

Assistant Evaluator................ ....Mary Ann Allan

Data Technician...................... ......Barbara Ragan

Executive Secretary.............. ....Shirley Price

Secretary.... ....Janie Campos

Editorial Consultants.. ....[illegible], Ph. D.

Walt Elliott, Ph. D.

Brice Quarles

Services of the Senior Analyst, the Assistant Evaluator, and the Data technician were shared equally with another U.S. Office of Education project being performed by the Dallas Independent School District. The management hierarchy being used to monitor project activities consisted of the following officers of the Dallas Independent School District:

General Superintendent... ....Nolan Estes

Associate Superintendent--Development..........Rogers L. Barton

Assistant Superintendent--Career Education......B. J. Stamps

Assistant Superintendent--Program Development...Reuben Gallegos

The National Review Committee -- In addition to the staff and administrators cited in the preceding paragraphs, a National Review Committee met twice to discuss the Project's status and to interact with Project Staff and Administrators. Committee membership included:

Dr. Marvin H. Berkeley, Dean
College of Business Administration
North Texas State University
Denton, Texas 76203

Dr. Luvern L. Cunningham
Professor of Education and Public Policy
Ohio State University
1712 Neil Avenue
Columbus, Ohio 43210

Dr. Harold B. Gores, President
Educational Facilities Laboratory
477 Madison Avenue
New York, New York 10022

Dr. Lawrence D. Haskew, Professor
Department of Educational Administration
The University of Texas at Austin
Education Annex
Austin, Texas 78712

Mr. Walter J. Humann, Vice President
The LTV Corporation
P. O. Box 5003
Dallas, Texas 75222

Dr. Charles Hunter, Professor
Department of Urban Studies
University of Texas at Arlington
Arlington, Texas 76010

Mr. [illegible], Program Officer
Special Projects Branch
U. S. Office of Education
Bureau of [illegible] Opportunity
[illegible] Maryland Avenue, S. W.
Washington, D. C. 20[illegible]

Dr. [illegible], Professor
Department of Educational Administration
Texas A & M University
College Station, Texas [illegible]

Dr. [illegible]
Texas Education Agency
Capitol Station
[illegible] 11th Street
Austin, Texas [illegible]

Dr. Edgar Morphet, Professor Emeritus

North Texas State University
Denton, Texas 76203

Dr. Luvern L. Cunningham
Professor of Education and Public Policy
Ohio State University
1 12 Neil Avenue
Columbus, Ohio 43210

Dr. Harold B. Gores, President
Educational Facilities Laboratories
477 Madison Avenue
New York, New York 10022

Dr. Lawrence D. Haskew, Professor
Department of Educational Administration
The University of Texas at Austin
Education Annex
Austin, Texas 78 12

Mr. Walter W. Humann, Vice President
The LTV Corporation
P. O. Box 5003
Dallas, Texas 75222

Dr. Charles Hunter, Professor
Department of Urban Studies
University of Texas at Arlington
Arlington, Texas 76010

Mr. David Leich, Program Officer
Special Projects Branch
U. S. Office of Education
[illegible]
[illegible] Avenue, S. W.
Washington, D. C. 20202

[illegible]

University [illegible]
Indiana University
Bloomington, Indiana [illegible]

Dr. Julius [illegible]
Superintendent
Fort Worth Independent School District
3210 West Lancaster
Fort Worth, Texas [illegible]

Dr. Maureen Webster
Educational Policy Research Center
1206 Harrison Street
Syracuse, New York 13210

Dr. Willard Wirtz, President
Manpower Institute
Suite 417
1211 Connecticut Avenue, Northwest
Washington, D. C. 20036

[illegible] Project Facilities

The Project Staff [illegible] office [illegible] suite 302-[illegible] of the [illegible] building, [illegible] located [illegible] the Dallas [illegible] District. [illegible] is located at 2218 Bryan Street, Dallas, Texas, [illegible]. The [illegible] quarters consisted of two [illegible] offices, [illegible] conference room, [illegible] [illegible] the Project [illegible] the [illegible].

.3 Project Finances

Reported in Chart 1 [illegible] projected man/hour [illegible] the Project.

CHART I

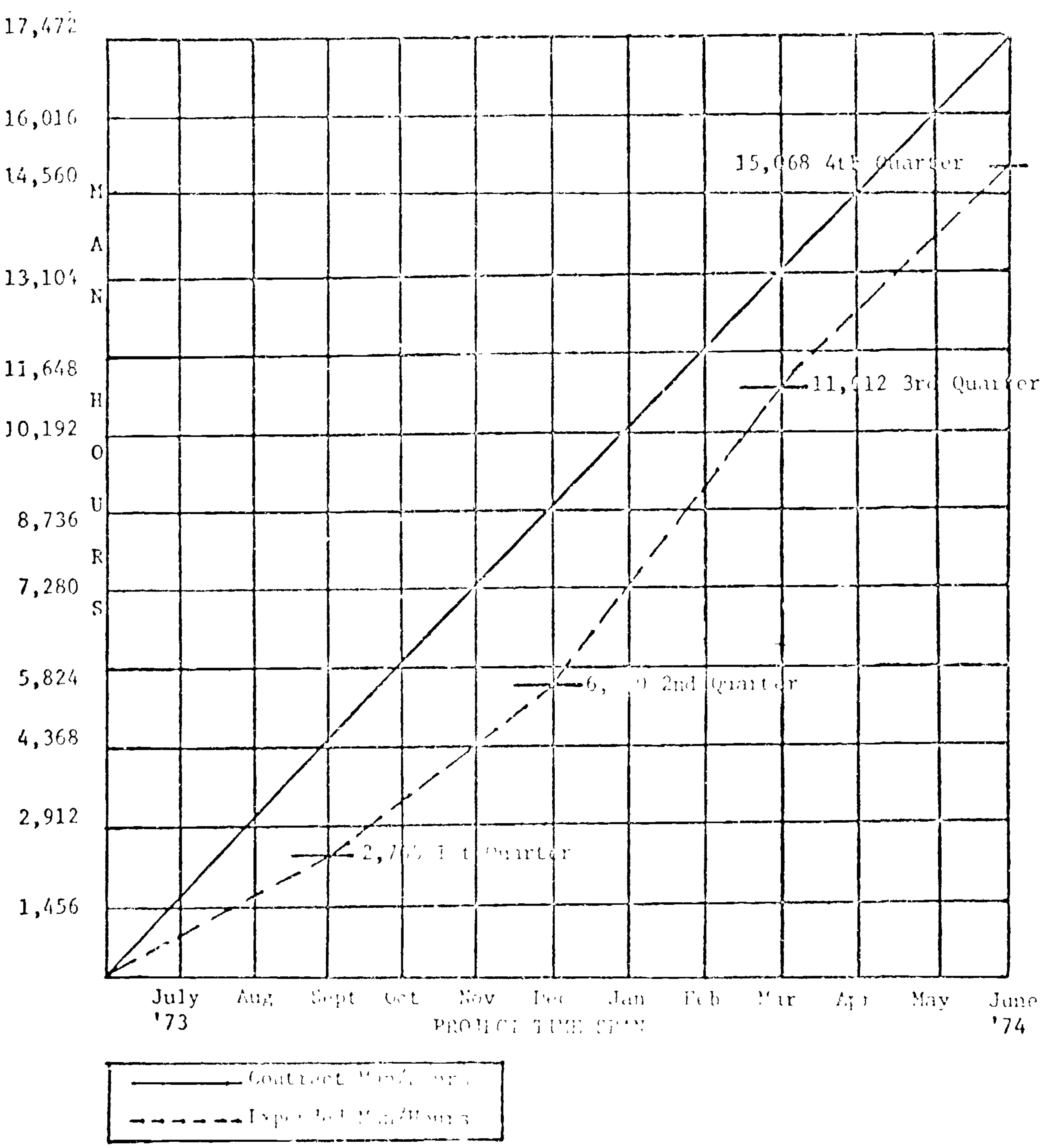


Chart II reports expenditure for the first, second, third fourth quarters. A subsequent report will be provided for the time extension granted from June 30, 1974, to August 31, 1974.

CHART II

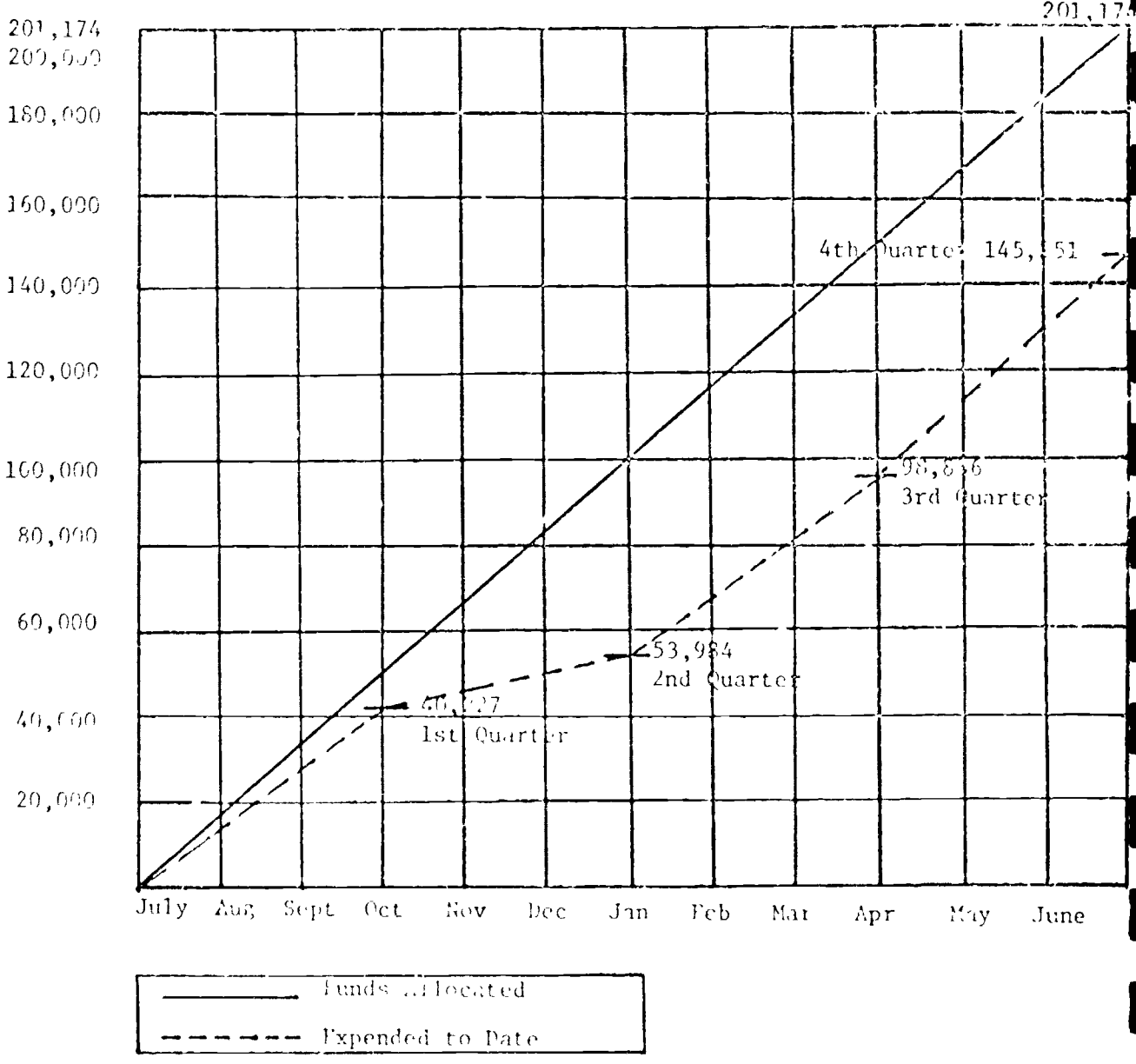
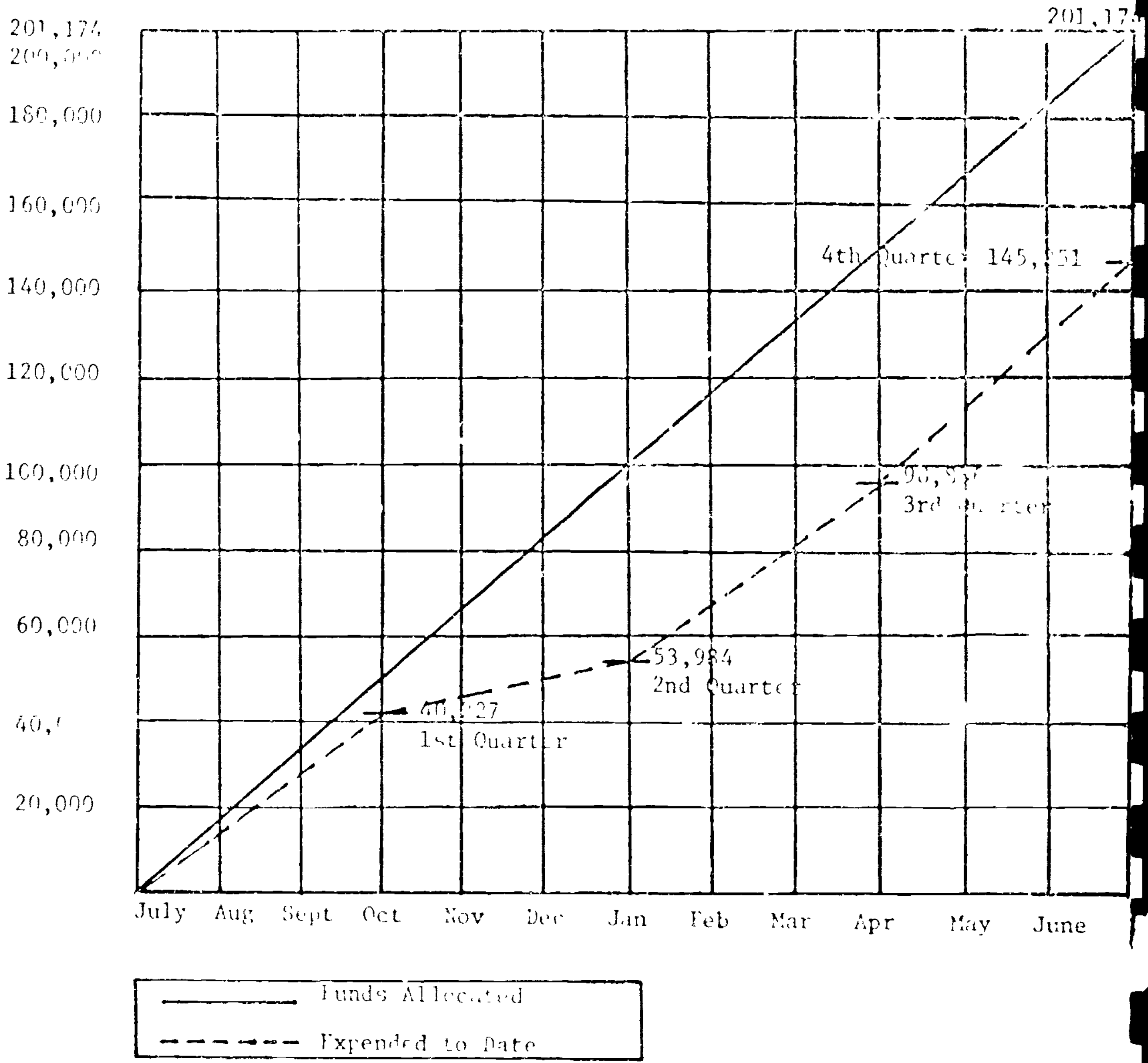


CHART II



The Financial Status Report, [illegible], can be found in Volume [illegible], Appendix 7, of this report.

5. Implications, Conclusions, and Recommendations

This section puts forward some implications and conclusions from the Project, particularly in terms of applying the SWEP Model to the planning of future schools. These in turn lead to general recommendations concerning the utilization of this study.

5.1 Implications of the Study

Educators should undoubtedly continue their efforts to emulate the methods of the analytical sciences whenever confronted by schooling problems whose solutions seem to lend themselves to such an approach. Analytical scientists never directly undertake a real problem in its complete existential complexity. Instead, they conceive a viable model of this real problem. A truly viable model has three essential properties: (1) it must yield solutions, (2) it must approximate the real problem sufficiently so that its solutions serve appropriate utilitarian ends, and (3) it must have a structure amenable to continuous refinement for closer approximation to the real problem as new data become available.

5.2 Conclusions

The SWEP Model appears to be viable as well as universal. Its inherent flexibility, philosophy, and universality of application should be of substantial assistance to future planners of schooling at any level of public education. This would be especially true for future secondary education planners.

The data and literature indicate that what has been called the "seamless" curriculum will characterize schooling of the future. "Seamless" here implies that the citizenry will more than likely be engaged in some form of schooling activity from the cradle to the grave. But this schooling may well be significantly different from the traditional school with its emphasis on vicarious enrichment and "self-centered personal improvement." Rather, future

Educators should undoubtedly continue their efforts to emulate the methods of the analytical sciences whenever confronted by schooling problems whose solutions seem to lend themselves to such an approach. Analytical scientists never directly undertake a real problem in its complete existential complexity. Instead, they conceive a viable model of this real problem. A truly viable model has three essential properties: (1) it must yield solutions, (2) it must approximate the real problem sufficiently so that its solutions serve appropriate utilitarian ends, and (3) it must have a structure amenable to continuous refinement for closer approximation to the real problem as new data become available.

5.2 Conclusions

The SWEP Model appears to be viable as well as universal. Its inherent flexibility, philosophy, and universality of application should be of substantial assistance to future planners of schooling at any level of public education. This would be expecially true for future secondary education planners.

The data and literature indicate that what has been called the "seamless" curriculum will characterize schooling of the future. "Seamless" here implies that the citizenry will more than likely be engaged in some form of schooling activity from the cradle to the grave. But this schooling may well be significantly different from the traditional school with its emphasis on vicarious enrichment and "self-centered personal improvement." Rather, future schooling appears likely to be concerned with basic skills as a necessary base for the teaching of <u>coping</u> skills -- those skills essential to existence in a kinetic society characterized by more alternative choices, more leisure time, and shrinking natural re[illegible] [illegible] their [illegible]. Therefore, responsible choice will pervade

all aspects of schooling.

Schooling will emphasize coping skills by stressing the growth of an individual's positive self-image, the development of an individual's psychomotor skills for leisure and for health (schooling for a sound mind in a sound body), and enhanced awareness of the individual's self and relation of self to both society and environment. This latter awareness of environment will pervade career development, consumer-producer roles, conservation roles, and aestheticism in a postindustrial age of technocracy. Such schooling for coping awareness implies offering relevant and utilitarian physical education, science education, and fine arts and humanities as a part of the core curriculum.

The focus of schooling, then, may well shift from the traditional role of providing mostly vicarious experiences to one of providing direct experiences. In the former role, schools are assumed to be serving traditional "information poor" clientele whereas in the latter role the schools assume that television and other mass media have produced a clientele rich in vicarious experiences ("information rich") and lacking mostly in direct community experiences. In other words, beyond teaching the basic skills the schools would become productive subset communities within which students would carry out responsible activities in service to the total community. The narcisstic goal of student self-improvement for academic reasons would be replaced by skills goals to equip the individual for coping with a complex and technological society. These educational goals would encompass such societal coping skills as: responsible behavior, ability to lead or to follow with dignity, wise and dignified consumer-producer roles, and the like.

Education will cost more, but this financial burden will not be shirked since education will be highly valued in the technocracy of the 1980's, and beyond. This valuing of education will evolve from the dependence upon technology and the concomitant need for specialized workers with

lation of self to both society and environment. This latter awareness of environment will pervade career development, consumer-producer roles, conservation roles, and aestheticism in a postindustrial age of technocracy. Such schooling for coping awareness implies offering relevant and utilitarian physical education, science education, and fine arts and humanities as a part of the core curriculum.

The focus of schooling, then, may well shift from the traditional role of providing mostly vicarious experiences to one of providing direct experiences. In the former role, schools are assumed to be serving traditional "information poor" clientele whereas in the latter role the schools assume that television and other mass media have produced a clientele rich in vicarious experiences ("information rich") and lacking mostly in direct community experiences. In other words, beyond teaching the basic skills the schools would become productive subset communities within which students would carry out responsible activities in service to the total community. The narcisstic goal of student self-improvement for academic reasons would be replaced by skills goals to equip the individual for coping with a complex and technological society. These educational goals would encompass such societal coping skills as: responsible behavior, ability to lead or to follow with dignity, wise and dignified consumer-producer roles, and the like.

Education will cost more, but this financial burden will not be shirked since education will be highly valued in the technocracy of the 1980's, and beyond. This valuing of education will evolve from the dependence upon technology and the concomitant need for specialized workers with technical competences and skills.

5.3 Recommendations

It is recommended that the SWEP Model and its Planning Specifications be considered carefully by planners of future schools. The Model is indeed universal in that it appears applicable to all educational levels and to all educational areas of the future.

Because implementation of the SWEP Model is highly dependent upon flexible, "futuristic" kinds of roles for professional educators, it is recommended that -

- o further research be undertaken to refine the knowledge of those special professional skills and attitudes concomitant with "futuristic" teaching.
- o further research findings be melded with those of this Report and utilized by institutions preparing "futuristic" teachers and "futuristic" facilitators.
- o institutions consider establishment of a pre-service training program for those persons who will serve as teachers and facilitators (instructional team members), thereby creating a talented and trained leadership pool to be drawn upon by schooling systems which implement the SWEP Model. This could consist of a "renewal" training program for in-service teachers, as well as a pre-service program. Both program types would train persons in congruence with the SWEP Model.
- o Since the Model requires that a trained paraprofessional will assume more and more of the routine duties currently encumbering certified teachers, it is recommended that further research be done on defining the future skills of the paraprofessional and placing these definitions at the disposal of teacher training institutions so that they can

Because implementation of the SWEP Model is highly dependent upon flexible, "futuristic" kinds of roles for professional educators, it is recommended that -

- o further research be undertaken to refine the knowledge of those special professional skills and attitudes concomitant with "futuristic" teaching.
- o further research findings be melded with those of this Report and utilized by institutions preparing "futuristic" teachers and "futuristic" facilitators.
- o institutions consider establishment of a pre-service training program for those persons who will serve as teachers and facilitators (instructional team members), thereby creating a talented and trained leadership pool to be drawn upon by schooling systems which implement the SWEP Model. This could consist of a "renewal" training program for in-service teachers, as well as a pre-service program. Both program types would train persons in congruence with the SWEP Model.
- o Since the Model requires that a trained paraprofessional will assume more and more of the routine duties currently encumbering certified teachers, it is recommended that further research be done on defining the future skills of the paraprofessional and placing these definitions at the disposal of teacher training institutions so that they can design suitable programs to prepare those who will perform "futuristic" paraprofessional tasks.

6. References

The selected references have been grouped, for convenience of the reader, as follows: Delphi Methodology, Educational Goals, Futurism, Programs, and Facilities.

6.1 Delphi Methodology

Enzer, S. Delphi and Cross-Impact Techniques: An Effective Combination for Systematic Futures Analysis. Middletown, Conn., Institute for the Future. 1970.

Helmer, O., Rescher, N. "On the Epistemology of the Inexact Sciences". Management Science. 1959.

Lindquist, Terry. Forecasting the Critical Tasks of the Secondary School Principal of the Future. Unpublished Dissertation, University of Oregon. 1973.

Rasp, Alfred Jr. A New Tool For Administrators: Delphi and Decision Making. Washington State Department of Instruction. Olympia, Washington. 1972.

Turoff, Murray. "The Design of a Policy Delphi". Technological Forecasting and Social Change. 1970.

6.2 Demography

1970 Census Fact Book, Regional Planning Staff of the North Central Texas Council of Governments. Arlington, Texas. 1971.

Dallas County 1985, Dept. of Planning and Urban Development. City of Dallas, 1973.

Digest of Educational Statistics, 1972 (DHEW Pub. No. (OE) 73-11103), National Center for Educational Statistics. US Dept. of HEW. US Govt. Printing Office. 1973.

Economic Potentials Handbook, Third Edition 1973. The Institute of Urban and Environmental Studies of Southern Methodist University. Dallas. 1973.

Five Year Enrollment Trends (Research Report No. 73-192) Department of Research and Evaluation, Dallas Independent School District. Dallas. 1973.

General Social and Economic Characteristics - Texas (PC (1)-C45 Texas). Bureau of the Census, US Dept. of Commerce, US Govt. Printing Office. 1972.

Population Allocations For Planning Units In Fort Worth and Environs 1970-2000. City of Fort Worth Planning Dept., 1971.

Population Projections For The City and County of Dallas 1970-1985. Department of Planning and Urban Development. City of Dallas. 1972.

6.3 Educational Goals

Enzer, S. Delphi and Cross-Impact Techniques: An Effective Combination for Systematic Futures Analysis. Middletown, Conn., Institute for the Future. 1970.

Helmer, O., Rescher, N. "On the Epistemology of the Inexact Sciences". Management Science. 1959.

Lindquist, Terry. Forecasting the Critical Tasks of the Secondary School Principal of the Future. Unpublished Dissertation, University of Oregon. 1973.

Rasp, Alfred Jr. A New Tool For Administrators: Delphi and Decision Making. Washington State Department of Instruction. Olympia, Washington. 1972.

Turoff, Murray. "The Design of a Policy Delphi". Technological Forecasting and Social Change. 1970.

6.2 Demography

1970 Census Fact Book, Regional Planning Staff of the North Central Texas Council of Governments. Arlington, Texas. 1971.

Dallas County 1985, Dept. of Planning and Urban Development. City of Dallas, 1973.

Digest of Educational Statistics, 1972 (DHEW Pub. No. (OE) 73-11103), National Center for Educational Statistics. US Dept. of HEW. US Govt. Printing Office. 1973.

Economic Potentials Handbook, Third Edition 1973. The Institute of Urban and Environmental Studies of Southern Methodist University. Dallas. 1973.

Five Year Enrollment Trends (Research Report No. 73-192) Department of Research and Evaluation, Dallas Independent School District. Dallas. 1973.

General Social and Economic Characteristics - Texas (P C (1)-C45 Texas). Bureau of the Census, US Dept. of Commerce, US Govt. Printing Office. 1972.

Population Allocations For Planning Units In Fort Worth and Environs: 1970-2000. City of Fort Worth Planning Dept., 1971.

Population Projections For The City and County of Dallas 1970-1985. Department of Planning and Urban Development. City of Dallas. 1972.

6.3 Educational Goals

Annual District Comprehensive Educational Plan. The School Board of Sarasota County, Florida. 1973.

Educational Goals and Objectives. Commission on Educational Planning. Phi Delta Kappa. Bloomington, Indiana. 1966.

6.3 Educational Goals con't.

Eidell, Terry L., John M. Nagle. School Planning, Evaluation, and Communication System Orientation Workshop: In-Workshop Manual. General Learning Corporation. 1972.

Goals For Public School Education in Texas. Texas Education Agency. Austin, Texas. 1971.

National Assessment of Educational Progress Writing Objectives. Ann Arbor, Michigan. 1969. University of Michigan Press.

Partners in Career Education. A research study conducted by the Texas Education Agency. 1973.

Rasp, Alfred, Jr. Consensus Formation on Educational Outcomes Using a Modified Delphi Technique. Washington State Dept. of Education. Olympia, Washington. 1972.

The District's 1972-73 Structure of Community-Defined Educational Goals. South Lane School District. Cottage Grove, Oregon. Feb. 1973.

6.4 Futurism

Bell, Daniel. The Coming of Post-Industrial Society. Basic Books. New York. 1973.

Coleman, James S. "How Do The Young Become Adults?" Report No. 130, Center for Social Organization of Schools. Johns Hopkins University. Baltimore, 1972; "The Children Have Outgrown the Schools." Psychology Today. February, 1972.

Daedulus (Journal of the America Academy of Arts and Sciences). Summer, 1967. "Toward the year 2000: Work in Progress"; "The No Growth Society". Fall, 1973.

Educational Policy Research Center, Stanford Research Institute, Menlo Park, California. "Alternative Futures and Educational Policy. Memorandum Report 6747-6. January, 1970; "Projecting Whole-Body Future Patterns--The Field Anomaly Relaxation (FAR) Method." Memorandum Report 6747-10. February, 1971.

Harman, Willis W. "Planning Amid Forces for Institutional Change." Symposium paper presented for Planning in the Seventies, Washington, D.C. May, 1971.

Kahn, Herman, and B. Bruce Briggs. Things to Come: Thinking about the 70's and 80's. Macmillan. New York. 1972.

Marien, Micheal D.: Alternative Futures for Learning: An Annotated Bibliography of Trends, Forecasts, and Proposals. Educational Policy Research Center, Syracuse University Research Corporation. Syracuse, New York. 1971.

Michael, Donald. The Unprepared Society: Planning for a Precarious Future. Basic Books. New York. 1968.

Platt, John R. The Step to Man. Wiley. New York. 1966.

Ann Arbor, Michigan. 1969. University of Michigan Press.

Partners in Career Education. A research study conducted by the Texas Education Agency. 1973.

Rasp, Alfred, Jr. Consensus Formation on Educational Outcomes Using a Modified Delphi Technique. Washington State Dept. of Education. Olympia, Washington. 1972.

The District's 1972-73 Structure of Community-Defined Educational Goals. South Lane School District. Cottage Grove, Oregon. Feb. 1973.

6.4 Futurism

Bell, Daniel. The Coming of Post-Industrial Society. Basic Books. New York. 1973.

Coleman, James S. "How Do The Young Become Adults?" Report No. 130, Center for Social Organization of Schools. Johns Hopkins University. Baltimore, 1972; "The Children Have Outgrown the Schools." Psychology Today. February, 1972.

Daedulus (Journal of the America Academy of Arts and Sciences). Summer, 1967. "Toward the year 2000: Work in Progress"; "The No Growth Society". Fall, 1973.

Educational Policy Research Center, Stanford Research Institute, Menlo Park, California. "Alternative Futures and Educational Policy. Memorandum Report 6747-6. January, 1970; "Projecting Whole-Body Future Patterns--The Field Anomaly Relaxation (FAR) Method." Memorandum Report 6747-10. February, 1971.

Harman, Willis W. "Planning Amid Forces for Institutional Change." Symposium paper presented for Planning in the Seventies, Washington, D.C. May, 1971.

Kahn, Herman, and B. Bruce Briggs. Things to Come: Thinking about the 70's and 80's. Macmillan. New York. 1972.

Marien, Micheal D.: Alternative Futures for Learning: An Annotated Bibliography of Trends, Forecasts, and Proposals. Educational Policy Research Center, Syracuse University Research Corporation. Syracuse, New York. 1971.

Michael, Donald. The Unprepared Society: Planning for a Precarious Future. Basic Books. New York. 1968.

Platt, John R. The Step to Man. Wiley. New York. 1966.

Sandow, Stuart A. "The Pedagogical Structure of Methods for Thinking about the Future: The Citizen's Function in Planning." Educational Policy Research Center, Syracuse University Research Corporation. Syracuse, New York. 1970.

Shane, Harold G. The Educational Significance of the Future. Phi Delta Kappan. 1973.

Toffler, Alvin. Future Shock. Random House. New York. 1970.

6.5 Programs

Adler, Richard R., Editor. Humanities Programs Today. Scholastic Magazines, Inc. New York, New York. 1970.

Bailey, Stephen K., and others. Alternative Paths To the High School Diploma. National Association of Secondary School Principals. Reton, Virginia. 1973.

Baughman, Dale. What Do Students Really Want?. Phi Delta Kappa Educational Foundation. Bloomington, Indiana. 1972.

Shane, Harold G. and Nelson, Owen. "What Will the Schools Become?" Kappan, Vol. L11, No. 10. June, 1971.

Shane, Harold G. "A Curriculum Continum: Possible Tremor in the 70's. Kappan, Vol.L1, No. 7. March, 1970.

Shane, Harold G. The Educational Significance of the Future. Phi Delta Kappa, Inc. Bloomington, Indiana. 1973.

Shields, James J., The Crisis is Outside the Classroom. Phi Delta Kappa Educational Foundation. Bloomington, Indiana. 1973.

Skeel, Dorothy J. and Hagen, Owen. The Process of Curriculum Change. Goodyear Publishing Company. 1971.

Toffler, Alvin, Editor. Learning for Tomorrow - The Role of the Future in Education. Vintage Books. Random House. New York. 1974.

Trump, J. Lloyd and Miller, Delmas. Secondary School Curriculum Improvement--Proposals and Procedures. Allyn and Bacon, Inc. Boston. 1968.

Weinstock, Ruth. The Greening of the High School, A Report on a Conference. Educational Facilities Laboratories. 1973.

Wiley, W. Deane and Bishop, Lloyd. The Flexibly Scheduled High School. Parker Publishing Co. West Nyack, New York. 1968.

_____. Curriculum and Aesthetic Education. Journal of Aesthetic Education. Urban, Illinois. 1971.

_____. Project 1983. Curriculum Guide. Fort Worth ISD. August, 1972.

6.6 Facilities

American Association of School Administrators. "Schools for America". Report of AASA Building Commission. Washington, D.C. 1967.

American Association of School Administrators. "School Building in 1971". AASA Discussion Manual. Washington, D.C.1971.

Educational Facilities Laboratories, Inc. The Community School: Sharing the Space and Action. New York, New York. June, 1972.

Miller, James N. "Renewal in Old Buildings" Readers Digest

Educational Foundation. Bloomington, Indiana. 1972.

Shane, Harold G. and Nelson, Owen. "What Will the Schools Become?" Kappan, Vol. L1!, No. 10. June, 1971.

Shane, Harold G. "A Curriculum Continum: Possible Tremor in the 70's. Kappan, Vol.L1, No. 7. March, 1970.

Shane, Harold G. The Educational Significance of the Future. Phi Delta Kappa, Inc. Bloomington, Indiana. 1973.

Shields, James J., The Crisis is Outside the Classroom. Phi Delta Kappa. Educational Foundation. Bloomington, Indiana. 1973.

Skeel, Dorothy J. and Hagen, Owen. The Process of Curriculum Change. Goodyear Publishing Company. 1971.

Toffler, Alvin, Editor. Learning for Tomorrow - The Role of the Future in Education. Vintage Books. Random House. New York. 1974.

Trump, J. Lloyd and Miller, Delmas. Secondary School Curriculum Improvement--Proposals and Procedures. Allyn and Bacon, Inc. Boston. 1968.

Weinstock, Ruth. The Greening of the High School, A Report on a Conference. Educational Facilities Laboratories. 1973.

Wiley, W. Deane and Bishop, Lloyd. The Flexibly Scheduled High School. Parker Publishing Co. West Nyack, New York. 1968.

_____. Curriculum and Aesthetic Education. Journal of Aesthetic Education. Urban, Illinois, 1971.

_____. Project 1983. Curriculum Guide. Fort Worth ISD. August, 1972.

6.6 Facilities

American Association of School Administrators. "Schools for America". Report of AASA Building Commission. Washington, D.C. 1967.

American Association of School Administrators. "School Building in 1971". AASA Discussion Manual. Washington, D.C.1971.

Educational Facilities Laboratories, Inc. The Community School: Sharing the Space and Action. New York, New York. June, 1972.

Miller, James N. "Bonanza in Old Buildings". Reader's Digest. October, 1973.

Prestressed Concrete Institute. Schools of Prestressed Concrete. Research Report. April, 1968.

Texas State Building Commission. "Standards and Specifications for Construction of Public Buildings Useable by Physically Handicapped or Disabled Citizens". Building Commission Manual. Austin, Texas. January, 1970.

6.6 Facilities con't

Berker, James M. Education for a Global Society. Phi Delta Kappa, Inc. Bloomington, Indiana. 1973.

Borman, Louise M. New Priorities in the Curriculum. Charles E. Merrill Publishing Company. Columbus, Ohio. 1968.

Bracken, B. Frank, Chairman. The Reform of Secondary Education--A report to the Public and the Profession. The National Commission on the Reform of Secondary Education. McGraw-Hill Company. 1973.

Broudy, Harry S. General Education: The Search for a Rationale. Phi Delta Kappa Educational Foundation. Bloomington, Indiana. 1974.

Dale, Edgar. Building A Learning Environment. Phi Delta Kappa Foundation. Bloomington, Indiana. 1972.

Ellena, William J., Editor. Curriculum Handbook for School Executives. American Association of School Administrators. Arlington, Virginia. 1973.

Eurich, Alvin C. High School 1980--The Shape of the Future in American Secondary Education. Pitman Publishing Company. New York, New York.

Fitzgerald, T.H. "Career Education: An Error Whose Time Has Come" School Review, Volume 2. University of Chicago. November, 1973.

Fraser, Dorothy McClure, Editor. Social Studies Curriculum Development: Prospects and Problems, 39th Yearbook. National Council for the Social Studies. Washington, D.C. 1968.

Goodlad, John I., and others. The Changing School Curriculum. A Report from the Fund for the Advancement of Education. The Georgia Press, Inc. 1966.

Hawley, Robert C. Human Values in the Classroom: Teaching for Personal and Social Growth. Education Research Associates. Amherst, Massachusetts. 1973.

Irving, David J. "Specifications for an Educational System of the Future". Phi Delta Kappan, Vol. LIII, No. 6. February, 1972.

Mager, Robert F. Developing Attitude Toward Learning. Fearon Publishers. 1968.

Mager, Robert F. Goal Analysis. Fearon Publishers. Belmont, California. 1972.

Mager, Robert F. Measuring Instructional Intent. Lear Siegler, Inc. Ferron Publishers. Belmont, California. 1973.

Maloney, Henry B., Editor. New English, New Imperatives. National Council of Teachers of English. Champaign, Illinois. 1971.

Mayer, Frederick. Education for a New Society. Phi Delta Kappa

1973.

Broudy, Harry S. General Education: The Search for a Rationale. Phi Delta Kappa Educational Foundation. Bloomington, Indiana. 1974.

Dale, Edgar. Building A Learning Environment. Phi Delta Kappa Foundation. Bloomington, Indiana. 1972.

Ellena, William J., Editor. Curriculum Handbook for School Executives. American Association of School Administrators. Arlington, Virginia. 1973.

Eurich, Alvin C. High School 1980--The Shape of the Future in American Secondary Education. Pitman Publishing Company. New York, New York.

Fitzgerald, T.H. "Career Education: An Error Whose Time Has Come" School Review, Volume 2. University of Chicago. November, 1973.

Fraser, Dorothy McClure, Editor. Social Studies Curriculum Development: Prospects and Problems, 39th Yearbook. National Council for the Social Studies. Washington, D.C. 1968.

Goodlad, John I., and others. The Changing School Curriculum. A Report from the Fund for the Advancement of Education. The Georgia Press, Inc. 1966.

Hawley, Robert C. Human Values in the Classroom: Teaching for Personal and Social Growth. Education Research Associates. Amherst, Massachusetts. 1973.

Irving, David J. "Specifications for an Educational System of the Future". Phi Delta Kappan, Vol. LIII, No. 6. February, 1972.

Mager, Robert F. Developing Attitude Toward Learning. Fearon Publishers. 1968.

Mager, Robert F. Goal Analysis. Fearon Publishers. Belmont, California. 1972.

Mager, Robert F. Measuring Instructional Intent. Lear Siegler, Inc. Ferron Publishers. Belmont, California. 1973.

Maloney, Henry B., Editor. New English, New Imperatives. National Council of Teachers of English. Champaign, Illinois. 1971.

Mayer, Frederick Education for a New Society. Phi Delta Kappa, Fastback. 1973

Mcloughlin, William P. "Individualization of Instruction vs. Nongrading". Phi Delta Kappa, Vol. LIII, No. 6 February, 1972.

Neil, Alice and Berman, Louise, Editors. Educating the Young People of the World. Association of Supervision and Curriculum Development. NEA. 1970.

6.6 Facilities con't.

Myers, Donald A. and Lillian. Open-Education Re-examined. D.C. Heath and Company. Lexington, Massachusetts. 1973.

Perrone, Vito. Open Education: Promise and Problems. Phi Kappa Educational Foundation. Bloomington, Indiana. 1972.

Riordan, Robert C. Alternative Schools in Action. Phi Delta Kappa Educational Foundation. Bloomington, Indiana. 1972.

Shane, Harold G. "Looking to the Future: Reassessment of Educational Issues of the 1970's". Kappan, Vol. LIV, No. 5 January, 1973.