State of New Jersey
Department of Education
Trenton
February, 1965

A STUDY OF THE PROPOSAL TO ESTABLISH AND OPERATE A COUNTY COLLEGE IN ESSEX COUNTY

A Report of
The New Jersey State
Commissioner of Education
to
The State Board of Education
(Pursuant to N.J.S.A. 18:22-101)

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State Department of Education Committee
for the
STUDY OF THE PROPOSAL TO ESTABLISH AND OPERATE
A COUNTY COLLEGE IN ESSEX COUNTY

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F O R E W O R D

This "Study of the Proposal to Establish and Operate a County College in Essex County" is presented in compliance with the provisions of New Jersey Statutes Annotated 18:22-100 et seq. which direct the following:

> When the board of chosen freeholders of one or more counties, after study and investigation, shall deem it advisable for such county or counties to establish a County College, such board or boards of county freeholders may petition the State Board for permission to establish and operate a County College. A report shall be attached to such petition and shall include information of the higher educational needs of the county or counties, a description of the proposed County College, and any other information or data deemed pertinent. (N.J.S.A. 18:22-101)

The Statute further provides:

> Upon receipt of such petition by the State Board, it shall be referred to the Commissioner who shall make an independent study as to the higher educational needs of the county or counties, the necessity or advisability of establishing such County College, and whether the county or counties could, with the State aid provided for in this act, financially support such college. The Commissioner shall submit a report containing his conclusions to the State Board and to the petitioning board of boards of chosen freeholders. (N.J.S.A. 18:22-101)

On September 9, 1964, the State Board of Education accepted from the Essex County Board of Chosen Freeholders a petition requesting permission to establish and operate a County College in that county. The petition was then officially referred to the Commissioner of Education with the request that an independent study be conducted to determine the higher educational needs of Essex County and the ability of the county to support the proposed County College.

This study report, prepared by a Committee of the State Department of Education duly authorized by the Commissioner of Education, reflects some of the findings presented in a study of The Need for a Two-Year County College in Essex County, New Jersey, prepared by the Essex County College

Study Commission to determine the need for a County College and includes an analysis of other pertinent and new data revealed by the present investigation. The results of several limited surveys, conducted for the purposes of this Study, by various members of the Department's Committee, are reported.

This document is submitted for the purpose of providing the State Board of Education with information needed in determining the feasibility of establishing a County College in Essex County pursuant to the proposal offered by the Essex County Board of Chosen Freeholders. The conclusions of this study report appear in Chapter VIII.

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CHAPTER I

THE COUNTY COLLEGE CONCEPT

> Nowhere is America more the Land of Opportunity than in its educational system. However, change has no conscience and today's population explosion and technological revolution might well have narrowed the opportunity for educational advancement for millions had not educational authorities, wise government planners, and civic-minded individuals and business leaders looked ahead.
>
> Change might have closed the doors of opportunity to countless young people were it not for the development in our century of the two-year college. The two-year college is a uniquely American idea that demonstrates how our system of education can be flexibly responsive to the demands of society while recognizing the worth of the individual.
>
> As the century opened, there were fewer than ten such institutions, only one of them public. Today, there are over 700 two-year colleges, with more than half of them public. Today, they enroll more than 25 per cent of all students going to college for the first time. By 1970, they will be the first college attended by some 75 per cent of the young population.[1*]

The "County College" is a term which originated in the enabling legislation[2] which provided the authority for the counties of New Jersey to establish and operate publicly supported two-year colleges. This type of educational institution is nationally identified as the "community college". Throughout this report, frequent reference is made to community colleges and is intended to refer to a collegiate institution which is known as the "County College" in New Jersey.

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* All reference notes refer to the citations listed at the end of the report which are numbered successively and grouped according to chapters.

The Role of the County College in New Jersey

The New Jersey State Board of Education, in several of its official publications, has structured the design of community college development in this State. In the State Board's Community College report, which provided the basis for the County College law mentioned above, it is recommended that the primary aims of New Jersey's County Colleges be as follows:

a. to make two-year college education accessible to able students in their home environment,

b. to provide regular full-time students with diversified programs of studies leading to appropriately varied educational and vocational goals, including transfer to other institutions,

c. to provide part-time adult students with diversified programs of studies leading to appropriately varied educational and vocational goals, including transfer to other institutions,

d. to provide effective programs of scholastic, vocational and personal guidance and flexibility of transfer among programs so that the students may have the opportunity to develop their potentialities to the utmost,

e. to provide for local as well as State and national needs appropriate to this type of institution, and

f. to supplement educational opportunities now available in the State.[3]

In an official newsletter of the State Department of Education it is stated that the community colleges, by being deliberately located within commuting distance of the students they seek to serve, are expected to eliminate some of the major barriers which keep many capable youth from pursuing education beyond high school. The publication explains that:

> Living costs represent a substantial portion of the student's expenses in a live-in college; the opportunity to stay at home would offer significant savings in room and board. Studies have revealed

> that college attendance is more dependent upon family income than student scholarship. The savings realized on housing, meals, long-distance travel, and unusually low tuition at a community college may make a college education possible for many of our youth who otherwise would be denied the opportunity.
>
> There are still many young people who do not continue their education beyond high school because they do not see the advantages. This is generally due to inadequate information about the kinds of college experiences available. The local community college, by offering broad programs, directly appeals to a wide range of abilities and interests.
>
> The college-age group would not be the sole constituency of the community college; working adults could also find educational opportunities for personal growth, in-service training for occupational improvement, and intellectual satisfaction.[4]

In the legislation governing the establishment and operation of County Colleges, the role of these institutions is indicated by their definition. According to New Jersey Law:

> 'County College' means an educational institution . . . offering programs of instruction, extending not more than 2 years beyond high school, which may include but need not be limited to specialized or comprehensive curriculums, including college credit transfer courses, terminal courses in the liberal arts and sciences, and technical institute type programs.[5]

The Distinctive Characteristics of the Two-Year Community-Oriented County College

The community-oriented County College is a distinctive institution in that it attempts to equalize educational opportunity beyond the high school through its low tuition cost to the student and by its flexible admissions policy. These equalization factors become increasingly important as higher education becomes more costly, as four-year colleges become more crowded and selective, and as the national and State welfare increasingly demand that all youth be developed to their maximum potential.

Another distinctive community college characteristic is its provision for an extensive program of guidance services for the student. The community college, by offering a variety of learning experiences, caters to students representing a wide range of interests, objectives and capacities. Persons uncertain of their educational and career objectives are given the opportunity to sample fields of knowledge and to test their own abilities under the guidance of counselors and teachers with a concern for the "individual" student. Community colleges have been referred to as great distributing agencies; some of their graduates will go on to four-year colleges and universities for advanced work, while others will move directly into a variety of careers and professions.

Furthermore, the two-year community college is distinctive in that it occupies a "middle position" between the high school and the four-year college, industry, or general life activities. No other institution of higher education has such an adaptable structure.

In a 1956 report of the State Board of Education, the unique characteristics and contribution of the community college are summarized as follows:

1. They serve as community centers responsive to the needs of their constituency in post-high school education and in adult education. They bring to the community a center of information and culture which supplements the work of the secondary school. Being flexible institutions they can, if their size permits, offer work in almost any subject field.

2. Community colleges within a community can provide the first two years of the college curriculum, enabling students to prepare for more intensive upper division and graduate work of later years.

3. Community colleges are in an excellent position to stimulate the search for and development of talent.

4. They can give "terminal" two-year courses, emphasizing the skills and techniques important to the development of the community and the State and offering educational opportunity to all youth.

5. Community colleges can give a basic general education beyond the high school level.

6. Community colleges widely established and well supported would go far toward meeting the increasing demand for facilities. In fact, they would serve the society's need for trained personnel by making college available to many who would not otherwise attend. A comprehensive system of community colleges would probably increase the proportion of New Jersey's young people entering college to almost 50 per cent of the 18 year olds.[6]

Basic Functions of a Two-Year Community-Oriented County College

Basically there are four areas of specific curricular responsibility which are considered community college functions: (1) university-parallel; (2) general education terminal courses; (3) technical-institute type programs; and (4) continuing or adult programs. In a recent report on higher educational needs, the New Jersey State Board of Education describes these functions:

1. /University-Parallel Programs/. . . should provide two-year programs equipping students for transfer to the upper division of four-year and five-year colleges, or to universities for the completion of their requirements for a baccalaureate degree in arts or sciences, and for work of the Junior and Senior years leading to professional degrees.[7]

   Assuming that the student takes the required pattern of courses and that he achieves the prescribed quality level in work taken, he may transfer to the third year of a four-year college or university program. Transfer is usually accomplished with ease; particularly if the student identifies early in his college career, the institution to which he wishes to transfer for completion of

the baccalaureate degree program. The student's work at the community college can usually be structured to meet the prerequisites for future work at the college or university of his choice.

2. [General Education Terminal Courses are]. . . offerings closely related to these programs (above) and often identical as to the content of a single course or subject. . .[8]

These courses would provide local opportunity for formal education, especially beyond high school level, that will develop the qualities of good family membership, civic responsibility, and personal cultural improvement.

3. [Technical Institute Type Programs provided for]. . . the development of two-year vocational terminal (technical education) programs preparing students to serve the needs of business, industry, agriculture, research institutes, laboratories and other technical assistance related to health services, the practice of medicine and dentistry, and the like. In the development of curriculums in these fields, emphasis must be placed on adaptation to the needs of the locality which the community college serves. Among the many specializations indicated are the programs such as those dealing with electronics, operating engineering, refrigeration and air conditioning, personal or technical services in support of business executives, and the like.[9]

Training in the areas of technical education usually requires two years of post-high school education in a prescribed curriculum of the technical institute type. The curriculums are designed specifically for the preparation of the technician, not an engineer or scientist. The two-year technical education course of study is rigorous and requires broad preparation in mathematics, science, and applied engineering or scientific technology. A technical education program in a community college is designed to give intellectual breadth and personal enrichment as well as technical proficiency.

4. [Continuing or Adult Education Programs provide for the] . . . education of adults in . . . fields mentioned above; on-the-job training in response to the needs which grow out of technological advances which modify patterns of employment. The community colleges should, as well, offer opportunities to adults which will increase their social competence, and other courses which may contribute to the enrichment of their lives through the appreciation of the cultural opportunities in our society.[10]

Adults enrolled in a community college may wish to take courses of study which will lead toward a two-year Associate Degree, or they may enroll for courses which do not award college credit but which contribute to creative expression in the arts and the humanities or perhaps toward an appreciation of some field of interest.

There is considerable diversity in programs among community colleges. As a common practice, the community college faculties study their communities to identify the post-high school educational services needed. The staff work closely with resource committees from business, industry, and the professions and make an attempt to provide educational programs appropriate to the character of the community and the objectives of the college. They are deliberately designed to serve regional interests most efficiently.

Students Served by a Community College

A comprehensive community college attempts to accommodate. . .

1. Youth who are high school graduates and who want two, rather than four years of higher education, in the arts and sciences, or in vocational-technical or semi-professional programs.

2. High school graduates eventually bound for a four-year college or university who want to spend their freshman and sophomore years in their own community, living at home.

3. Young adults who have not graduated from high school but, through part-time study, eventually hope to earn a college degree by beginning with special courses at their level and advancing to collegiate level work after meeting the necessary admission requirements of a college-level program.

4. Employed persons who want to improve their skills, prepare for advancement or for change of employment, or to expand their general education.

5. Adult women interested in homemaking, child care, cultural courses or preparation for employment or re-employment.

6. Any citizen desiring training for community services such as fire science, police science, first aid and rescue work, and sanitation.

Community College Enrollment Trends

The prediction of college enrollments to 1970 has been undertaken by many. And there seems to be a rather uniform agreement concerning the number of young people who will be of college age. The major point of uncertainty in the projection studies concerns the percentage of those of college age who will actually attend college. Financial assistance, availability of needed educational programs, programs of motivation and encouragement, and increase in the percentage of students graduating from high school have been mentioned as factors which might materially increase the percentage of students who will go to college.

The future enrollment picture for the two-year community college is further influenced by the following:

1. The community colleges enroll students from the immediate locality, many of whom would not and could not go to college elsewhere; therefore, the increase in the enrollment will depend to a very great extent on the development of more community colleges.
2. An increase in the percentage of high school graduates undertaking college will probably affect community colleges more than four-year colleges simply because of the influence of the economic factor.
3. The increased emphasis on the community service role of the community colleges may result in program revisions and in the inauguration of new offerings which will greatly increase the attractiveness of community college curriculums for adults of all ages.
4. As the terminal programs of two years or less in length become better known and generally accepted as appropriate training for a wide variety of occupations, youth with the encouragement of their parents are more likely to take advantage of them.
5. Four-year colleges may find enrollments so overwhelming in comparison to resources that students will be encouraged to spend their first year or two in the community colleges.
6. The demands of adults for education are, as yet, largely unfathomed. The extent to which adults will enroll in the future depends largely on the kinds of training available.

As a result of these factors, a significant annual increase in the community college enrollment can be expected by 1970.

College Costs and the Financial Advantages of Community Colleges

College tuition costs have doubled on many college and university campuses in the past 15 or 20 years. Along with the other living costs, the cost of room and board, books, and incidentials reflects the general increase. In addition, there are other major financial items which must be considered by the youths who attend out-of-state colleges and universities. Presently about 45 per cent of New Jersey students, who enter college, enroll in out-of-state institutions.

Cost data for several publicly supported universities attended by New Jersey students are shown in Table 1. Out-of-state publicly supported institutions of higher education have been popular with many New Jersey students because of the basic tuition costs which are usually much less than comparable private institutions. Shown in the table are the expenses for room and board and for special fees for students living out of the state in which the institution is located.

TABLE 1

TWO MAJOR EXPENSES (OTHER THAN TUITION) FOR NEW JERSEY YOUTH ATTENDING OUT-OF-STATE UNIVERSITIES [11]

College	Room and Board	Tuition Penalty for N.J. Students	Total
University of Vermont, Burlington	$775	$784	$1,559
Pennsylvania State Univ., University Park	795	525	1,320
University of Virginia, Charlottesville	750	460	1,210
University of New Hampshire, Durham	590	420	1,010
University of Delaware, Newark	660	335	995

Much of the information about the drawing power of community colleges could well be under the heading of costs. The popularity of the community college has been derived to a great extent from its money-saving features.

Although not all public community colleges are tuition free, most of them have low tuition. The big saving, however, is in room and board. The student in the public two-year college ordinarily lives at home. At the four-year college, annual cost for tuition, fees, room and board averages about $2,025. Multiply this figure by two for an Associate degree or for a Baccalaureate degree and add a varied amount for books, supplies and miscellaneous expenses, the total cost of college could range from $5,000 to $10,000. If the first two years of college are at a community college where the student can live at home, the saving is sizable and may very well make the difference in the choice of a career.

Another financial advantage of the community college is that students are more likely to find part-time work in their own communities where they are acquainted with available work opportunities and are known personally by many.

Some Guiding Principles Governing the Establishment of a County College

The State Board of Education has recommended that the County Colleges be established in an orderly fashion and in keeping with sould planning and practical financing.[12] In its report to the Governor and Legislature in January, 1961, the State Board proposes that these institutions be governed by the following guiding principles:

1. . . . There should be a statement of purposes and objectives. These should be clear, honest and susceptible to attainment and be realistically attuned to the needs of higher education in the county, particularly to those students for whom a two-year college program is appropriate.

2. . . . A County College should have its own physical plant and equipment including parking facilities, consonant with the demands of its purposes and programs. Such plant and equipment should be continually reconsidered in view of changing needs, development and expansion. The County College should operate as a separate and identifiable unit and not be dominated by any other unit of education.

3. . . . The curricula should be designed in light of the needs of the students attending a County College and in harmony with the stated purposes and objectives. The programs of study should be built upon broad flexible course offerings the objectives of which are to help each student develop his own potentialities.[13]

4. . . . Responsibility for offering technical programs of less than college grade should be vested in the County Board of Vocational Education, and high school graduates may be admitted to such programs. If no County Board of Vocational Education exists in a County, the County College may also offer such programs. In particular, if it is desirable to transfer programs in whole or in part from one institution to the other, the two Boards, subject to approval by the State Board of Education and by the County Board of Chosen Freeholders, /might/. . . transfer real and personal property from one to the other.[14] /Furthermore the County/ . . . should endeavor to remove and prevent undesirable duplication between their respective programs and agree upon the assignment of programs between the two, subject to the rules and regulations of the State Board of Education.[15]

CHAPTER II

POPULATION AND SOCIOLOGICAL CONDITIONS IN ESSEX COUNTY

The Population Trends in Essex County

Essex County is considered the industrial, population and financial hub of New Jersey. Although it is the third smallest of all the counties (128 sq. mi.), it manages to pack 15 per cent of the State's population within its cities and its noted suburbs. Similar to conditions in other New Jersey counties already studied, the population growth pattern of Essex County points to an increasing number of college-age youth. Shown below in Table 2 are the numerical changes in population for the decades between 1930 and 1960 for the County's total population as well as for four specific age groupings.

The overall county population increased 8 per cent during the 1940's, and another 2 per cent during the 1950's. Essex County has experienced a gradual but steady population increase over the past thirty years.

During the past two decades, there has been significant growth in the total school-age population (19 years and under). See Table 2. The number of school-age children in Essex County increased about 24 per cent between 1940 and 1960.

TABLE 2

ESSEX COUNTY POPULATION TRENDS
BY MAJOR AGE GROUPS
1930-1960[1]

Age Group	1930	1940	1950	1960
TOTAL POPULATION	833,513	837,340	905,949	923,545
19 and Under	286,327	242,732	251,322	300,718
20-44 Years	358,590	357,061	362,523	305,294
45-64 Years	150,479	184,486	217,737	223,498
Over 65	38,117	53,061	74,367	94,035

Summarized below in Table 3 are the County's numerical and percentage changes in population by various age grouping between 1950 and 1960. Age group "10-14 years" experienced a 41.5 per cent increase; age group "5-9 years" had a 20.4 per cent increase; and age group "under 5 years" had approximately a 12 per cent increase since 1950. The increase in the number of all children "under 18" was 22.9 per cent between 1950 and 1960. Increases in these child age groups dramatize the need to provide increased post-high school educational opportunities for a large number of Essex County children who are advancing through the grades.

TABLE 3

ESSEX COUNTY POPULATION CHANGE
BY AGE GROUPS
1950-1960[2]

Age Groups (Years)	Population Totals			
	Year		Increase or Decrease	
	1950	1960	Number	Percent
All Ages	905,949	923,545	17,596	1.9%
Under 5	79,865	89,253	9,388	11.8
5-9	65,886	79,301	13,415	20.4
10-14	51,869	73,404	21,535	41.5
15-19	53,702	58,760	5,058	9.4
20-24	65,286	51,114	-14,172	-21.7
25-29	77,025	57,678	-19,347	-25.1
30-34	74,683	63,302	-11,381	-15.2
35-39	75,095	67,963	-7,132	-9.5
40-44	70,434	65,237	-5,197	-7.4
45-49	64,132	64,699	567	0.9
Under 18	229,239	280,548	51,309	22.4
Over 50	227,972	252,834	24,862	10.9

Essex County's total population in 1960 was 923,545 (U.S. Census). Newark, the County's largest city, had a population of 405,220. The total population (518,268) of the three cities in Essex County (Newark, East Orange and Orange) account for over 56 per cent of the County's population. The population distribution among Essex County's twenty-two municipalities for the past thirty years is shown in Table 4 on the following page.

TABLE 4

POPULATION DATA
ESSEX COUNTY MUNICIPALITIES
1930-1960[3]

Municipalities	Area In Sq. Miles	1930	1940	1950	1960
City					
Newark	24.14	442,337	429,760	438,776	405,220
East Orange	4.00	68,020	68,945	79,340	77,259
Orange	2.20	35,399	35,717	38,037	35,789
Town					
Irvington	2.80	56,733	55,328	59,201	59,379
Bloomfield	5.40	38,077	41,623	49,307	51,867
Montclair	6.20	42,017	39,807	43,927	43,129
West Orange	12.10	24,327	25,662	28,605	39,895
Belleville	3.30	26,974	28,167	32,019	35,005
Nutley	3.40	20,572	21,954	26,002	29,513
Township					
Maplewood	4.00	21,321	23,139	25,201	23,977
Livingston	14.00	3,476	5,972	9,932	23,124
Millburn	10.00	8,602	11,652	14,560	18,799
Cedar Grove	4.50	4,793	5,208	8,022	14,603
Caldwell	10.40	989	1,392	1,906	3,310
Borough					
Verona	2.80	7,161	8,957	10,921	13,782
Glen Ridge	1.30	7,365	7,331	7,620	8,322
West Caldwell	5.30	2,911	3,458	4,666	8,314
Caldwell	1.20	5,144	4,932	6,270	6,942
North Caldwell	2.90	1,492	1,572	1,781	4,163
Roseland	3.50	1,058	1,556	2,019	2,804
Essex Fells	1.30	1,115	1,466	1,617	2,174
Village					
South Orange	2.70	13,630	13,742	15,230	16,175

Projected Population Growth in Essex County

Table 5 summarizes the projected growth in population for the Nation, the State, and Essex County. By the year 1980, the Essex County population should be about 6 per cent more than it was in 1960, reaching an approximate total of 979,789.

TABLE 5

PROJECTIONS OF POPULATION GROWTH
1970-1980[4]

Locality	Year				
				Estimated	
	1940	1950	1960	1970	1980
U.S.A.	131,669,275	151,325,798	179,323,175	214,222,000	259,584,000
New Jersey	4,160,165	4,835,329	6,066,782	7,431,370	8,491,780
Essex County	837,340	905,949	923,545	951,251	979,789

Studies show that the County's growth will continue to be moderate but steady. This growth which has reached nearly one million people has brought about an increased demand for more educational opportunities and facilities at all levels. Projections of population for Essex County through 1980 indicate that this demand will be further intensified.

Essex County Employment Picture

Data from the 1960 U.S. Census and information contained in various County documents provide the basis for a description of the industrial employment picture in Essex County.

Table 6 summarizes for the year 1960 the types of industries and number of men and women employed in each type, ranked according to number employed. "Manufacturing" establishments employed the largest number, about 127,000. Of these industries, "Electrical Machinery, Equipment, and Supplies" firms employed nearly 27,000 workers. The next largest group, "Other Retail Trade" employed about 32,000 workers. Excluded from this group are the retail groups specifically identified in the table such as "Food and Dairy Products Stores", "Eating and Drinking Places", etc. See Table 6.

TABLE 6

ESSEX COUNTY'S INDUSTRIES AND NUMBER OF EMPLOYEES
(1960 U.S. CENSUS)[5]

Industry Group		Number of Men and Women Employed
Manufacturing		127,396
Electrical Machinery, Equipment, and Supplies	26,874	
Machinery, Except Electrical	13,814	
Food and Kindred Products	12,972	
Other Durable Goods	12,355	
Chemical and Allied Products	11,719	
Other Retail Trade (excludes all others listed)		32,211
Miscellaneous Industries		27,624
Finance, Insurance and Real Estate		26,309
Public Administration		15,684
Construction		15,459
Educational Services: Government and Private		15,321
Wholesale Trade		13,132
Other Professional and Related Services		11,742
Other Personal Services		10,621
Private Households		10,029
Hospitals		9,763
Food and Dairy Products Stores		9,411
Eating and Drinking Places		8,932
Business Services		7,780
Transportation Other Than Railroads and Trucking		6,167
Communications		6,108
Trucking Services and Warehousing		5,965
Utilities and Sanitary Services		4,767
Welfare, Religious, and Nonprofit Membership Org.		4,218
Repair Services		4,088
Entertainment and Recreation Services		2,381
Railroad and Railway Express Service		1,918
Agriculture		1,224
Mining		210
Forestry and Fisheries		19

According to data published by the New Jersey Division of Employment Security, the major manufacturing industries in the County have the employment record as shown in Table 7.

TABLE 7

ESSEX COUNTY INDUSTRIAL EMPLOYMENT RECORD, 1950 & 1959

Industry	Number of Jobs (Sept.)		Percent Increase or Decrease
	1950	1959	
Electrical Products	31,079	31,328	0.8%
Processed Food	15,856	17,578	10.9
Machinery	13,954	12,949	-7.2
Apparel, Needle Products	12,533	9,786	-21.9
Chemicals	12,018	12,292	2.3
Fabricated Metal	9,785	10,982	12.2
Primary Metal	5,713	3,472	-39.2
Aircraft	4,904	2,889	-41.1
Printing and Publishing	4,568	5,538	21.2
Textile Mill Products	4,042	2,848	-29.5
Leather	3,931	3,244	-17.5
Paper, Paper Products	3,450	3,383	-1.9
Instruments and Clocks	4,904	2,438	-50.3

The over-all rate of decrease in manufacturing employment from 1950 to 1959 in Essex County was 8.5 per cent. State-wide, the comparable rate of increase was 2.8 per cent.

In summary, Essex County, as an industrial county, knows no peer within the State. It ranks among the top eleven counties in the Nation for amount and diversity of its industries. The city of Newark alone boasts more than 300 different types of industry.

In 1960, Essex had a total labor force of more than 400,000, of whom 5.5 per cent were unemployed. There were about 130,000 in manufacturing, about 15,000 in construction, and more in every other work category than in any other county in New Jersey, with the exception of agriculture.

In 1960, the County listed within its borders about 17 per cent of all industry in the State. Electrical goods and machinery topped the list, with food processing, non-electrical machinery, chemicals, and fabricated metal products next in that order. Doing this work were almost 20 per cent of all employed workers in the State.[6]

Other major industries in the County include: apparel, printing and publishing, primary metal industries, instruments, leather, paper, food, and textiles.

Among the big "name" electrical firms in the County are Westinghouse, Federal Electric, Tung-Sol, McGraw Edison, Daystrom, and Continental Electric.

Top chemical firms in the County include DuPont, Minnesota Mining, Celanese, and Interchemical. The paint industry, an offshoot of the chemical business, includes Sherwin-Williams; Devoe & Raynolds, Pittsburg Plate Glass, and a dozen smaller but important manufacturers.

Among the machinery firms are Gould and Eberhardt; Watts-Campbell; Monroe Calculating, and Wallace & Tiernan.

Modern industry depends nearly as much on research as it does on a good labor supply and Essex can supply both. In the past decade, research organizations have grown in the County until now there are well over 200. Some are independent, some are subsidiaries of major firms. Many are located in small, attractive facilities in the suburbs, such as Livingston's thriving industrial park. Most suburban Essex municipalities actively seek such research facilities to ease the burden on residential taxpayers.[7]

Summarized below in Table 8 are the occupations of Essex County residents. As revealed in the Table, the category "Operatives and Kindred Workers" employed the largest number, about 79,000. "Clerical and Kindred Workers" employed the second largest number, about 64,000. "Craftsmen, Foremen and Kindred Workers" is third with a total of approximately 45,000 employed.

"Farmers and Farm Managers" is the smallest occupational group with only 274 men and women employed in this category.

TABLE 8

OCCUPATIONS IN WHICH ESSEX COUNTY RESIDENTS ARE EMPLOYED
(U.S. CENSUS 1960)[8]

Occupational Group	Number Employed*		
	Men	Women	Total
All Occupations	244,467	134,012	378,479
Operatives and Kindred Workers	51,031	27,642	78,673
Clerical and Kindred Workers	21,241	42,938	64,179
Craftsmen, Foremen and Kindred Wkrs.	43,190	1,925	45,115
Profsnl., Technl., & Kndrd. Wkrs.	29,523	15,492	45,015
Mgrs. Off'cls., & Propr's, Exc. Farm	27,604	4,077	31,681
Miscellaneous Occupations	18,367	11,941	30,308
Service Wrkrs., Exc. Pvt. Hsld.	18,238	11,215	29,453
Sales Workers	19,700	9,164	28,864
Laborers, Except Farm and Mine	14,697	694	15,391
Private Household Workers	376	8,851	9,227
Farm Laborers and Farm Foremen	262	37	299
Farmers and Farm Managers	238	36	274

*All civilian 14 years old or older.

The 1960 data in Table 9 show the annual median earnings of selected occupational categories for Essex County contrasted with those for the State. For the Essex County men, the highest earnings are in the "Professional, Managerial and Kindred Workers" with $7,773. The second largest median earnings are for "Craftsmen, Foremen, and Kindred Workers" with $5,365. "Farm Laborers" show the low median earning of $1,456. The average State worker in the Professional and Managerial field earns $7,526, $247 less than an Essex County worker. The average State worker at the Craftsmen and Formen level earns $293 more.

TABLE 9

MEDIAN EARNINGS OF MEN AND WOMEN OF ESSEX COUNTY
BY SELECTED OCCUPATIONAL CATEGORIES
(COMPARED TO NEW JERSEY)[9]

Occupational Category	Median Earnings (dollars)	
	Essex County	New Jersey
MALE		
Professional, Managerial and Kindred Workers	$7,773	$7,526
Craftsmen, Foremen, and Kindred Workers	5,365	5,658
Operatives and Kindred Workers	4,494	4,850
Laborers, Except Farm and Mine	3,808	3,824
Farmers and Farm Managers	3,181	2,867
Farm Laborers	1,456	1,946
All Occupational Groups Including Others Not Shown Above	5,108	5,350
FEMALE		
Clerical and Kindred Workers	$3,340	$3,240
Operatives and Kindred Workers	2,605	2,480
All Occupational Groups Including Others Not Shown Above	2,794	2,650

As indicated by the 1959 data in Table 10, the median family income in Essex County is $6,651. This amount closely approximates the State's average of $6,786. The median male income is $4,816 which is considerably less than the $5,016 for the State. The average personal income in Essex County ranks lower than the State's average.

Table 10 also shows that more individual men in Essex County have incomes in the range $5,000 to $5,999, and more families in the income range $5,000 to $5,999 than any other thousand-dollar range shown in the Table. Almost 40 per cent of Essex County families earn between $4,000 and $7,000 a year. About 23 per cent earn more than $10,000. The aggregate county income in 1959 was $2,266,000,000.

TABLE 10

INCOME OF INDIVIDUALS AND FAMILIES
OF ESSEX COUNTY IN 1959[10]

Amount of Income (dollars)	Number Earning the Amount of Income		
	Individuals		
	Men	Women	Families
$ 1 to 499	12,858	32,291	8,370
500 to 999	13,939	33,420	
1,000 to 1,999	24,136	37,111	10,116
2,000 to 2,999	24,166	34,916	12,717
3,000 to 3,999	34,755	33,516	18,800
4,000 to 4,999	43,307	20,294	24,379
5,000 to 5,999	44,849	8,958	29,822
6,000 to 6,999	28,166	3,874	26,249
7,000 to 9,999	35,013	4,766	65,363
10,000 and Over	30,286	1,993	56,819
Median Income	$4,816	$2,070	$6,651

Educational Achievements of Essex County Residents

Summarized in Table 11 are the achievements of Essex County adults 25 years or older. Of the total 1960 adult population in Essex County, 130,551 or 22.8 per cent, graduated from high school.

About 9.4 per cent of Essex County adults have completed four or more years of college. This proportion is one per cent more than the 8.4 per cent in the State who have four or more years of college. The percentage of men in Essex County with this amount of education (13.1 per cent) is approximately twice that of the women (6.2 per cent in the County.

In 1960, a total of 120,220 adults (21 per cent) had less than an eighth grade education and 341,932 (59.8 per cent) had less than a high school education.

The median number of school years completed by all adults in Essex County was 10.6 years.

TABLE 11

EDUCATIONAL ACHIEVEMENTS OF ESSEX COUNTY ADULTS 25 YEARS AND OLDER [11]

Years of Schooling Completed	Essex County Adults						New Jersey Adults
	Male (267,430)		Female (304,272)		Total (571,702)		
	No.	Per Cent	No.	Per Cent	No.	Per Cent	Per Cent
ELEMENTARY							
None	7,488	2.8%	9,831	3.2%	17,319	3.0%	2.5%
1-4	14,278	5.3	14,694	4.8	28,972	5.1	4.5
5-6	19,661	7.4	20,844	6.9	40,505	7.1	7.1
7	16,891	6.3	16,533	5.4	33,424	5.8	6.5
8	47,512	17.8	58,001	19.1	105,513	18.5	18.4
HIGH SCHOOL							
1-3	53,904	20.2	62,295	20.5	116,199	20.3	20.4
4	50,600	18.9	79,951	26.3	130,551	22.8	24.5
COLLEGE							
1-3	22,122	9.3	23,223	7.6	45,345	7.9	7.7
4 or More	34,974	13.1	18,900	6.2	53,874	9.4	8.4

The data in Table 11 further reveal that almost 83 per cent of Essex County adults have not attended college.

In consideration of the normal aptitude of adults, it seems apparent from the data that Essex County adults are achieving far below their intellectual and academic potential. This, however, is not a characteristic peculiar to Essex County alone; this condition has been noted in all five counties in which County College feasibility studies have been conducted.

It seems reasonable to assume that the Essex County residents would probably make a much better showing both educationally and occupationally if increased higher educational opportunities were made available to a larger percentage of county youth and adults. The industrial leadership role of the County in the future will depend much on the educational opportunity available to the workers who must develop skills and competencies commensurate with the demands of the expanding technologies.

CHAPTER III

ESSEX COUNTY'S EDUCATIONAL CHARACTERISTICS

Essex County's School Enrollment

The total number of pupils enrolled in the public high schools grades 9 through 12 for the 1964-65 school year in Essex County was 45,705. See Table 12 on the following page. This ranks Essex County second among the twenty-one New Jersey counties; only Bergen County's high school enrollment is greater, with a total of 48,637.

Table 13, on page 26, gives the projected school enrollments for the public schools in grades Kindergarten through twelve for the different school years to 1970-71. Using a "straight-line" projection technique, Table 13 reveals the number of Essex County twelfth graders expected to graduate in the next seven years. Estimates of the graduates are as follows: 1965, 11,124 high school graduates; 1966, 11,753; 1967, 12,265; 1968, 11,332; 1969, 11,855; 1970, 11,926; and 1971, 12,174. In these projections parochial school enrollments have not been included.

Post-High School Educational Institutions and Programs Available in Essex County

Essex County has eight institutions of higher education located within its boundaries. The Newark campus of Rutgers, The State University, currently enrolls almost 2,600 full-time students. Seton Hall University in South Orange has about 2,200 full-time students and over 2,200 part-time students. The enrollment of Bloomfield College is over 700 full-time and about 30 part-time students. Caldwell College for Women enrolls almost 600 full-time and 200 part-time students. Northeastern Collegiate Bible Institute in Essex Fells accommodates almost 60 full-time students. Upsala College

TABLE 12

ESSEX COUNTY'S
PUBLIC SECONDARY SCHOOLS ENROLLMENT, 1964-65
(Grades 9, 10, 11, 12)1

Secondary School	Enrollment
A. Lincoln Junior H.S.	264
Arts H.S.	700
Barringer H.S.	2,337
Belleville Junior H.S.	413
Belleville Senior H.S.	1,150
Bloomfield Senior H.S.	1,870
Broadway Junior H.S.	349
Cedar Grove, Memorial H.S.	740
Central Evening H.S.	1,691
Central H.S.	1,626
Clifford J. Scott H.S.	823
Clinton Place Junior H.S.	454
Columbia Senior H.S.	2,050
County Voc. & Tech. H.S., Bloomfield	600
County Voc. & Tech. H.S., Irvington	524
County Voc. & Tech. H.S., Newark (Boys)	647
County Voc. & Tech. H.S., Newark (Girls)	578
Dem. H.S. of Montclair State College	119
East Orange H.S.	2,000
East Side H.S.	2,100
George Inness Junior H.S.	146
Glen Ridge H.S.	851
Grover Cleveland Junior H.S.	261
Heritage Junior H.S.	290
Hillside Junior H.S.	134
Irvington H.S.	2,275
James Caldwell Senior H.S.	841
Sub-Total	25,833

Secondary School (cont.)	Enrollment
Livingston Senior H.S.	1,479
Madison Junior H.S.	109
Maplewood Junior H.S.	258
Millburn Junior H.S.	325
Millburn Senior H.S.	969
Montclair Senior H.S.	1,582
Mount Hebron Junior H.S.	197
Mount Pleasant Junior H.S.	247
Mountain High Senior H.S.	733
Myrtle Avenue Junior H.S.	310
North Junior H.S.	296
Nutley H.S.	465
Orange H.S.	909
Seventh Avenue Junior H.S.	314
South Junior H.S.	280
South Orange Junior H.S.	342
South Side H.S.	1,700
T. Edison Junior H.S.	124
T. Roosevelt Junior H.S.	234
Vailsburg H.S.	1,325
Verona H.S.	909
Webster Junior H.S.	190
Weequahic H.S.	2,330
West Essex Reg. H.S.	979
West Kinney Junior H.S.	467
West Orange Senior H.S.	1,100
West Side H.S.	1,699
TOTAL	45,705

TABLE 13

PROJECTION OF ENROLLMENTS FOR
ESSEX COUNTY PUBLIC SCHOOLS
1963-64 to 1970-71

Grade	Enrollment							
	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
K	14,129	14,129	14,129	14,129	14,129	14,129	14,129	14,129
1	14,451	14,129	14,129	14,129	14,129	14,129	14,129	14,129
2	12,878	14,451	14,129	14,129	14,129	14,129	14,129	14,129
3	12,266	12,878	14,451	14,129	14,129	14,129	14,129	14,129
4	13,059	12,266	12,878	14,451	14,129	14,129	14,129	14,129
5	12,174	13,059	12,266	12,878	14,451	14,129	14,129	14,129
6	11,926	12,174	13,059	12,266	12,878	14,451	14,129	14,129
7	11,855	11,926	12,174	13,059	12,266	12,878	14,451	14,129
8	11,332	11,855	11,926	12,174	13,059	12,266	12,878	14,451
9	12,265	11,332	11,855	11,926	12,174	13,059	12,266	12,878
10	11,753	12,265	11,332	11,855	11,926	12,174	13,059	12,266
11	11,124	11,753	12,265	11,332	11,855	11,926	12,174	13,059
12	9,874	11,124	11,753	12,265	11,332	11,855	11,926	12,174
TOTAL	159,086	163,341	166,346	168,712	170,586	173,383	175,657	177,860

Note: A straight-line projection of enrollments as used in this Table is developed by advancing the enrollments one grade each year. No adjustments are made for drop-outs or new enrollees.

in East Orange has a few more than a 1,000 full-time and approximately 80 part-time students, Montclair State College has almost 3,300 full-time and 1,900 part-time students. Newark College of Engineering has approximately 2,300 full-time and over 2,300 part-time enrolled students. All eight institutions, thereby, provide facilities for about 10,000 full-time students and 6,800 part-time students according to current enrollment figures.

The curriculums available in the above four-year institutions are designed to serve the specific objectives of the baccalaureate degree and advanced programs, and to fulfill the special purposes of a four-year college or university. Information about the existing institutions is summarized in Table 14 on the following page.

Essex County has nine hospitals offering professional nursing programs and one offering a practical nursing training program. The professional nursing schools are located one each in Belleville, East Orange, and Montclair; two in Orange, and four in Newark. The practical nursing program is offered in Montclair. The combined enrollment of the nine professional hospital nursing programs is 870. Twenty-one students are enrolled in the practical nursing program.

The County's four Vocational-Technical High Schools offer several post-high school technical programs to Essex County residents. The current enrollments in the adult technical school programs are as follows: drafting and design technology, 225; electrical technology, 616; electronic technology, 1,057; heating and ventilation, 401; metallurgical technology, 361; and power and power plant technology, 55. Grand total is about 2,700 students. In addition, the Vocational-Technical High Schools offer programs in the vocational trades of baking, cabinet making, carpentry, custodial, dressmaking, foreman-ship, laundering, machine shop, air conditioning and refrigeration repairing, aircraft mechanics, auto mechanics, auto body repair, radio and television repair, plumbing, police science, printing, lithography, sheet metal, tool-making, welding, beauty culture, masonry, cafeteria managing, electrical maintenance, dental assistant, medical assistant, practical nursing.[2]

TABLE 14

INSTITUTIONS OF HIGHER EDUCATION IN ESSEX COUNTY[3]

College or University	Location	Type	Full-time Undergrad. Students Sept. '64	Full-time Freshmen September 1964		Principal Curricular Programs	Basic Student Tuition Per Year
				No. of Applications	Number Admitted		
Bloomfield College	Bloomfield	Private Church-related Co-ed.	716	815	186	Arts & Sci.	$850
Caldwell College	Caldwell	Private Church-related Women	594	450	202	Arts and Sciences; Business	$870
Montclair State Col.	Montclair	Public Co-ed	3,275	4,714	1,142	Education	$150
Newark Col. of Engr.	Newark	Public Co-ed	2,318	1,885	614	Eng. (Chem., Civil, Elect., Indust., Mech.)	$310
Northeastern Col. Bible Institute	Essex Fells	Private Church-related Co-ed	58	86	47	Religion; Bible Study	$320
Rutgers: The State Univ.		Public Co-ed					
Lib. Arts	Newark		2,232	2,646	694	Arts & Sci.	$400
Nursing	Newark		139	201	49	Nursing	$400
Pharmacy	Newark		222	100	61	Pharmacy	$400
Seton Hall Univ.	So. Orange	Private Church-related Co-ed	2,239	3,357	882	Arts & Sci.; Bus.; Edu.; Nursing	$747
Upsala Col.	E. Orange	Private Church-related Co-ed	1,046	1,640	426	Arts & Sciences	$1,100

There are 14 private trade schools in Essex County offering educational programs in the following vocational trades: air conditioning-heating-ventilation technology, architectural drafting technology, auto mechanics, automatic transmission maintenance and repair, checker-cashier, dental assistant, electrical drafting technology, electrolysis, electronic drafting technology, electronics-radio-television technology, mechanical dentistry, mechanical drafting technology, medical laboratory technology, medical office assistant, musical instrument repair, oil burner servicing, printing (hand composition, presswork, multilith operator, platemaking, photo offset) refrigeration technology, sewing and dressmaking, and switchboard-receptionist. In addition, there are 10 private business and business machine schools located in Essex County. The combined enrollment in all these schools in the various programs is approximately 1,600.

Extent of Attendance of Essex County Residents at Post-High School Institutions

Table 15 shows the actual enrollment of full and part-time Essex County students in New Jersey institutions of higher education as of March 1, 1964. The institution enrolling the greatest number of Essex County residents is Rutgers, The State University, with an enrollment of 3,381 full and part-time students. Second in the number, is Seton Hall University, South Orange, with 2,792 full and part-time students; followed by Fairleigh Dickinson University, with 1,682 full and part-time students.

The total number of Essex County residents attending New Jersey colleges and universities is 14,740 of which 8,027 are full-time students and 6,713 part-time.

TABLE 15

STUDENTS FROM ESSEX COUNTY
IN NEW JERSEY INSTITUTIONS OF HIGHER EDUCATION
March 1, 1964

New Jersey College or University	Essex County Students Enrolled		
	Full-Time	Part-Time	Total
UNIVERSITIES			
Drew	53	26	79
Fairleigh Dickinson	497	1,185	1,682
Rutgers	1,865	1,516	3,381
Seton Hall	1,168	1,624	2,792
SUB-TOTAL	3,583	4,351	7,934
LIBERAL ARTS COLLEGES			
Bloomfield	322	249	571
Caldwell	261	18	279
St. Elizabeth	91	32	123
Don Bosco	1	--	1
Georgian Court	21	--	21
Monmouth	80	54	134
Rider	90	--	90
St. Peters	127	26	153
Shelton	1	1	2
Upsala	399	565	964
SUB-TOTAL	1,393	945	2,338
STATE COLLEGES			
Glassboro	81	--	81
Jersey City	221	96	317
Montclair	644	488	1,132
Newark	704	--	704
Paterson	306	96	402
Trenton	115	8	123
SUB-TOTAL	2,071	688	2,759
PROFESSIONAL AND TECHNOLOGICAL			
Immaculate Conception Seminary	72	--	72
Newark College of Engineering	610	530	1,140
New Brunswick Theological Seminary	2	--	2
Princeton Theological Seminary	5	2	7
Stevens Institute of Technology	128	131	259
Westminster Choir College	7	--	7
SUB-TOTAL	824	663	1,487
JUNIOR COLLEGES			
Archangel	5	4	9
Centenary	39	--	39
Immaculate Conception	2	1	3
Northeastern	16	18	34
Trenton	1	--	1
Union	92	--	134
Villa Walsh	1	1	2
SUB-TOTAL	156	66	222
ALL INSTITUTIONS	8,027	6,713	14,740

Summarized in Table 16 below, are the number and per cent of Essex County high school graduates attending post-high school institutions of various types. In 1962, 51.6 per cent (or 3,940) of the 7,631 graduates attended institutions which required a high school diploma for entrance. In 1963, 52 per cent (or 4,127) of the 7,937 graduates attended educational institutions beyond the high school.

TABLE 16

ESSEX COUNTY PUBLIC HIGH SCHOOL GRADUATES ATTENDING POST-HIGH SCHOOL INSTITUTIONS[5] (1960-1963)

Type of Post-High School Institutions	1960		1961		1962		1963	
	No.	%	No.	%	No.	%	No.	%
College of Arts-Sciences	2,144	26.7	2,086	25.4	2,051	26.9	2,316	29.2
State Colleges	461	5.7	491	6.0	435	5.7	499	6.3
Engineering Colleges	206	2.6	261	3.2	217	2.8	222	2.8
Other Colleges	422	5.3	537	6.5	589	7.7	453	5.7
Sub-Total	3,233	40.3	3,375	41.1	3,292	43.1	3,490	44.0
Nursing Schools	138	1.7	133	1.6	104	1.4	108	1.4
Technical Schools	140	1.7	172	2.1	162	2.1	171	2.1
Business Schools	265	3.3	232	2.8	212	2.8	206	2.6
Others	183	2.3	165	2.0	170	2.2	152	1.9
ALL INSTITUTIONS TOTAL	3,959	49.3	4,077	49.6	3,940	51.6	4,127	52.0
Total Graduates	8,019		8,220		7,631		7,937	

Types and Extent of Enrollment in Community Adult Education Programs

In Table 17, on page 33, is a summary of the course offerings and enrollments in each of the community adult schools sponsored by Essex County local public school districts. A total of 20,494 adults in Essex County was enrolled in numerous non-credit subject-matter areas in the public school adult education programs during the 1962-63 school year. Over 3,000 additional adults attended Rutgers, The State University, adult program in Newark. In 1962-63, the total number of adult enrolled in the various avocational courses offered in the public schools exceeded 5,000; in commercial and distributive education subjects over 3,000; in Americanization courses over 1,600; and in homemaking and family living over 1,400.

TABLE 17

THE SUBJECT AND ENROLLMENTS OF THE COMMUNITY ADULT EDUCATION PROGRAMS SPONSORED BY ESSEX COUNTY PUBLIC SCHOOL DISTRICTS*
1962-636

Subject Area	Number Enrolled													
	Belleville	Caldwell-W. Caldwell	East Orange	Irvington	Millburn	Montclair	Newark (City & Broadway)	Newark (Weequahic)	Newark (West Side)	Nutley	So. Orange-Maplewood	West Orange	West Essex Regional	All Public School Districts*
Americanization	18	15	22	93	36	123	1,155	36	38	20	60	--	--	1,616
Arts and Crafts	31	95	63	54	109	387	29	84	16	108	168	66	11	1,221
Avocational	82	539	242	83	537	1,490	96	346	37	438	1,083	261	39	5,273
Civic & Public Affairs	--	35	12	--	--	243	--	24	36	--	502	--	--	852
Com. & Distrib. Ed.	65	399	145	325	141	788	74	330	401	309	297	93	6	3,373
Driver Education	39	--	41	19	--	51	22	19	31	--	26	51	--	299
Elem. & Remedial Ed.	--	--	--	--	--	--	--	110	23	29	--	--	--	162
English and Literature	13	31	51	149	50	378	114	76	14	97	276	33	17	1,299
Foreign Languages	11	91	41	47	270	569	99	67	54	94	417	76	30	1,866
Health, Safe. & Phys. Ed.	34	--	9	145	91	351	44	54	40	105	124	20	23	1,040
Homemaking & Family	17	162	57	76	120	455	43	40	40	152	242	32	--	1,436
Leadership Training	--	--	12	--	23	137	--	26	--	73	69	--	--	340
Music & Drama	--	135	--	45	97	312	--	70	10	96	248	25	--	1,038
Secondary & H.S. Equiv.	--	--	--	--	--	--	--	--	240	--	--	--	--	240
Vocational & Technical	8	39	--	42	--	121	80	42	12	17	51	27	--	439
Totals	318	1,541	695	1,078	1,474	5,405	1,756	1,324	992	1,538	3,563	684	126	20,494**

*In addition, Rutgers University Extension Division in Newark provides adult education programs in various commercial and academic subjects for 3,225 enrolled adults.

**At the time this summary was prepared, data for 1963-64 adult education enrollment were unavailable for Essex County. The grand total enrollments now exceed 28,000 adults.

CHAPTER IV

POTENTIAL ENROLLMENT OF THE PROPOSED COUNTY COLLEGE IN ESSEX COUNTY

Potential County College Enrollment for Essex County

There are several methods commonly used to estimate the potential full-time enrollment of a two-year community college. For this report, five formulae have been applied to estimate the potential enrollment for a County College in Essex County. Although the average age of community college students is about 25 years, the 18 and 19 year-olds are often referred to and considered the two-year college age population in determining potential full-time enrollment figures. Numbers utilized for future years are by necessity statistically projected estimates.

FORMULA I: The potential full-time enrollment of a newly established community college may be estimated by computing 30 per cent of the total number of 18 and 19 year-olds living in the county.[1]

Year	Number 18-19 Year Olds*	Potential County College Enrollment, Essex County (30% of Column 2)
(1)	(2)	(3)
1965	28,213	8,464
1966	30,957	9,287
1967	29,435	8,831
1968	29,698	8,909
1969	29,525	8,858
1970	30,327	9,098

*In arriving at the numbers of 18 and 19 year-olds for the years 1965 through 1970, figures obtained from the 1960 U.S. Census were utilized. The number of youth of ages 9 through 14 were projected the appropriate number of years to arrive at the estimated 18 and 19 year-olds for the various years cited. Although death rates were not applied to the 1960 quantities, it was believed that since Essex County has experienced about a two per cent population increase since 1950, future anticipated growth would compensate for any changes in figures due to deaths among these age groups.

FORMULA II: The potential full-time enrollment of a newly established community college may be estimated by using the ratio of one potential college student for every three pupils enrolled in high school grades 10, 11, and 12.[2]

School Year	Number in Public High Schools Grades 10-11-12*	Potential County College Enrollment, Essex County, (1/3 of Column 2)
(1)	(2)	(3)
1965-66	35,142	11,714
1966-67	35,350	11,783
1967-68	35,452	11,817
1968-69	35,113	11,704
1969-70	35,955	11,985
1970-71	37,159	12,386

*Figures for parochial high school enrollments were unavailable for the base year utilized in the projections. However, there were 5,379 10-11-12 grade pupils enrolled in Essex County parochial high schools during the 1962-63 school year.

FORMULA III: The potential full-time enrollment of a newly established community college may be estimated by:

A. Computing 20% of the total high school enrollment.[3]
or
B. Computing 25% of the total high school enrollment.[4]

School Year	Number in Public High Schools Grades 9-10-11-12**	Potential County College Enrollment, Essex County	
		20% Column 2	25% Column 2
(1)	(2)	(3)	(4)
1965-66	46,997	9,399	11,749
1966-67	48,276	9,655	12,069
1967-68	47,626	9,525	11,907
1968-69	48,182	9,636	12,046
1969-70	48,221	9,644	12,055
1970-71	50,037	10,007	12,509

**Figures for parochial high school enrollments were unavailable for the base year utilized in the projections. However, there were 7,591 9-10-11-12 grade pupils enrolled in Essex County parochial high schools during the 1962-63 school year.

FORMULA IV: The potential enrollment of a newly established community college may be estimated by computing 40% of the high school graduates in the county for the two preceding years.[5]

Reference Year	Number Public High School Graduates Two Preceding Years*	Potential County College Enrollment, Essex Co. (40% of Column 2)
(1)	(2)	(3)
1965-66	20,998	8,399
1966-67	22,877	9,151
1967-68	24,018	9,607
1968-69	23,597	9,439
1969-70	23,187	9,275
1970-71	23,781	9,512

*Figures for Essex County parochial high school graduates were unavailable for the base years utilized in the projections. However, there were 1,481 parochial high school seniors in the 1962-63 school year which may be considered as the 1963 graduating class.

FORMULA V: A questionnaire may be used to survey student interest in attending a County College. Information is obtained from all the 11th and 12th grade pupils. The total number of pupils who indicated they would attend a County College, if one were established, is considered to be the potential second year enrollment of a college.[6]

In October, 1964, a carefully designed study of prospective students' interest in a local community college was conducted for the purpose of this Report. A questionnaire survey of eleventh graders in a selected group of Essex County high schools was made by the staff of the Office of Two-Year Colleges and Terminal Education, New Jersey State Department of Education. High schools included in the study group were Columbia High School, South Orange; East Side High School, Newark; Irvington High School, Irvington; Weequahic High School, Newark; Essex County Vocational High School (boy's division), and Essex County Vocational High School (girl's division), Newark. Although the total number of pupils surveyed was 2,346 (approximately 20 per cent of the 11,800 eleventh graders enrolled in all of the County's public high schools), it was considered appropriate to utilize this group as a representative sampling of the entire County.

The results of this survey showed that 40.6 per cent of all eleventh graders surveyed (total 953) would attend a two-year community college if one were established in Essex County.

For the purpose of Formula V, it is necessary to project from the survey data the responses for both the 11th and 12th graders and the probable responses for the 11th and 21th graders in succeeding projected years. Since the above study limited its survey of student interest to eleventh grade pupils and the formula requires the results of two high school classes, appropriate equated figures had to be determined. According to the findings of a 1961 study made by the State Committee to Study Community Colleges and Technical Institutes, it may be assumed that the responses of eleventh grade classes surveyed in October, 1964, would closely approximate those of the twelfth graders of the same year.*

This Report, therefore, assumes that the 40.6 per cent would be applicable to both the eleventh and twelfth grade pupils as an index of desire to attend a County College, if one were available in Essex County. It is considered appropriate to apply this percentage to the current and future projected combined enrollments for eleventh and twelfth grades in Essex County. The results are considered reliable estimates of the responses that would be received from comparable future high school groups. The computations are summarized below.

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*". . . there are several aspects of the student responses that warrant particular mention; perhaps the most striking is the close parallel between the responses of the Seniors and Juniors . . . This parallel runs throughout the survey results. . ."[7]

School Year	Essex County 11th and 12th Grade Pupils*	Would Attend County College (40.6% of Column 2)
(1)	(2)	(3)
1965-66	24,018	9,751
1966-67	23,597	9,580
1967-68	23,187	9,414
1968-69	23,881	9,696
1969-70	24,100	9,785
1970-71	25,233	10,245

*Figures for parochial high school enrollments were unavailable for the base year utilized in the projections. However, there were 3,274 pupils of the 11 and 12 grades enrolled in Essex County parochial high schools during the 1962-63 school year.

All of the above enrollment estimates are for both years of the two-year college. The opening enrollment would be estimated at a figure less than one-half of the two-year potential, varying with the breadth of program, facilities, status of the new institution, and tuition cost.

Summarized below, in Table 18, are the data obtained from the various formulae used in estimating the full-time enrollment potential of an Essex County College.

TABLE 18

SUMMARY OF POTENTIAL
FULL-TIME STUDENTS

Year	F O R M U L A						Mean No. Students
	I	II	IIIa	IIIb	IV	V	
1965	8,464	11,714	9,399	11,749	8,399	9,751	9,913
1966	9,287	11,783	9,655	12,069	9,151	9,580	10,254
1967	8,831	11,817	9,525	11,907	9,607	9,414	10,184
1968	8,909	11,704	9,636	12,046	9,439	9,696	10,238
1969	8,858	11,985	9,644	12,055	9,275	9,785	10,267
1970	9,098	12,386	10,007	12,509	9,512	10,245	10,626

By 1965, Essex County could expect the enrollment potential in a County College to be 10,000 full-time students for both years. The most conservative estimate of potential is 8,400 students and the largest 12,500 for both college years. The figure for a 1966, 1967, or 1968 establishment date indicates a potential of about 10,000 students for two college years.

It is important to note, that enrollment estimates of a new college are subject to many variables such as: publicity given the college, the entrance and tuition policies of the institution, curricula offered, quality of leadership and faculty obtained, and the facilities provided. Of considerable importance is the number of youth attracted from adjacent areas outside the county, should the County College become a "receiving institution." This particular factor has not been considered in the foregoing enrollment estimates.

Based on the experiences of other states with a community college program, the part-time (evening session) enrollment may be expected to be about twice that of the full-time day session.

Number of Essex County Youths Pursuing Their Education After High School Graduation: Kinds of Programs

The findings of the questionnaire survey conducted for this Report showed that 2,346 high school Juniors responding, or approximately 66 per cent, plan to continue their education after graduation from high school.

The four year follow-up study of Essex County's 1960, 1961, 1962 and 1963 high school graduates provides some indication of the type of post-high school programs of interest to high school graduates. Of the total 1963 graduating class (7,937), 44 per cent enrolled in four-year colleges and universities, 2.1 per cent enrolled in technical schools, 2.6 per cent in business-secretarial schools, and about 2 per cent pursued various miscellaneous programs. Presently about 52 per cent of the County's high school graduates go on for further study. (See page 31, Chapter III)

It should be taken into account in the planning of County College programs that the post-high school educational activities are naturally limited by the availability of particular programs and are not necessarily indicative of the primary choices or desires of the high school graduates.

The Interest of Essex County Youth in a Two-Year County College

The October, 1964 survey of 2,346 eleventh graders from a selected group of public high schools in Essex County revealed that 953, or 61 per cent, of those pupils who were planning to go to college after high school graduation said they would go to a County College if one were established in Essex County. The local Essex County study committee found that 998, or 10.7, per cent of the twelfth graders would consider attending a County College if one were established.[8] This low percentage reported by the local committee is consistent with the findings of similar surveys which have questioned Seniors. By the twelfth year, most pupils have formulated fairly firm plans for their future education based on what is available and accessible to them. The responses of high school Seniors alone are not considered a reliable index of interest in a community college.

Major Factors Which Act as Barriers to College Education

Of the 2,346 Essex County high school Juniors surveyed for this Report, 263 said they were not planning to attend college. The most frequently marked reason for this decision was "I do not think my marks are high enough," by 175 pupils or 22 per cent. Other reasons significant in terms of numbers and percentage were "I prefer to work full time," cited by 158 pupils (20 per cent); "I cannot afford the cost of attending college away from home," mentioned by 54 pupils (7 per cent); and "I am expected to work so as to help out at home financially," listed by 46 (6 per cent).

With reference to these findings, financial barriers seem evident in the reasons for not planning to attend college for more than 33 per cent of the Essex County high school Juniors responding to the question. In a study reported in Education Beyond High School: The Two-Year Community College, a publication of the State Board of Education, the significance of the financial barrier to college education is further substantiated.

Educational Goals Indicated by Those Who Would Attend a County College

In the October, 1964 survey of 2,346 eleventh graders of selected Essex County high schools, the interests of the potential County College students were well distributed among the types of programs which a comprehensive County College would probably offer. About 36 per cent of the potential County College students were interested in a Liberal Arts-Sciences (university parallel) program. About 24 per cent were interested in Technical Education programs (excluding business training and health services programs which frequently are considered "technical".) About 26 per cent indicated Business Occupations programs and 10 per cent expressed interest in the Health Services, (such as clinical nursing, dental hygiene, and X-ray technology). The findings of this survey are remarkably consistent with those revealed in previous State studies to determine the need for a County College.

The data gatered by the State Committee to Study Community Colleges and Technical Institutes in 1961 revealed for Essex County the following distribution of potential students' interests in community college programs: approximately 31 per cent in Liberal Arts-Sciences (transfer and general studies); 18 per cent in Technical Occupations; 32 per cent in Business Occupations; and 11 per cent in Health Occupations.[9] Although some percentages have changed slightly since the 1961 Study, current student interest in County College program offerings are considered reasonably consistent with previous research findings.

Attitude of Parents Toward a County College in Essex County

The results of the student interest surveys conducted in Essex County have shown that most 11th and 12th grade pupils hope to continue their schooling after high school graduation. As stated in previous County College feasibility study reports of the State Department of Education, it is reasonable to assume that the parents of these youth, as well as many of those not included in this group, are typical of those surveyed in certain other counties in New Jersey and in other states. An overwhelming proportion of parents surveyed in a number of out-of-state studies desire a college education for their children, if financially attainable. Parents everywhere desire for their children the most optimum opportunities, educational as well as others.

There is evidence, as revealed by statements of various parent groups at social and civic meetings, the Essex County parents favor an Essex County College. A statement by Mrs. W. T. Mc Cormick, School Education Chairman of the Essex County Council of Parent-Teacher Associations (representing local P.T.A. groups) was as follows:

> The Essex County Council of Parent-Teacher Associations would like to go on record at this time in support of a 2-year County College and in support of this commission appointed by our Free-holders. We look forward to your report as to the specific needs of the children of Essex.[10]

Another supporter, the School Education Chairman, Mrs. Harry Muskat, of the Weequahic High School Parent-Teacher Association stated in February, 1964 that:

> At this time, we wish to go on record in support of this Commission [local county study committee]. If your ultimate findings indicate the need for establishment of a County College for Essex County, we pledge our support in your behalf to disseminate the facts for acceptance by the citizens and voters of the county.[11]

Mrs. S. C. Yorton, State Education Chairman of the American Association of University Women vouched for the support of that group as follows:

> The American Association of University Women in Essex County heartily supports the need for a two-year community college in Essex County. The branches of the AAUW are located in Bloomfield, Livingston, Montclair, Nutley, the Oranges and one from Essex County in general. This support is in accord with that of the State Division of the Association which is on record as favoring the establishment and financial support of two-year colleges in the state.[12]

As the state-wide two-year college movement has developed, representatives from the State Department of Education often have been invited to visit in Essex County to discuss with County educational and civic organizations, the need for additional post-high school educational facilities.

Various activities sponsored by Essex County citizens indicate enthusiasm and support for a community college in Essex County.

CHAPTER V

CURRICULAR NEEDS TO BE MET BY THE PROPOSED ESSEX COUNTY COLLEGE

Major Programs and Curricula of Interest to Prospective Students

The findings of the local Essex County study committee and data revealed by the surveys conducted for this Study have provided the basis for predicting the types of curricular programs which seem appropriate for the proposed Essex County College. The five major programs and curricula needed to meet the needs of the students of the proposed County College as revealed by surveys of high school pupils' interests and industrial personnel needs are:

A. A two-year Liberal Arts-Sciences (university parallel) program: chosen by about 36 per cent of the prospective County College students.

B. A two-year Technical Education program: chosen by about 24 per cent of the prospective students.

C. A General Education (two-year terminal) program: chosen by about 4 per cent of the prospective students.

D. Business Occupations program: chosen by about 26 per cent of the prospective students.

E. Health Services program: chosen by about 10 per cent of the prospective students.

F. Other: indicated by about 0.4 per cent of the prospective students.[1]

The above findings seem fairly consistent with the percentages for Essex County revealed by a 1961 State Study. The results of this study showed 31 per cent for liberal arts-sciences (transfer); 32 per cent business education; 18 per cent technical education; and 11 per cent for health science programs.[2]

A. Liberal Arts-Sciences (university parallel)

Whether a student has plans to enter a career immediately after two years of college work, or intends to pursue a four or five-year baccalaureate degree program, his community college program of studies should be designed to include courses in the humanities, social sciences, and natural sciences. Selection of courses, in addition to the general education requirements, should be dictated by the need to provide the foundation for a possible major at a four-year college, or the need for desirable intellectual experiences useful in the student's personal life.

It is desirable that the student be given a thorough introduction into the primary areas of education in a liberal arts-sciences (university parallel) program. Many of these transfer students will be preparing for ultimate entrance into a wide variety of professions, such as dentistry, optometry, teaching, anthropology, and the like. It would be impractical to develop courses and facilities that would specifically prepare each student for all such specialized areas. When a two-year college emphasizes collegiate-level subject matter, insists on adequate academic preparation and grades appropriately, there should be no expected difficulty in the transfer of students' credits to another institution of higher education.

B. Two-Year Technical Education

The technical educational curricula should offer students opportunities to acquire sound basic training for immediate employment upon completion of the two-year County College program. Generally, preparation is in the technical and scientific subject matter areas which are considered aids to the professional and supervisory professions in such fields as agriculture, engineering and health services. Courses in technical skills, e.g., basic drafting and manufacturing processes, and in technical specialities are essential to the various technologies.

The kind of courses which should be classified as general education in a technical education curriculum are those which have the best chance of fulfilling the following student aims: (1) to draw the student into vital new areas of intellectual experiences; (2) to increase the student's participation in his cultural heritage, and (3) to prepare the student to make sound judgements outside his field of specialized occupational preparation.[3]

A graphic illustration of the need and design of technical education in New Jersey is presented in the chart on the following page.

The two-year technical education curricula in a County College would most likely be structured as follows:

(a) 15-20 per cent of the entire curriculum devoted to general education subjects which would be pertinent to the technology. These may include such courses as economics, management, and human relations, English composition, public speaking, or technical report writing. The amount of time devoted to general educational subjects should be in proportion to the place that the general education of the individual occupies in the college's statement of objectives as well as the student's educational and vocational goals.

(b) 20-25 per cent of the curriculum allotted to mathematics and science principles and concepts, with appropriate applications to the major field of technical specialization.

(c) 30-40 per cent of the curriculum allocated to the development of laboratory techniques, instrument operation, and project work appropriate to the student's major field of specialization.

(d) 5-10 per cent of the curriculum allotted to the opportunity for acquiring manipulative skills (e.g., hand-tools, auxiliary machines, other intricate equipment).

(e) 5-10 per cent of the curriculum allowed for library research and/or elective courses.

C. General Education (two-year terminal)

Terminal programs in general education (basic and survey courses in the liberal arts and sciences) appeal to the student who wishes to complete his formal schooling in a two-year college. The student's program of studies would be designed to meet his own personal needs and interests.

PLANNING AHEAD

FOR TECHNICAL EDUCATION

Graphical — Technical — Mathematical — Linguistic — Communication Skills ··Plus·· Manipulative Know-How — Design — Development — Production — Research

ENGINEERING | HIGHWAY | CONSTRUCTION | DRAFTING AND DESIGN | HEATING AND VENTILATING | ELECTRONIC | ELECTRICAL | POWER PLANT

INSTRUMENTATION

TECHNICIANS

AUTOMOTIVE

GLASSBLOWING | NUCLEAR | RADIOLOGICAL | BIOLOGICAL | DIETARY | DATA PROCESSING | AGRICULTURAL | METALLURGICAL

Graphic Overview
OF
MAJOR TECHNICAL EDUCATION NEEDS

STATE OF NEW JERSEY
DEPARTMENT OF EDUCATION
VOCATIONAL DIVISION

-Devised By-
Nicholas F. Frigiola, P.E.
Director of Technical Education

D. Business Occupations

In the development of a business occupations program, in the proposed County College, consideration should be given to the needs of those who would want to specialize in such areas as general business administration, accounting, salesmanship, insurance, business machine technology, banking, or secretarial science. These subject-matter areas have been found to relate to the needs of the business and industrial firms in the area. The various curriculain the business occupations program should provide a high degree of technical competence leading to a responsible position in a specialized area of business.

E. Health Services

The programs in the health services of the proposed Essex County College should probably be designed to prepare students for such health services or related curricula as: nursing, medical laboratory technology, dental hygiene, and X-ray technology.

It is recommended that where individual courses, such as X-ray, hematology, blood bank techniques, or bacteriology are needed, and in which highly specialized instruction is required, the cooperation of outside agencies such as hospitals, industrial laboratories, and industrial firms be sought to provide the specialized teaching personnel and the laboratory facilities in off-campus locations.

F. Terminal Occupational Training

The community college does not necessarily need to limits its curricular offerings to a level which requires advanced mathematical and scientific preparation. By design and intent, this institution stands ready to offer to adults any occupation-centered curriculum for which there is a demand sufficient to warrant the offering of post-high school training. Preparation in any particular area may not be available in every community college; individual County Colleges might ultimately serve the needs of the entire State in specific occupational programs.

Courses below college-grade at the craftsman-clerical level, may meet the needs of both the out-of-school youth, who need preparation to provide them with skills needed to enter employment, and older persons, who require additional education to enable them to advance in present jobs or change to an entirely new type of work.

An analysis of the occupational opportunities of Essex County reveals the need for workers with various levels of technical training. The levels of preparation needed vary in the range of technical content, the amount and quality of underlying science and mathematics required for the occupation, and the length of study appropriate to attain compentency. Some occupational opportunities available in the industries and businesses of the County are technical in character yet require little background and short periods of preparation (e.g., airport maintenance, business machines and building construction). In planning formal training programs of this type, it is essential to keep in mind the variations found in the occupations and to set entrance standards and compentency requirements at realistic levels. Such programs would be designed and classified at an achievement level lower than that required for programs leading to the two-year Associate Degree. A "certificate of completion" is the award generally given to those who satisfactorily complete programs of this type.

The fact that certain courses included in a certificate program may have "transfer value" is incidental. The intent of such programs is to prepare the student to enter directly into employment after the program offered by the community college has been completed.

Many occupational training programs for adults will carry no college recognition, whatsoever, and will take only a few weeks or months to complete. Such programs may enroll both adults and out-of-school youth (including 16-year-old dropouts) in day and evening sessions.

Programs and Curricula Necessary to Fulfill Cultural and Educational Aspirations of Adults Pursuing Studies on a Part-Time Basis

The County College should play a significant role in the development of continuing, or adult eduation, in the county. That portion of the college's program generally referred to as "non-credit program" should be organized in close cooperation with existing community adult education programs in the county. A County College facility and its personnel could very well add prestige to the overall adult education program. Public school districts located in close proximity to the college should have the opportunity to call on the college's faculty for consultative services. Conversely, the County College should be able to use the local facilities and personnel for the purpose of promoting their program whenever appropriate and practical. The County College, working in conjunction with adult education specialists might well take the initiative in developing a cooperative approach to adult education for the county.

Relatively few of the total number of individuals in need of and capable of benefiting from formal adult educational programs of the vocational preparation type are presently obtaining such instruction. The increasing demands for trained manpower, current economic and social developments, changes in the various occupational fields, advancements in science and technology, and other developments, indicate the necessity for extending adult vocational preparation programs and for modifying existing programs. All persons sixteen years or older, not enrolled in a high school program, who desire vocational instruction, should have an opportunity to enroll for such education. High school graduates with, or without, a high school background in vocational education should have an opportunity to continue or enter this important field. Furthermore, there is great need for this type of education for the handicapped, the aging, the migrant from rural areas to cities, migrant farm workers, displaced and unemployed workers, and individuals who drop out of school.

A need for continuing programs for up-grading and retraining of adults is indicated for Essex County. The increasing demand for skilled labor and the competition in the labor market, demands a higher level of educational achievement for the worker.

A review of the non-credit course offerings in the community adult schools of Essex County (see Table 17) indicates a strong interest in the commercial and distributive education courses.

Student Guidance and Counseling Functions of a County College

Traditionally, the guidance and counseling functions of the community college have been significantly emphasized, resulting in these institutions being referred to as "guidance oriented colleges." The objectives of the college's student personnel program are synonymous with the instructional program. Instruction and guidance are interwoven and interrelated functions, each vitally important to the individuals' overall educational growth.

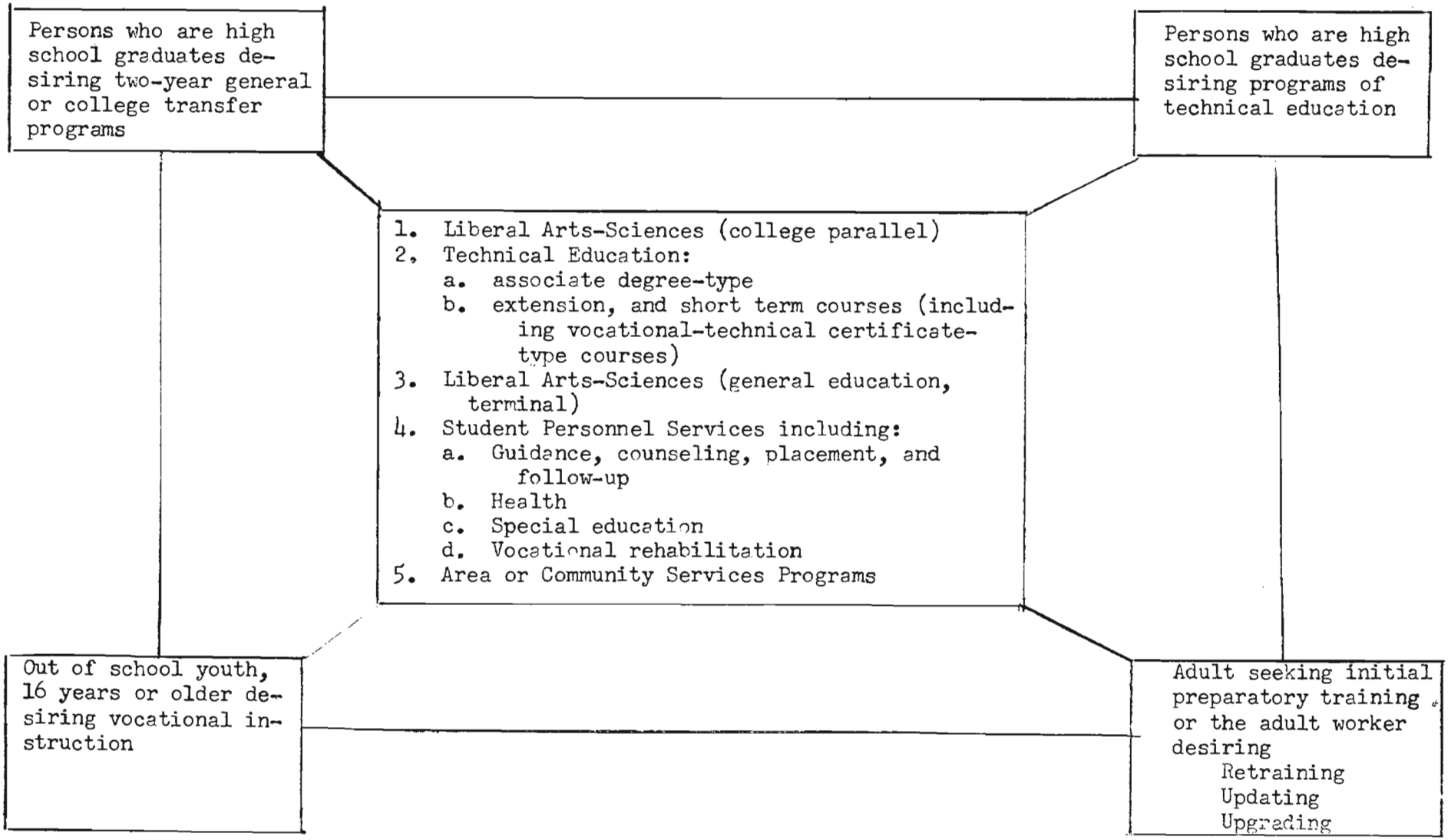
The multifold character of community colleges and the heterogenious backgrounds and aptitudes of students who attend them, require that student counseling in this type of institution be emphasized, with quality a fundamental essential. Only if its importance is fully recognized can the counseling program discharge its responsibility adequately to the individual students and to the community college in which it functions.

On the following page is a graphic description of the relationship of program and services of a community college and the personnel it serves.

The commuting student and his diverse needs pose special counseling responsibilities for the County College. The objectives of the student activities program should, therefore, include provision for meaningful educational experience in social and organizational situations and the maintenance of a desirable balance between curricular and co-curricular programs.

THE MULTIPLE PURPOSE COMMUNITY COLLEGE

The center rectangle represents programs and services performed by a community college. The small outside rectangles represent the people that would be served by such an institution.



Specific Curricula to Meet County Employment Needs

For the purpose of the present Study, an interview survey of Essex County's industrial personnel needs was conducted in October, 1964. Forty-seven (47) selected industrial firms, businesses, and institutions were chosen for investigation. It is believed that these organizations and institutions comprise a cross-section of the County's activities which reflect diversified technical research, development, production and general business operations.

The study of industrial personnel needs indicated a need for technological programs in the following areas:

1. Chemical
2. Electronics
3. Metallurgical
4. Electrical
5. Biological
6. Scientific Glassblowing
7. Civil (Engineering)
8. Data Processing
9. Ceramic
10. Instrumentation
11. Cermet
12. Mechanical
13. Power Plant
14. Construction
15. Drafting & Design
16. Automotive
17. Heating & Ventilating
18. Air Conditioning[4]

As revealed by the findings of several pertinent studies, the industries and businesses in New Jersey need a continuing supply of highly qualified, professional, technical and skilled workers to maintain and improve services and production. When considering a County College program of vocational-technical education, primary attention must be given to needs of existing industries of the sponsoring county. However, in addition to local employment opportunities, county residents should be provided with the opportunity to qualify, by preparation, for job openings available outside the boundaries of any one county.

In addition, an Essex County College should consider offering the following programs in the health sciences: nursing, X-ray technology, and medical laboratory technology.

Also, programs in general business, accounting and secretarial science should be considered.

Extent to Which the Proposed Educational Programs Would Duplicate Existing Programs Provided by Other Agencies

Located in Essex County are eight institutions of higher education which offer several curricula leading to the Bachelor's and advanced degrees. See Table 14, page 28. These four-year colleges and universities provide a minimum of courses in the technologies below the Bachelor's Degree level with the exception of Newark College of Engineering which offer some non-degree two-year technical programs.

Essex County supports and operates the Essex County Vocational Schools in the following locations and divisions.

(1)	Bloomfield	--a.	Vocational and Technical High School
		b.	Adult Technical School
(2)	Irvington	--a.	Vocational and Technical High School
		b.	Adult Technical School
(3)	Newark (Sussex Ave.)	--a.	Boys Vocational and Technical High School
		b.	Adult Technical School
(4)	Newark (North 13th St.)	--a.	Girls Vocational and Technical High School
		b.	Adult Technical School
(5)	Newark (Morris Ave.)	--a.	Adult Technical School

This county-wide program functions on the trade preparatory, trade extension (including supplementary apprentice training), and non-collegiate technical education levels. During the school year 1963-64 enrollments were distributed in the manner summarized in Table 18 below.

TABLE 19

TOTAL ENROLLMENT IN FULL-TIME DAY COURSES
September 1, 1963 to June 30, 1964
ESSEX COUNTY VOCATIONAL AND TECHNICAL SCHOOLS[5]

Regular Students	Blmfd.	Irvington	Morris Ave.	Newark (Boys)	Newark (Girls)	Total
Vocational High School Courses	454	467	97	627	905	2,550
Technical High School Courses	678	1,214	884	358	358	3,492
Adult Technical Courses	1,267	888	602	550	49	3,356
Total	2,399	2,569	1,583	1,535	1,312	9,398

In planning the curricular offerings in the proposed Essex County College, it is strongly recommended that a careful study be made to evaluate the programs offered by each of the above institutions, Table 18. Evening programs as well as the full-time day curricula should be examined to ascertain if serious conflicts may develop. Enrollees for the presently established courses may find it advantageous to transfer to a newly established County College. Some conflict is anticipated but, with full cooperation of all concerned, this could be easily resolved. Most noteworthy, however, is the fact that the spectrum of technical education is sufficiently wide and varied of purpose so as to permit much latitude in course offerings thereby avoiding undesirable duplication in the County Vocational High Schools and the proposed County College.

Anticipated Citizen Cooperation

Throughout Essex County, in interviews, public discussions and individual group meetings, support for the establishment of a County College has been evident. Typical of the comments voiced by Essex County citizens, are the quotations given on the following page.

State AFL-CIO Education Committee
R. Joseph Bruder

> . . .In all truth, for thousands upon thousands of young people, we are already too late, but this, of course, is not of your doing. The main business before you and the officials of this county is to repair the neglect of many years and place Essex County in the stream of the mid-twentieth century in recognizing what the basic needs of these times are. And one of these certainly is the establishment of a two year county college in Essex . . .[6]

Anvil Enterprises, Inc.
Henry A. Dyson

> In our confrontation of many people at Anvil Enterprises, we meet many unskilled people who could have been skilled if a junior college had existed. A great number of these people are youngsters who possess great intelligence but not enough money to attend a four year college. Therefore they remain in a low income bracket or on the unemployed list. . .[7]

UAW AFL-CIO
Emanuel Mann, International Representative

> . . .A County College will mean social progress. We believe we must establish a County College. The UAW pledges its support.[8]

Greater Newark Council of Churches
Conrad H. Massa

> The Greater Newark Council of Churches, . . . expresses this strong endorsement of a two-year county college, . . . /and/ pledges to the County of Essex its own resources for the further interpretation of this need to the citizens of this county.[9]

Americans for Democratic Action
Derek Torrey Winans, Chairman, Essex County Chapter

> The need for the establishment of a junior college here in the largest of New Jersey's counties is beyond dispute. Moreover, the need is so pressing, that we must move with great speed.[10]

N. J. State Federation of Teachers
Charles Allen

> We believe it is impreative that Essex County should . . . establish one or more two-year county colleges . . . We strongly urge the Freeholders of Essex County to furnish this service at the earliest possible time.[11]

CHAPTER VI

THE PHYSICAL PLANT NEEDS OF THE PROPOSED COUNTY COLLEGE IN ESSEX COUNTY: THE SITE AND BUILDINGS

Planning Overview

The initial overall planning of County College facilities should be broad in scope and forward-looking in design. Such plans should serve as a basis for future action and contain sufficient detail to permit future expansion and needed changes. A plan that is flexible enough to satisfy the forseeable needs and provides for the unpredictable future is the ideal. All planning for County College plant and equipment requirements should be based upon the pertinent facts related to providing needed educational services for a given number of students in a specific geographical area.

There are certain fundamentals important in the study of the physical plant needs of a community college. One, these colleges are not scaled-down universities or modified high schools. They are institutions with their own identity and with individual objectives aimed at serving particular local higher educational needs. The special space requirements of many occupational-type programs offered by community colleges stress the importance for planning flexibility beyond that of the high school or the four-year college. Two, there are many common characteristics of community colleges that may be observed in the planning of an institution of comparable purpose. Appraisals of community college campus plans developed in other states have revealed that the variety of educational programs generally offered frequently demands more space than had been initially anticipated by the planners.

At this stage of the development, there are no established and tested building guides for community colleges. However, any planning that goes into the creation of such an institution must take into account how this college's own unique purposes may be best implemented.

The Site Needs for a County College

After considering the experiences of existing community colleges throughout the United States, the consensus of specialists in the field is that a site of approximately 100 acres is needed for a comprehensive community college program. One New Jersey county is now preparing to utilize for its County College a site in excess of 200 acres and another is developing a campus on a tract containing more than 400 acres. Although the New Jersey State Board of Education's criteria for the establishment of County Colleges indicate that an area as small as 45 acres would be acceptable, it is understood that a desired pattern of flexibility may dictate a need far beyond this minimum requirement. California State Department of Education specialists think in terms of 50 acres being made available for parking alone so as to adequately provide for the future expansion of a community college in that state.

It is evident, of course, that some counties in the State of New Jersey will find sites of sizable acreage practically impossible to obtain. It is important, however, that for the proper development of a community college program, every effort be made at the outset to provide sufficient land to accommodate the desired program.

There are many variables that have to be considered in developing a college--such as the curricular needs, the probably enrollment in future years, the changing concepts in educational philosophy, and the changing educational needs of the geographical area. It is well for a

county to take these influences into consideration when planning the location and site for the County College campus.

In consideration of the above factors, this Study Committee is apprehensive about the recommendation of the local county study committee which proposes that the Essex County College be located on a tract of approximately eight acres.[1] It is recognized that in Essex County the availability of large tracts of land is very much restricted. It is also obvious that the future years will not enhance this situation. And because of this factor, if no other, Essex County should explore every possible means for obtaining, at the beginning, a site of adequate size. The final selection of a site and acreage should be based not only on what is currently desired and easily obtained but also what can be envisioned for the future.

Several factors which are of primary importance in the selection of a community college site are:

A. The area should provide adequate space for the college's immediate and long term requirements as defined in a "master plan" for its future growth and expansion;

B. Environmental surroundings should be appropriate to an institution of higher learning. It should provide aesthetic surroundings removed from commercial-industrial areas;

C. The topography should permit economical construction of buildings and provide maximum utilization of land;

D. It should be accessible by established routes of travel and, to a lesser degree, convenient to public transportation;

E. It should be geographically located near the center of the county rather than near the present center of population;

F. The quality of the soil conditions should be appropriate to campus needs;

G. It should be accessible to needed utilities.

Probable Costs for Plant and Equipment

The probable capital expenditures for a seven-hundred (700) student County College have been carefully considered by the local county study committee.[2] The present Study has revealed only a few points of difference with the local study. Some of the findings discussed below are simply extensions of the expense items included in the local committee's report.

The local study committee's allocation for 150 square feet per student for initial construction is properly labeled as the "minimum number of square feet required per student" if a technical program of the size anticipated is adequately provided for in the plant construction program.[3] It should be noted, however, that the flexibility being prescribed, nationwide, for the community colleges might be seriously restricted by any initial building proposal that is based on minimums. Certain other New Jersey local studies of need for County Colleges have favored the allocation of 175 square feet per student for initial construction.

In consideration of the prospective students' interest in occupational-technical programs, reinforced by the personnel needs of industry in Essex County, this Study Committee believes it is advisable to use 175 sq. ft. per student as an index for estimating construction needs for the proposed Essex County College.

The unit cost of construction for the proposed college has been estimated by the local study committee to be $24.85 (or $25.00)[4] per square foot. This seems to be a reasonable estimate for this area of the State.

Using the figures indicated above, the basic construction cost for the proposed Essex County College would be $3,062,500 (700 students x 175 sq. ft./student x $25/sq. ft.).

Using a 15 per cent estimate for furnishings (15 per cent of basic construction cost), the result is $459,375 for furniture and equipment. The total estimated cost for construction and furnishings is $3,521,875 which represents a slightly higher estimate than the local committee's estimate ($3,000,033)[5] for these items.

In predicting the overall costs for a County College plant, there are additional items for which capital allotment should be made to insure sufficient funds for a complete capital program. These are costs for architect's fees, bonding and legal fees, site development, land acquisition, and contingency.

Architectural fees represent an expense item in practically all construction programs. The prevailing rate in New Jersey is approximately 6 per cent of the basic construction cost which in this particular case would amount to $183,750.

Bonding and legal fees are also an integral part of any construction program and these will ordinarily not exceed two per cent. In many cases, this may be established as a flat fee or may be at a lower percentage, but for reasons of precaution against under-estimating, a safe figure is indicated here. For the proposed Essex County College a two per cent fee for bonding and legal services would amount to $61,250.

Site development is generally listed as a separate capital item beyond the basic five contracts for construction. This would include grading and paving, the provision for walks and driveways, parking and recreational areas, landscaping, and other outdoor facilities necessary

for the implementation of the program. Most qualified estimators consider the site development expense to be between five and ten per cent of the basic construction cost. Using the minimum percentage (5%), this item would be about $153,125.

Planning should allow for minor changes that will emerge as the proposal is refined. The most careful planning is subject to change through developments that occur between the time of the original concept and the finalization of the construction drawings. These changes may involve design, materials, finishes, techniques, or built-in equipment. These usually increase the costs beyond the basic construction estimates. Even after the final drawings have been developed and approved, other physical changes may be wanted, possibly adding to the cost of the project. For these reasons, some provision should be made for contingencies that will arise whether from changes in philosophy, proposed purposes of areas, curricular revisions, general upgrading of the planned facilities, or any other developments beyond the control of the participants doing the initial planning. No concrete figure can be established for these variables, but an acceptable practice provides at least five (5) per cent of the construction cost as a reasonable contingency fund. Based on the construction cost estimate, about $153,125 should be estimated for contingencies.

The question of land acquisition is very difficult to evaluate. Many factors are involved in this consideration and at the time of this Study there is little basis for estimating this cost. Several counties have already received land gifts for County College sites and perhaps Essex County will be equally fortunate. However, the County should be aware of this possible cost and be prepared to set aside some reasonable amount for site purchase. The amount would be based on local conditions,

availability of land, and specific needs of the proposed County College. The determination of how large the site would be, its location and its accessibility to utilities, will have a significant bearing on the eventual cost.

To recapitulate, the possible capital costs for the proposed 700-student County College for Essex County are as follows:

A.	Basic Construction	$3,062,500	
B.	Furniture and Equipment	459,375	
C.	Architect's Fees	183,750	
	Sub-total	$3,705,625	
D.	Bonding and Legal Fees	$ 61,250	
E.	Site Development	153,125	
F.	Contingency	153,125	
	Grand total	$4,073,125	(Plus site acquisition if necessary)

Some Guides for Science Laboratory Facilities

Consideration of specifications available for college science laboratories may be helpful in the initial planning. The floor areas of the laboratories for the biological and physical sciences should be planned on the basis of about 40 square feet per student exclusive of storage areas. The average total floor area of recently constructed laboratory rooms is about 900 square feet which accommodates a maximum of 24 students at one time. Adjacent to each laboratory room there should be a preparation room with an area of 400 to 500 square feet. It is recommended that all laboratory rooms be designed to serve no more than 32 students at any one time. Consideration should be given to inclusion of demonstration tables in all classrooms which may be used for

science instruction. "Tote rooms" might be utilized to expand the use of laboratories by providing more storage space than that available in laboratory tables.

While costs vary widely, average overall costs for science laboratory furnishings and equipment would range from $10,000 to $15,000 per room, with biology laboratory being on the low side and the chemistry laboratory being on the high side. The average costs of laboratory apparatus and supplies to initially equip the same rooms would range between $7,500 and $12,000. These average costs do not include construction costs.

Instructional Facilities Needed to Provide a Quality Educational Program in a County College

Since the County College must house an extremely wide range of activities and will frequently vary considerably in enrollments, the planning presents a great challenge. In spite of the potential differences, certain common characteristics among them exist. The most common to all are the basic curricular programs (university-parallel and technical education programs) and the needed facilities related to these programs.

A 1962 report of the New Jersey State Board of Education pointed out that education of youth in colleges requires more than buildings for classrooms. The report outlined the following needs:

> Education of youth in colleges and universities today requires more than classroom buildings. The necessary complex of coordinate and supporting facilities includes:
>
> A. Instructional Facilities
>
> --Classrooms, general and specialized laboratories, music and art studios; shops, conference, lecture and study rooms; administrative and faculty offices; research and experimental installations, such as clinical facilities offering services to the handicapped; mathematics and statistics computing

center; laboratory schools; field experiment stations; research center for the study of governmental administration and of labor and management problems, and the like.

---Libraries

---Physical Education Facilities - gymnasiums and playfields

B. Student Life Facilities

---Food Services, Bookstore, Student Organizations' Offices; Social and Recreational Facilities. . .

---Parking Facilities

---Auditoriums and Little Theaters

C. Faculty Offices and Conference Rooms

. . . In planning classroom buildings, provision should always be made for faculty offices and conference rooms . . . A faculty office is related to the service which the faculty member makes. It is only when there is a possibility of conference with an individual or with a small group of students that the best teaching can be done. Classroom work alone does not measure the faculty load.

D. Study Rooms for Commuting Students

. . . There is a very great lack of spaces for study in the publicly supported colleges. Students go to class and then have one or more vacant periods. For those who commute, and that is the great majority of the student body, the spaces now provided in student centers are crowded and study is all but impossible. In every college that serves a commuting population, the opportunity for study should be as certainly available to students who live in dormitories. Rooms equipped for study, in addition to those equipped for recitation purposes, should be established in each of the publicly supported institutions.

E. Facilities for Physical Education

. . . Physical well-being is essential in the growth and development of youth. Gymnasiums and playfields to accommodate the total population should be considered a necessity.[6]

The State Board of Education also recommended in January, 1961 that: Such plant and equipment [community colleges] should be continually reconsidered in view of changing needs, development and expansion.[7]

This degree of flexibility should be built into a "master plan". Various stages of campus and plant development should evolve from it. A master, or developmental, plan provides a valuable force which can help bridge the time between present and future. Such a plan may never be realized as it exists at any given time because it is a dynamic, evolving idea. . . not a final, crystalized set of plans.

There are five keys to plant planning, not often expressed, which may be useful to those who will be involved in the development of the specifications for a County College. Cognizance of these should add another dimension to sound planning of educational facilities.

(1) The plant, itself, can teach an appreciation of beauty, the orderly usefulness of space, the possible interrelationships of parts and the spirit of harmonious living. Aesthetics of the building, itself, can help in establishing an environment for learning;

(2) The building should not only serve the students and faculty of the college but also should be designed to cooperate in meeting certain community needs which a college campus can provide;

(3) All parts of the building, especially the instructional areas, should be designed and equipped to provide conditions under which the students would learn best. An environment and equipment which tends to motivate both the student and the teacher will do much toward providing a better program;

(4) A County College of the type proposed for Essex must provide areas for work, relaxation and student activities since there will be many hours during the week when the student remains on

campus with hours intervening between classes. To provide the stimulus necessary for maximum effort, it would be desirable to provide many non-instructional areas as an integral part of the facilities;

(5) Most important is a master plan for the future expansion of the college. This should indicate where additions would go, what they are to house, how they would be located on the site, what their relationship would be to the existing structure and how this future expansion could be accomplished at minimum cost.

Recent Trends in Community College Planning and Construction

Each year finds new innovations in educational plant facilities. Some are tested experimentally until time and practice develop acceptance and then they become a part of improved planning. Only with change can upgrading occur. As the planners for an Essex County College explore the probable solutions to the physical plant needs there are certain to be items of more recent development that will be taken into consideration. Since the basic estimations for capital cost are generally founded on traditional approaches, any acceptance of variations can encompass additional costs. But, on the other hand, it is also possible that they may effect material savings as well as improved educational environment. The extent to which these innovations may become a part of the County College plan should be decided before the preparation of the educational specifications.

Some recent trends are described below:

A. Increased use is being made of free span construction with easily moved partition walls planned in modules.

B. More consideration is being given to the overall maintenance costs of college buildings. Masonry material is being used for both the exterior and interior of buildings.

C. Nylon tile floor covering is being used in most areas and carpeting has been found to be very practical for the library and offices.

D. The college is being planned for year-round operation and for use from 12 to 15 hours per day. This extensive use requires that the plant be adequately air-conditioned.

E. Provisions for radio and TV transmission and receiving are being included in construction.

F. Study carrels are being provided in classroom and laboratory buildings as well as in the library area.

G. Multi-purpose science laboratories are being used and large laboratories to accommodate 50 to 75 students have been designed.

H. More emphasis is being placed on individualized developmental programs of physical education rather than intercollegiate athletics. This practice would cut down on spectators' seating area in the gymnasium. Outdoor sports areas are being used to decrease the use-time of gymnasiums.

I. Computers and data-processing machines are increasingly being used for such purposes as fiscal accounting, student accounting, and book store inventories.

J. Individual classrooms and laboratories are being provided with film projectors and other audio-visual aids at the time of initial construction.

K. More vending machines are used to provide food services.

CHAPTER VII

FINANCIAL ABILITY OF ESSEX COUNTY TO ESTABLISH AND OPERATE A COUNTY COLLEGE

The net debt of Essex County was $42,769,875. as of December 31, 1964. This amount is 0.9597 per cent of the average equalized valuations of $4,456,296,898. .

The legal borrowing capacity of the County (2 per cent of the average equalized valuations of the last three preceding years) is $89,125,938. . The present available unused borrowing capacity is $46,356,063. .

The school law (N.J.S.A. 18:22-101) provides that no county shall issue bonds for County College purposes in excess of one-half of one per cent of equalized valuation of property. Since the average equalized valuation of property in Essex County is $4,456,296,898. , this amount would provide a County College borrowing capacity of $22,281,484. . A bond issue of $2,037,000.* estimated for the capital outlay program (rounded off to nearest even ten-thousand dollars) is well within the limits of the County's capacity.

The local Essex County study committee has proposed a 15-year retirement period for a County College bond issue.[1] If this were acceptable, the annual maturities (based on a $2,037,000. bond issue) may be estimated at $136,000 for 14 years and $133,000 for the 15th year.

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* See Chapter VI for details of capital outlay expense

Assuming that the County's bonds would carry at an interest rate of 3 per cent, the interest costs would be approximately $61,000. a year. The initial total debt service expense for a County College would be $197,110. ($136,000. + $61,110.) annually. If the County chooses not to make a payment on the principal for the first year of the loan, the debt service expense would include only the $61,110. for interest.

With an annual debt service of $197,110. for the proposed County College, the County's tax rate would be increased $.004 for each $100 of equalized valuation of property.* Since county taxes are apportioned to each municipality within the County according to the equalized valuations, the increased tax on a home, the true value of which is $10,000 would be $.40 for a $197,110. debt service and may be expected to be the same for each municipality.

Cost of Operation for a County College in Essex County

The findings of various studies indicate that emphasis should be placed on curricula both in the liberal arts and sciences and in vocational-technical education. The County's overall economic conditions further verify the need to promote occupational type programs in the proposed college, on the college degree level and on the craftsman-clerical level.

The need for technical and scientific curricula is significant in considering operational costs of the proposed County College since the teaching staff for these fields would most likely be employed at

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*Note: A debt service expense of $61,110., assuming no payment on the principal of the loan, for the first year of operation would add $.0012 to the tax rate for each $100 of equalized valuation.

the upper levels of the salary scale in order to compete with salaries of industry. In consideration of these variables and the rising cost of both labor and supplies, an operating cost of $800 per student per year as estimated by the local study committee is defensible. However, if the County College program is well organized and administered, it would be possible to operate the college at the present time for about $100 less than the estimated $800 per student. The present per capita cost of the New Jersey State Colleges is about $750, excluding auxiliary services. Generally the operational cost of a two-year college program is about 20 per cent less than the cost of a similar four-year program.

The following is a summary of possible resources for current operation based on a $700 per capita operational cost. It is presented as a suggestion only, since the amount of student tuition would actually be determined by a County College board of trustees, subject to the approval of the State Board of Education.

Summary of Possible Income Sources
for the First Year's Current Operation
(350 students, estimated minimum enrollment)

Source of Funds	Amount per Student	Full-time Students	Total Amount
ESSEX COUNTY	$250	350	$87,500
STATE	$200	350	70,000
STUDENT	$250	350	87,500
TOTAL	$700	350	$245,000

It should be noted that the sources of income for current operations listed above show only the first year's revenue for full-time students. In addition to the tuition fees from full-time students, the college would charge tuition fees for part-time students who take

courses during the late afternoon and evening. It is reasonable to expect, that for the programs offered to part-time students, the initial operating costs would be somewhat less than the total amount of student tuition which would be received. In effect, the resources from full-time students would not be needed to support the evening program. For State aid purposes, students enrolled in part-time programs will be equated to full-time students with the appropriate payments being made to the institution.

If the County's share of the first year's current operating costs were $87,500. (assuming 350 students and $250 per capita, summarized above), this would add $.0018 to Essex County's tax rate for each $100 of equalized valuation of property.

Summarizing, the findings of this Study show that Essex County's share of the first year's cost for establishing a 700-student County College and operating it to serve 350 full-time students the first year would amount to $284,610. ($197,110 debt service + $87,500 current operation), representing a $.0058 county tax rate increase per $100 of equalized property valuation.*

There seesm to be sufficient and valid evidence which indicates that Essex County could afford to finance the proposed County College without undue tax burden to the local taxpayer.

Planning the County College Budget

Although it is impracticable, at this time, to develop an operating

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*Note: If no payment is made on the principal of the loan for the capital program, the County's share of the first year costs would be approximately $148,610. ($61,110 debt service + $87,500 current operation), representing a $.003 county tax rate increase per $100 of equalized property valuation.

/All tax rate increases are based on 1964 net valuation on which county taxes are apportioned./

budget for the proposed County College, information relevant to how the resources may be distributed through the major expenditure categories for a program to be offered to the full-time students, may be important for planning purposes. Table 20, below, compares the percentage distribution of current expenditures for community colleges in three selected states.

TABLE 20

CURRENT OPERATING EXPENSE BY TYPE
AND PER CENT FOR COMMUNITY COLLEGES
IN THREE SELECTED STATES

Type of Expense	Per Cent of Total Expenditures		
	Colorado[2] 1961-62	Texas[3] 1961-62	Florida[4] 1960-61
A. General Admin.	8.5%	7.9%	---
B. General Expense Student Services Staff Benefits General Institutional	17.5	5.7	0.2
C. Instruction and Rel. Act.	55.1	69.4	68.4
D. Libraries	5.4	2.4	4.5
E. Operation and Maint. of Plant	12.4	14.2	7.2
F. Fixed Charges	1.2	---	0.5
G. Other Items Public Services Reserve	---	---	20.2

The classification of expenditures in the above table will vary not only by state, but from institution to institution according to the organization, size, and special interests. Such data, however, may serve as a basis for understanding the overall distribution of expense for a two-year college operation.

The following are estimated budget distributions of expenditures for the operation of the proposed Essex County College based on $245,000

operational fund source for 350 first year full-time students; allocations are flexible and submitted as a guide only.

Summary of Operational Expenditures

Academic Salaries Includes all academic personnel, administrators, and teachers; about 60 per cent of total budget.	$147,000
Non-Academic Salaries Includes secretarial, clerical, business office staff and maintenance employees; allocation about 20 per cent of total budget.	49,000
Maintenance and Supplies Includes fuel, utilities, consumable supplies, office, printing, household items, educational supplies for classroom use, purchasing of books for annual college library needs after the initial establishment of the library; about 10 per cent of the total budget.	24,500
Services Other Than Personal Includes travel expenses, telephone, insurance, household expenses paid to service agencies, membership in professional organizations, postage, entertainment, consultation services, etc.; about 3 per cent of the total budget.	7,350
Maintenance and Replacements Includes funds for maintenance of buildings and grounds, office equipment, educational equipment, etc. (salaries for maintenance personnel not included); about 3 per cent of the total budget.	7,350
Additions and Improvements Includes all equipment used for maintenance purposes, office or instructional departments; (Not to be confused with funds being allocated for equipment purposes from local bond issue proposal. It is not a duplicate of that item.) about 4 per cent of the operating budget.	9,800
Total Expenditure	$245,000

Since instructional expense is the major item in an operating budget, professional personnel salaries are an important consideration. Shown in Table 21 are summary data on salaries paid to the faculty and to certain selected members of the administration in public two-year colleges. This information concerning average salaries obtained in a national

survey seems significant; particularly, since all institutions of higher education are now, or soon will be, faced with the problem of securing and holding qualified personnel. Adequate financial provisions must be made in order to solve this problem. Data contained in Table 21 are presented as information only and not as a proposal. In general, the salaries in the metropolitan area near New York and Philadelphia can be expected to be among the highest.

TABLE 21

NATIONAL ANNUAL SALARIES PAID TO PUBLIC TWO-YEAR COLLEGES FACULTY AND ADMINISTRATION 1963-64[5]

Position	Median Salary	Range of Salaries	Third Quartile Point (Lowest salary of top 25%)
Faculty (9 months)	$ 7,828	below $3,000 to $14,750	$ 9,337
President	13,517	7,000 to 26,500	16,290
Dean of Instr.	11,688	5,500 to 21,000	15,300
Director of Voc.-Technical Educ.	10,062	5,000 to 17,500	12,333
Director of Adult Education	10,083	4,500 to 17,000	12,499
Librarian	7,989	4,000 to 16,500	9,341
Registrar	8,625	below 3,000 to 16,500	10,249
Business Manager	9,115	4,000 to 21,000	11,624

The median salary of public two-year college teachers (Table 21) was $7,828 for 1963-64. Two years previous, this figure was $7,212. In

1963-64, 1.2 per cent of the full-time teachers earned $12,000 or more, and about 16 per cent earned $10,000 or above.[6]

The use of a formal salary schedule by public two-year colleges is a common practice. Over 80 per cent of these institutions maintain a formal salary guide. A typical public two-year college salary schedule provides for minimum and maximum amounts; designates from 12 to 15 steps from minimum to maximum; applies the same schedule to men and women; recognizes different levels of professional preparation; and provides for an annual increase of about $250 (plus).[7]

One question frequently asked is "Can the County Colleges compete in the open manpower market for the number and the quality of personnel needed to staff their programs?" The leadership in every type of college will need to extend the effort to make greater use of the available instructional staff. Without doubt, the college student-teacher ratio will be increased. However, the evidence is encouraging that systematic efforts to prepare college teachers are being sharpened.

The intangible rewards, satisfactions beyond dollar compensation, are being pointed up to attract the interest of scholarly minded students to the profession of college teaching. Recruitment is beginning to command serious attention. If the future obligations of higher education to society are to be met, however, the task should be viewed in new dimensions. Few in the public are alert to the already present implications. The leadership in higher education needs to be equipped with fact, hard, undeniable, up-to-date facts concerning the quality of instruction in the classroom, and the competition in the open market for the limited number of persons of the required competence to go forward with higher education in the State and in the Nation.[8]

Funds to compete successfully with other professions for qualified and competent personnel seem to be available to only a few colleges and universities. These foregoing conditions will have immediate and long range affects on the financial program of a County College.

CHAPTER VIII

SUMMARIES AND CONCLUSIONS

SUMMARIES

I. The County College Concept

A. A locally controlled public institution of higher education designed to serve the post-high school needs of youth and adults.

B. A two-year college, adaptable to the needs and interest of a heterogeneous student body, offering university-parallel, terminal general education, technical institute type, and continuing adult education programs.

C. A community-oriented college with reasonable student tuition rates and accessible to qualified students in their home environment.

D. An institution which is earning increased recognition as a strong and important link in the educational chain which supplements and strengthens the programs of four-year institutions and professional schools.

E. A rapidly growing collegiate institution which is exceptionally attractive to students because of the distinctive characteristics named above.

II. Population and Sociological Conditions in Essex County

A. In 1960 the population of Essex County was 923,545, an increase of 17,596 or about 1.9 per cent, over 1950. By 1980 the County's population is predicted to be 979,789, almost a 6 per cent increase over 1960.

B. Newark, the County's largest city, had a population of 405,220 in 1960; about 43 per cent of the County's total population.

C. Since 1950, the number of children "under 18" has increased 23 per cent. The number of children in the County between ages 10 and 14 has increased approximately 42 per cent.

D. The principle economic activity in Essex County is manufacturing, employing over 127,000 people. Electrical goods and machinery is the largest type of manufacturing; providing employment for about 27,000 workers. Retail trades and financial-insurance represent the next two largest industries.

E. About 60 per cent of the County's labor force (about 400,000 in 1960) is concentrated in four main categories: operatives, clerical, craftsmen-foremen, and professional and technical.

F. The median family income in Essex County for the year 1959 was $6,651; the State's average for the same year was $6,786. About 40 per cent of the families living in the County earned between $4,000 and $7,000 a year.

G. In 1960, about 23 per cent Essex County adult residents, 25 years or older, had graduated from high school and about 9 per cent had graduated from college. The proportion of high school graduates in the adult population of Essex County is about two (2) per cent less than the adult population for New Jersey. The percentage of college graduates in the adult population of the County is one (1) per cent more than the percentage of college graduates in the adult population of the State.

H. About 83 per cent of the Essex County adults have not attended college at all.

III. Essex County Educational Characteristics

A. With almost 46,000 pupils enrolled in the County's public high schools, the County ranks second among the twenty-one counties of the State. This number is expected to exceed 50,000 by 1970. Slightly more than 11,000 are expected to graduate from the public schools in June, 1965.

B. The post-high school institutions include eight colleges and universities; the County's adult technical programs with 2,700 enrolled; nine hospital schools of nursing; and 24 private trade, technical, business, and business machine schools.

C. A total of 4,127 (about 52 per cent) of the 1963 high school graduates attended some institution of advanced study after graduation. About 44 per cent attended a college or university after high school graduation.

D. In 1964, a total of 8,000 Essex County residents was enrolled as full-time students in the New Jersey institutions of higher education.

E. During the school year 1962-63, the thirteen community adult programs in Essex County enrolled a total of 20,500 students.

IV. Potential Student Enrollment of the Proposed County College in Essex County

A. The mean enrollment potential (both years) of the proposed Essex County college is 10,000 full-time students for the year 1965-66. The enrollment potential for part-time students is about twice the number of full-time students.

B. In response to an October, 1964, questionnaire survey of eleventh graders in six of the County's public high schools, about 66 per cent indicated plans to attend college after graduation. Presently, about 52 per cent of the County's high school graduates go on for further study after high school.

C. When questioned in the Fall, 1964, about 41 per cent of the Juniors in a public high school study group indicated that they would attend a local two-year County College if one were available.

D. The expressed interests of potential County College students indicates a need for a comprehensive community college program.

E. Financial barriers seem evident in the reasons given by the youth of the County for not planning to attend college.

V. Curricular Needs to be met by the Proposed Essex County College

A. A two-year university-parallel program in Liberal Arts-Sciences; and a two-year program in Technical Education fields would meet the needs of about 96 per cent of the prospective students. About 36 per cent of the prospective County College students would be interested in the Liberal Arts-Sciences; about 50 per cent would be interested in technical or business programs; and about 10 per cent would be interested in health services programs.

B. Technical education and scientific curricula in electronics, chemical, metallurgical, scientific glassblowing, data processing, drafting and design, heating and ventilation, mechanical, construction, power plant, cermet, electrical, instrumentation, ceramics, biological, automotive, nursing, medical laboratory, X-ray, general business, accounting, and secretarial science are in demand in Essex County to accommodate employment needs of local industries, businesses and hospitals.

C. Industries, businesses and hospitals in Essex County are in need of properly trained personnel and have indicated a very favorable attitude toward a County College program in the County.

VI. The Physical Plant Needs of the Proposed County College in Essex County: The Site and Buildings

A. The needs by 1965-66 for post-high school educational opportunities in Essex County will require County College facilities to serve about 10,000 full-time students.

B. The local Essex County study committee has recommended that the first building phase of the proposed County College be designed to accommodate 700 full-time students. According to enrollment projections, this number represents about seven per cent of the total probable enrollment.

C. The selection of a site and the planning of physical facilities for an Essex County College should place special emphasis upon plant needs for: adequate instructional space, area for student life activities faculty offices and conference rooms, study rooms for commuting students, and facilities for physical education.

D. The estimated plant area needed to accommodate 700 students is 122,500 square feet (700 x 175 sq. ft.). At $25 a square foot, the basic physical plant of the proposed size would cost $3,062,500. Adding to this sum the cost of furniture and equipment, architect's, legal-bonding fees, site development and a five per cent contingency would bring the overall cost to $4,073,125. No cost estimates for the acquisition of site have been made.

VII. Financial Ability of Essex County to Establish and Operate a County College

A. The outstanding debt of Essex County (December 31, 1964) was $42,769,875. The present available unused borrowing capacity is $46,356,063.

B. The County College law provides that no county shall issue County College bonds in excess of one-half of one per cent of the equalized valuation of all property within the county. The average equalized valuation of property in Essex County is $4,456,296,898. This sum provides a maximum borrowing capacity for County College purposes of $22,281,484.

C. The estimated construction cost of the proposed Essex County College is $4,073,125. A County bond issue (one-half of total) would probably be set at a figure of $2,037,000. This amount is well within the borrowing capacity of the County.

D. The annual debt service for capital outlay may be planned to not exceed $136,000 with the proposed 15-year amortization program. The total debt service (principal plus 3 per cent interest) would add $.004 to the County's tax rate for each $100 of equalized valuation.

E. The evidence indicates that the per capita cost for current operations will be about $700. . . to be shared by the State (not to exceed $200 per equated student), the County and the student. The County's share of current operations for the first year enrollment of 350 full-time students (one-half of initial capacity) may be estimated at $87,500. This would add $.6018 to the County's tax rate for each $100 equalized valuation.

CONCLUSIONS

A. There is sufficient and reliable evidence of a need for a County College in Essex County.

B. A County College in Essex County should provide curricular programs in

1. Liberal Arts-Sciences (university-parallel)

2. Two-Year Technical Education (both collegiate level and non-credit type), including broad offerings in general business and health services.

3. Continuing (Adult) Education, with particular emphasis on the first two above.

C. Physical facilities should be planned to accommodate a potential enrollment of 10,000 full-time students. The first building phase should be designed to serve the County's proposed minimum of 700 full-time students.

D. Essex County is financially able to construct and operate a County College.

REFERENCE NOTES

~~CHAPTER I~~

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[2]New Jersey Statutes Annotated, Title 18, Education, (Newark, New Jersey: Soney and Sage Co.) 18:20-100, et seq.

[3]Education Beyond High School: The Two-Year Community College, A Report of the New Jersey State Board of Education to the Governor and the Legislature (Trenton, New Jersey: New Jersey State Board of Education, January, 1961), pp. 4-5.

[4]Frederick M. Raubinger, "Serving the Youth of New Jersey Through Public Two-Year Colleges", Toward Higher Education (Trenton, New Jersey: New Jersey State Department of Education), 2:2, Summer, 1961.

~~[5]New Jersey Statutes Annotated, op. cit., 18:22-100 (a).~~

[6]Marshall P. Smith, New Jersey's Undergraduates, 1954-1973, Survey of Future Facilities in Higher Education for New Jersey (Trenton, New Jersey: New Jersey State Board of Education, 1956), p. 65.

[7]George D. Strayer and Charles R. Kelley, The Needs of New Jersey in Higher Education, 1962-1970, A Study Prepared for the State Board of Education, (Trenton, New Jersey: New Jersey State Board of Education, April, 1962), p. 5.

[8]Ibid.

[9]Ibid., pp. 5-6.

[10]Ibid., p. 6.

[11]Education Beyond High School, op. cit., p. 5.

[12]Ibid., pp. 8-9.

[13]Ibid., p. 9.

[14]Ibid., p. 6.

[15]What is it Worth and What Does it Cost? Fidelity Mutual Life Insurance Company, (Philadelphia, Pennsylvania, 1963), pp. 18, 32, 36, 46.

CHAPTER II

[1]New Jersey Department of Conservation and Economic Development, Population Age Groups in New Jersey (Trenton, New Jersey: The Department, March, 1963), pp. 20-21.

[2]Ibid., p. 71.

[3]New Jersey Department of Conservation and Economic Development, Population Trends in New Jersey (Trenton, New Jersey: The Department, July, 1961), p. 27.

[4]New Jersey Department of Conservation and Economic Development, Research and Statistics Section, "New Jersey Estimated Population Projections", (Trenton, New Jersey: The Department, April, 1961), (mimeographed).

[5]United States Bureau of the Census, United States Census of Population: 1960. General Social and Economic Characteristics, New Jersey, Final Report PC (1)-32C (Washington, D.C.: U.S. Government Printing Office, 1962), p. 307.

[6]The New Jersey Almanac, 1964-1965, (Upper Montclair, New Jersey: New Jersey Almanac, Inc., 1963), p. 464.

[7]Ibid., p. 465.

[8]United States Bureau of the Census, op. cit., p. 305.

[9]Ibid., p. 309.

[10]Ibid.

[11]Ibid., p. 303.

CHAPTER III

[1]New Jersey State Department of Education, Division of Curriculum and Instruction, "Enrollments as of September 1964."

[2]Data Supplied by the Division of Vocational Education, New Jersey State Department of Education.

[3]Data prepared by the Division of Higher Education, New Jersey State Department of Education.

[4]New Jersey State Department of Education, "Report Number 245," (Trenton, New Jersey: Bureau of Research, August 16, 1963).

[5]The Need for a Two-Year County College in Essex County, Report of the Essex County College Study Commission authorized by the Essex County Board of Chosen Freeholders (Newark, New Jersey: June, 1964), passim.

[6]New Jersey State Department of Education, Bureau of Adult Education and Academic Credentials, "Annual Report, 1962-63."

CHAPTER IV

[1]Michigan State University, Iona County Community College Study (East Lansing, Michigan: Office of Community College Cooperation, Michigan State University, 1962).

[2]Florida State University, Florida's New Community Junior Colleges (Tallahassee, Florida: Florida State University, 1957).

[3]Iowa State Department of Public Instruction, Education Beyond High School Age: The Community College (Des Moines, Iowa: The Department, 1963).

[4]New Mexico State Department of Education, New Mexico's Needs for Further Post-High School Education (Santa Fe, New Mexico: The Department, 1956).

[5]H. H. Semans, T. C. Holly and others, A Study of the Need for Additional Centers of Public Higher Education in California (Sacramento, California: California State Department of Education, 1957).

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[7]Education Beyond High School, op. cit.

[8]The Need for a Two-Year County College in Essex County, op. cit.

[9]Education Beyond High School, op. cit.

[10]The Need for a Two-Year County College in Essex County, op. cit.

[11]Ibid.

[12]Ibid.

CHAPTER V

[1]The Need for a Two-Year County College in Essex County, op. cit.

[2]Education Beyond High School, op. cit.

[3]Middle States Association of Colleges and Secondary Schools, Junior Colleges, and Community Colleges, Document No. 4.60 (New York: Middle States Association, 1958). p. 2.

[4]"Interim Report of Study of the Needs for Technical Education in the Proposed Two-Year County College in Middlesex County, New Jersey", Division of Vocational Education, New Jersey State Department of Education, pp. 7-8. [See Appendix B for list of industries surveyed]

[5]Data Supplied by Division of Vocational Education, New Jersey State Department of Education

[6]The Need for a Two-Year County College in Essex County, op. cit.

[7]Ibid.

[8]Ibid.

[9]Ibid.

[10]Ibid.

[11]Ibid.

CHAPTER VI

[1]The Need for a Two-Year County College in Essex County, op. cit.

[2]Ibid.

[3]Ibid.

[4]Ibid.

[5]Ibid.

[6]George D. Strayer, op. cit., pp. 60-63.

[7]Education Beyond High School, op. cit., p. 9.

CHAPTER VII

[1]The Need for a Two-Year County College in Essex County, op. cit.

[2]Colorado State Department of Education, Community Junior Colleges, Enrollments, Staffs, Finances, 1958-59 through 1961-62 (Denver, Colorado: Division of Research and Statistics, June, 1963).

[3]Texas Education Agency, The Public Junior Colleges of Texas, A General Report for the Academic Year 1961-1962 (Austin, Texas: The Agency, February, 1963).

[4]Florida State Department of Education "Analysis of Expenditures," Junior College Report for 1960-61, p. 11. (Mimeographed)

[5]National Education Association, Salaries Paid and Salary Practices in Universities, Colleges, and Junior Colleges, 1963-64, (Washington, D. C.: Research Division Research Report 1964 R3, February, 1964) pp. 46, 56.

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A P P E N D I X

A

NEW JERSEY STATE DEPARTMENT OF EDUCATION
Division of Higher Education

Inventory of Educational Plans

This questionnaire is being administered by the State Department of Education. The purpose is to obtain your reactions to specific questions which will help to determine your County's immediate needs for providing two years of college education and training.

To accomplish this, a public two-year community college has been proposed. This college would offer a wide variety of up-dated curriculums realistically designed to meet this County's post-high school educational needs. It is anticipated that the college will offer day and evening programs which may be described as follows:

1. Liberal Arts-Sciences, (2-year curriculum) - For students who plan to transfer to the third year of a four-year college or university in order to work for a bachelor's degree.

2. Technical Education, (2-year curriculum) - For students who wish to prepare for the engineering, scientific or industrial technologies in order to enter industry at the technician's level. Should a graduate of a technical curriculum decide to continue his technical education after graduating from the two-year college, he may transfer to a technical college or university and pursue a professional course in a related field.

3. General Education Curriculum - For the student who wants one or two years of college education in a general program of the arts and sciences.

4. Business Education - For those who may desire education and training in business management, accounting, secretarial or certain other related business fields.

5. Health Services - For students interested in dental hygiene, nursing, x-ray or certain other medical specialized areas.

6. Evening Adult Programs - For the upgrading or re-training of employed or unemployed adults in present fields of employment or new fields in which there is an interest.

The proposed two-year college will have no dormitories; the students would live at home and commute daily to the college.

The tuition fee for the proposed college is expected to be about $300.00 per year.

QUESTIONNAIRE FOR PUPILS

(Please answer all questions)

(Mark with X)

COUNTY _____

SCHOOL _____

1. MALE _____

2. FEMALE _____

QUESTION (A) Are you planning to continue your education following your graduation from high school?

YES 1. _____

NO 2. _____

NOT SURE 3. _____

QUESTION (B) If the answer to QUESTION (A) is NO or NOT SURE, then place an (x) opposite the chief reason which describes why.

1. I am not interested in going to college. . . . . 1. _____
2. I prefer to work full time . . . . . 2. _____
3. I plan to enter military service . . . . . 3. _____
4. I am expected to work so as to help out at home financially . . . . . 4. _____
5. I cannot afford the cost of attending a college away from home. . . . . 5. _____
6. I plan to get married and assume homemaking responsibilities. . . . . 6. _____
7. I do not think my marks are high enough. . . . . 7. _____
8. Other (specify) . . . . . 8. _____

_____

_____

_____

QUESTION (C) If answer to QUESTION (A) is YES, would you attend a two-year community college if one were established in this County?

YES 1. _____

NO 2. _____

QUESTION (D) If answer to QUESTION (C) is YES, which one of the curricula programs listed on OTHER SIDE would you select?
(Indicate 1, 2, 3, 4, 5 or 6) (___)

QUESTION (E) If for any reason, financial or otherwise, you have not planned to attend college, would the establishment of a two-year community college in your county now make it possible?

YES 1. _____

NO 2. _____

From: Guy V. Ferrell
Director of Community and
Two-Year College Education

A P P E N D I X

B

ORGANIZATIONS AND INSTITUTIONS SURVEYED FOR THIS REPORT

by: Nicholas F. Frigiola

Organization or Institution	Person(s) Interviewed
1. Airco Plastic Products Co. Belleville, N. J.	C. W. Peacock Vice President of Administration
2. Allegri-Technical, Inc. Nutley, N.J.	Joseph J. Spears Executive Vice President
3. American Abrasive Metals Co. Irvington, N. J.	J. J. Caroll Office & Personnel Manager
4. American Aluminum Casting Co. Irvington, N.J.	Charles Hartl President & Treasurer
5. Andrew Jergens Co. Belleville, N.J.	William Crowe Personnel Manager
6. Anheuser-Bush, Inc. Newark, N.J.	H. Poeschla Asst. Dir. Industrial Relations
7. A. P. Smith Mfg. Co. East Orange, N.J.	Edward G. Love Personnel Manager
8. Arde Engineering Newark, N.J.	J.K. Winkelbauer Personnel Representative
9. B. J. Lucarelli Co., Inc. Newark, N.J.	B. J. Lucarelli President
10. Boker and Co., Inc. Maplewood, N.J.	Norman L. Heckel Personnel Manager
11. Champlain Co. Roseland, N.J.	Miss Guerrero Asst. Personnel Manager
12. Clara Maass Memorial Hospital Belleville, N.J.	Harold C. Widman Dir. of Personnel & Public Rel.
13. Curtiss-Wright Co. Caldwell, N.J.	Robert DeCoulaz Labor Relations Supervisor
14. Dupont, E.I. DeNemours & Co. Newark, N.J.	G. R. LeBlanc/W.B. Bragdon Employer Relations Supervisors
15. Eisler Engineering Co. Newark, N.J.	Charles Eisler Chairman of Board

ORGANIZATIONS AND INSTITUTIONS SURVEYED (Cont.)

Organization or Institution	Person(s) Interviewed
16. Engineers Inc. Newark, N.J.	Joseph Rosenthal, Pres. John P. Fleuren, Per. Mgr.
17. Englehard Industries, Inc. Newark, N.J.	R. T. Williams Personnel Manager
18. Epoxy Products, Inc. Irvington, N.J.	H. M. Zilliox Plant Manager
19. Essex House Newark, N.J.	David Dappaport Hotel Manager
20. Hoffman-LaRoche Nutley, N.J.	Nelson Klaner Plant Personnel Manager
21. Industrial Plastics & Engr. Co. Verona, N.J.	Mrs. Turner Personnel Supervisor
22. Industry Publications, Inc. Caldwell, N.J.	Mrs. Kanar Offic Manager
23. Kuthe Laboratories Newark, N.J.	Jerry Lynch Production Manager
24. Linde Co. Newark, N.J.	W. A. Myers, Jr. Personnel Administrator
25. Monroe International Orange, N.J.	W. S. Oliwa Computer Mfg. Manager
26. National Newark & Essex Banks Newark, N.J.	Bruce T. Dunnon Personnel Director
27. Nesor Alloy Corp. Caldwell, N.J.	M. Jacobsen Vice President
28. Orange Roller Bearing Co., Inc. Orange, N.J.	Edwin F. Kopp Asst. Treasurer
29. Parker Construction Co. Newark, N.J.	Joseph Katowitz President
30. Peerless Tube Co. Bloomfield, N.J.	Mrs. Warnquist Dir. of Personnel
31. Pittsburgh Plate Glass Co. Bloomfield, N.J.	R. Balinsky Industrial Relations Manager
32. Planet Mfg. Co. Bloomfield, N.J.	I. A. Greenfield Treasurer

ORGANIZATIONS AND INSTITUTIONS SURVEYED (Cont.)

Organization or Institution	Person(s) Interviewed
33. Prudential Insurance Co. of America Newark, N.J.	Samuel Simmons Personnel Consultant
34. Public Service Electric & Gas Co. Newark, N.J.	M. Hebble Educational Director
35. Resistoflex Corp. Roseland, N.J.	G. J. King, Jr. Personnel Manager
36. Schering Corp. Bloomfield, N.J.	C. Fetzer Headquarters Personnel Manager
37. St. Vincents' Hospital Montclair, N.J.	Arthur J. Kuhn Dir. of Public Relations
38. Tung-Sol Electric Co., Inc. Newark, N.J.	David O. Dicksen Manager of Personnel Admin.
39. Thomas A. Edison Industries West Orange, N.J.	H. W. Heunemann Employment Manager
40. Universal Chain Co., Inc. Maplewood, N.J.	L. J. Berkhout Supervisor
41. Universal Mfg. Co., Inc. Irvington, N.J.	William Arends Office Manager
42. Vitro Laboratories West Orange, N.J.	M. F. Fleming Administration Manager
43. Walter Kidde & Co., Inc. Belleville, N. J.	John Kidde Chairman of Board
44. Westinghouse Electric Corp. Bloomfield, N.J.	J. E. Fox Manager of Industrial Relations
45. Weston Instruments, Inc. Newark, N.J.	R. E. Lindstrom Employment Manager
46. Wilbur B. Driver Co. Newark, N.J.	Henry J. Tymecki Personnel Director
47. Williamson & Co. Caldwell, N.J.	Arne Ekstrom Vice President