

JANUARY 27, 1969

**Delaware
Technical
and
Community
College
SECOND REPORT
by the
board of Trustees**



DELAWARE TECHNICAL AND COMMUNITY COLLEGE
DOVER, DELAWARE 19901

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TO: The Honorable Russell W. Peterson
Governor of the State of Delaware

Members of the General Assembly

In accordance with Title 14, Delaware Code, Chapter 91, the Board of Trustees of the Delaware Technical and Community College submits this second report on activities and recommendations.

The report provides a review of programs and progress during 1967 and 1968, serial to our first report dated December 27, 1966. It explores future educational needs of the people of Delaware as these relate to the objectives of Delaware Technical and Community College; recommends a course of action; and requests funds to proceed on that course.

Our principal recommendation is that we begin promptly to construct permanent facilities at two locations in northern Delaware to become operational in 1972. Initially, they will provide educational opportunities for 2,500 full-time day students. Longer range, it will be necessary to expand these facilities for a potential full-time day enrollment of at least 3,500 by 1975 and about 7,400 by 1985. Total headcount, including part-time day and evening students, will be about 2.5 times the full-time day enrollment. Until adequate permanent facilities are available, we propose to continue operating the temporary facility now in use in Wilmington, which has a capacity of about 1,000 full-time day students. We also plan to continue operating the Delaware Technical and Community College, Southern Branch in Georgetown, expanding programs there as the educational needs increase.

The Board tentatively estimates that capital funds in the amount of \$15,043,000 will be needed to acquire sites, complete construction, and equip the new facilities for the Northern Branch. At this time, the Board requests that the General Assembly appropriate \$2,850,000 to purchase land, proceed with the definitive design phase, and obtain firm cost estimates to complete each of the proposed new units. A second appropriation request would then be submitted to the General Assembly about February, 1970, for the balance of the capital funds required.

No request is made here for operating funds, these being provided by separate appropriations.

The accompanying report describes this proposal in detail and provides the basis for our recommendations.

Respectfully submitted,

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summary of report

This report summarizes the activities of Delaware Technical and Community College during 1967 and 1968 (Section 2); appraises future educational needs as they bear upon objectives and functions of the College (Section 3); and recommends a construction program to meet these needs (Section 4). The capital required to implement this program to 1972 is tentatively estimated at \$15,043,000. At this time, the Board of Trustees requests the General Assembly to appropriate \$2,850,000 to purchase land, proceed with the definitive design phase, and obtain firm estimates of building costs. A second appropriation request for the balance of the funds required would then be submitted in February, 1970.

Created in August, 1966, Delaware Technical and Community College now has two facilities in operation. One is in Georgetown; the other is housed in temporary quarters in the northeastern sector of the City of Wilmington. Activities at both locations are discussed, but the principal focus of this report is on the future. Submitted here is a plan to meet community educational needs for the next five years and to provide a basis for orderly, planned expansion in subsequent years as requirements increase.

Delaware Technical and Community College currently provides job-oriented educational opportunities and programs of general studies for a total of 2000 Delawareans. At year-end 1968, enrollment at Georgetown was about 1200; at Wilmington, about 800. There is room at each location for some increased enrollment. At Georgetown, it appears that the physical plant can absorb the projected increases for the time being. However, at Wilmington forecasts of student population make it clear that the present facilities will be overburdened by 1970 and wholly inadequate to the need thereafter.

Enrollment forecasts for the Northern Branch of Delaware Technical and Community College, as set forth in this report, indicate that day and evening students will total about 4700 in 1970. By 1985, the total is expected to be about four times as great. It is not feasible to expand the present facilities in Wilmington, nor would the Board recommend spending any large sum for improvements or renovation in these rental quarters.

activities in 1967-1968

aims

Delaware Technical and Community College was created to provide an open-door, two-year, comprehensive program of education and training beyond the high school level. Its purpose is to help students develop their potential in semiprofessional and occupational areas and, by so doing, help the community expand its economic base and upgrade its employment force. The curricula of the College focus primarily on courses that match employment opportunities in commerce, industry, and government. Admission to any branch of the College is open to all Delaware residents with a high school education or its equivalent, who can benefit from the courses offered.

While the College curricula are strongly job-oriented, they are not limited by strict career boundaries. General educational programs are offered to help students develop in the broader responsibilities of citizenship, and course offerings are available to students preparing themselves for transfer to four-year colleges and universities.

Nor are the courses of instruction pointed only toward young men and women in a position to attend school full time. The College is committed to a broad span of day and evening programs for those who wish to expand and upgrade their present job skills.

A more detailed statement of Delaware Technical and Community College's objectives will be found in the first report from the Board to the Governor and General Assembly, dated December 27, 1966.

activities

In keeping with its objectives, Delaware Technical and Community College has in the past two years staffed and opened two facilities. The first became operational in September, 1967, at Georgetown in the former Jason High School building. Termed the Southern Branch, it now enrolls 560 full-time and 650 part-time students.

The Jason building has been extensively remodeled with an appropriation of \$1,540,000 from the General Assembly. The building has been air-conditioned for year-around use, new laboratories and shops have been constructed, and data processing and other instructional equipment have been installed. The library has been renovated and is now being enlarged.

The second unit opened in rented quarters at 30th Street and Northeast Boulevard, Wilmington, in September, 1968. The decision to establish the Northern Branch was made following a study conducted by Arthur D. Little, Inc. This study, requested by the Board of Delaware Technical and Community College, was sponsored

The expansion of job opportunities in northern Delaware, plus a changing occupational mix, indicates a rapidly growing need for job candidates with the type of training Delaware Technical and Community College can provide. These needs cannot be met with existing facilities, nor can they be met in full by other educational institutions in the area. Estimates of employment show that, in jobs related to Delaware Technical and Community College's functions, the need will be 1.5 to 5 times as great as the number of graduates emerging from existing colleges and universities in the northern part of the State and from other post-high school institutions, public and private.

Delaware Technical and Community College fills a unique role in education in Delaware. Its programs and objectives are not duplicated by other institutions, either at the high school or college level. To meet the needs of the people, to help the State expand its economic and tax base, and to fulfill the responsibilities implicit in its charter from the General Assembly, the Board of Trustees recommends an immediate construction program designed to create two new campus units in northern Delaware, each to accommodate 1250 full-time day students or the equivalent of that number made up of part-time and full-time students. One unit would be located at a new site in center-city Wilmington; the other, about four miles south of the city border, in New Castle County. Additional facilities at each location to provide for future increments of 1250 full-time day students at a time are planned to meet anticipated needs for the next fifteen years.

Suitable sites for such a program have been located. They are readily accessible to the students to be served and can be made available for early development. Preliminary architectural studies are under way. Curricula have been planned to avoid duplication. Courses offered at one location will complement the courses offered at the other, with a small and intentional amount of overlap.

The decision to propose simultaneous construction at two sites was reached after extensive consideration of several alternatives. The Board of Trustees unanimously concludes that the two-site proposal is the most feasible alternative from the point of view of economics and administration and that it is best suited to the community's present and projected needs. The dual-site approach will provide administrative flexibility and permit the most effective use of the space made available at each location.

If the necessary funds are appropriated, site acquisition and design work can proceed promptly. The first two units can be ready for use in September, 1972, provided funds to complete the facilities are appropriated early in 1970.

by the Greater Wilmington Development Council and thus was carried out without expenditure of public funds. Titled "A Development Program for a Technical Community College of Northern Delaware," it strongly recommends immediate provision of facilities in the Wilmington area. Pursuant to this recommendation, office and store buildings were leased and converted for classroom use.

The Northern Branch had an initial enrollment of 350 full-time and 450 part-time students. Current enrollment is 310 full-time and 516 part-time.

Salary guidelines and a consistent salary policy have been developed for faculty and staff at both college locations. Organization charts for the College are presented in the Appendix.

Operating funds to sustain the Southern Branch and the Northern Branch have been provided by the General Assembly and, thus, are not included in the capital request made in this report.

course offerings

Programs leading to the associate degree are now being offered in broad occupational or semiprofessional areas as follows:

Engineering Technology

Business Occupations

Health Services

Public Services

General Education

A General Studies Program is offered for students not fully prepared for the associate degree programs. Extensive help is given students to improve their study habits and upgrade their skills in science, mathematics, reading, writing, and verbal communications. Students who have sufficient background to undertake some course work in the associate degree programs are encouraged to do so while continuing to improve other skills through the General Studies Program.

At the Southern Branch in the 1967-68 school year, more than half of the General Studies students improved to the point where they could enter the College's degree programs (or, as happened in

some cases, leave the College for a full-time job). The same trend is seen in the Northern Branch. In its first four months of operation, one-fourth of the General Studies students were upgraded to more advanced programs.

The Southern Branch also offers a College Parallel Program for students intending to transfer to a four-year college. This program is being conducted under contract with the University of Delaware, and students receive full credit from it for completing freshmen and sophomore courses of study.

evaluation and counseling

The success or failure of the College's programs depends in large measure on the quality and extent of the evaluation and personal counseling available to students and prospective students. Soon after the College was founded, an Office of Student Services was established to provide such professional testing and counseling. Experience has proved this to be an indispensable asset.

From the time a prospect submits an application to the College until he is placed in a job and leaves the College, the Office of Student Services is closely involved in his progress and is available to offer counsel and suggestions. At the Southern Branch during the period from February, 1967, through May, 1968, more than 1300 students were given aptitude evaluations. The Northern Branch provided more than 1,000 such evaluations in its first months of operation.

Each student in the College has an opportunity for an individual counseling session at least once every quarter. Supplemental sessions are available on a more frequent basis and are especially encouraged for General Studies students to help in their transition into the degree programs.

In addition to the counseling sessions, faculty and staff members are urged to provide informal direction to all students and to encourage rapport between students and staff. Students and faculty meet bi-weekly to discuss College concerns and to plan extracurricular cultural and professional activities.

The trustees and administration have found that this strong focus on counseling not only helps students, many of whom have had little such aid before, but also helps the College improve its programs. The greater the communication between students, faculty, and staff, the more responsive the College can be in attuning its offerings to the employment needs of the community and to the potential of its students.

SECTION 3

future needs

Delaware is experiencing the same pattern of change that is seen in a number of other rapidly growing states. The sharp increase in population is accompanied by important shifts in occupational needs and opportunities. Demand for unskilled workers remains static or declines, while the need for semiprofessional and highly skilled workers outruns the supply.

Such states have the option of "importing" people with the requisite skills or of expanding their own supply by launching special educational programs such as two-year community colleges. In practice, most states do both. However, the future lies with the educational route. The "recruitment" approach, though necessary in some measure, does nothing to increase the overall national supply of highly trained citizens. It merely transfers skills from one locale to another. The educational route, by contrast, expands the pool of talent and, at the same time, strengthens the economic base. Graduates of occupationally oriented programs usually stay in the state in which they were trained and, with few exceptions, move from low-skill and low-pay jobs into higher-pay and more stable careers. The ranks of the needy and the pool of underutilized talent are reduced at the same time as personal income rises. Publicly supported community colleges thus generate a return on investment, paying back their costs in increased taxable income.

The pattern is a familiar one, but its particular pertinence to Delaware is worth noting. Despite its high per capita income, the State has a large pool of underutilized and undereducated citizens. In New Castle County, for example, only about half of the high school graduates pursue post-high school educational programs. Moreover, many Delawareans have only marginal earning power; and some require public assistance. On the other side of the coin, there is an exceptionally large demand for highly skilled and semi-professional workers by virtue of the fact that Delaware's technically oriented industries and service organizations continue to grow. This demand will become more acute in the future and cannot be filled by existing educational institutions of the present size.

The dimensions of the need are suggested by the statistics on growth in the labor force and occupational change. The dimensions of the opportunity are suggested by the statistics on enrollment forecasts for the Northern Branch of Delaware Technical and Community College.

labor force and occupational change new castle county

According to the Division of Urban Affairs of the University of Delaware, significant rises in the labor force (1) as well as changes in employment patterns (2) can be expected over the period ending in 1985. Since the population of Wilmington is relatively static, most of the growth will take place outside the city.

The labor force in the County is forecast to increase from 131 thousand in 1965 to about 235 thousand in 1985. Taking into consideration those leaving the labor force by retirement and death, this is equivalent to about 8500 new entrants annually.

Employers interviewed by Arthur D. Little, Inc., listed a number of occupations in which they foresee needs for substantial numbers of new employees with post-high school training of the type offered by a community college: engineering technology; electrical and mechanical maintenance and repair; production and control personnel; computer and other advanced business machine operators; paramedical and health services; secretarial and senior clerical work; and office supervision.

In Delaware, as elsewhere in the Nation, the value of the so-called paraprofessionals has been increasingly recognized. The principal limitation has been their scarcity. The pattern that prevails in engineering, where many of the duties of the professional engineer can be competently handled by technicians, also appears in such fields as medicine and dentistry. Doctors, dentists and nurses continue to do work, which in many instances, can be done by paramedical personnel were they available.

The Arthur D. Little, Inc., report states that a minimum of 23 per cent of the new labor force entrants will be required to have a post-high school education of some kind. Less conservative sources, as pointed out in their report, push the estimate up to 73 per cent. Based on these projections, from 2000 to 6200 new employees per year will need post-high school training.

Existing institutions of higher education fill only a part of the need for highly skilled and semiprofessional workers. Currently, all such post-high school institutions in New Castle County graduate about 1200 students per year. This is 60 per cent of the low-end estimate of the need for college-trained people in the County and is only about 20 per cent of the high-end estimate.

(1) Division of Urban Affairs, University of Delaware: Population, Household, and Labor Force Projections for the Wilmington Metropolitan Region. Prepared by J. Kevin O'Connor and C. Harold Brown, March, 1966.

(2) Division of Urban Affairs, University of Delaware: Employment and Income Forecasts for New Castle County. Prepared by Robert W. Cook with Richard L. Murchison and James H. Zimmer, March, 1966.

enrollment forecast - northern

Enrollment projections are essential to the proper planning, design and eventual construction of a community college. If the projections are unrealistically high, costly facilities will be underutilized and probably overstaffed. If they are too low, admissions will have to be restricted; and the college will be unable to meet the educational needs of a segment of the community.

In general, enrollment is dependent on population trends, post-high school educational patterns of the community, industrial-economic development in the area to be served, and the instructional programs offered. Accessibility is also another important factor, since the typical community college student lives at home, commutes to the school, and in many instances holds either a part-time or full-time job. After the community college has been in operation for a number of years, its reputation and prestige will have an influence on future enrollment projections.

The method most widely used for projecting enrollment of a new community college is based on the number of 12th-grade graduates from public, parochial and independent schools. The number of such graduates can be derived from population forecasts. However, the proportion of high school graduates seeking admission to the community college as full-time freshmen varies widely in different section of the country. Caudill, Rowlett and Scott, for example, point out that the proportion has ranged from a high to 75 per cent at some community college to a low of 5 per cent at others.

In the Arthur D. Little, Inc., report it is predicated that 45 per cent of the 1970 high school graduates who would not otherwise pursue a post-high school education will enroll as full-time freshmen in the Northern Branch of Delaware Technical and Community College. The prediction for 1975 is 55 per cent and for 1980 is 65 per cent.

Within New Castle County there are regional variations in the present post-high school educational patterns of grade 12 graduates from public, parochial and independent schools. The methodology followed by Arthur D. Little, Inc., is to divide the County into contiguous regions corresponding to school districts and determine from past records the proportion of high-school graduates who, heretofore, have not pursued post-high school education. This is considered to be a gross potential pool of candidates from which the Northern Branch will enroll freshmen according to the rates given in the preceding paragraph. It is further assumed that the regional variations existing in 1965-1966 will persist for some time into the future.

In summary, then, the number of full-time freshmen expected to enroll in the Northern Branch may be calculated for the separate regions of New Castle County from estimates of the number of grade 12 graduates of the region; the size of the gross potential pool of graduates who would not, in the absence of a community college, be expected to pursue further education; and the enrollment rate of freshmen by the Northern Branch from the gross potential pool. This procedure, detailed in the Appendix, leads to the following estimates on freshmen enrollment through 1985.

table 1

FRESHMEN ENROLLMENT ESTIMATE
NORTHERN BRANCH

		Number of Freshmen			
		1970	1975	1980	1985
Public School Regions					
North		150	230	330	410
Northwest		280	400	540	675
West		200	360	585	910
South		170	270	405	485
Far South		90	185	390	565
Wilmington	Total	890	1,445	2,250	3,045
		275	375	485	530
Total		1,165	1,820	2,735	3,575
Parochial and Independent School Regions					
Wilmington		130	185	250	280
Ex-Wilmington		45	65	105	145
Total		175	250	355	425
Total		1,340	2,070	3,090	4,000

The enrollment of full-time freshmen provides the basis for estimating the number of full-time sophomores and the number of additional students in part-time day and evening programs. Such projections reflect the national experience and are based on the same ratios as were used in the Arthur D. Little, Inc., report.

table 2

TOTAL ENROLLMENT ESTIMATE
NORTHERN BRANCH

		Number of Students			
		1970	1975	1980	1985
Full-time Day					
Freshmen		1,340	2,070	3,090	4,000
Sophomores		590	1,120	2,040	2,640
Unclassified		135	320	610	790
Total		2,065	3,510	5,740	7,430
Part-time					
Day		795	1,515	2,755	3,565
Evening		1,850	3,535	6,435	8,325
Total		2,645	5,050	9,190	11,890
Total		4,710	8,560	14,930	19,320

The distribution of enrollment between Wilmington residents and the balance of New Castle County is shown in Table 3, which follows:

table 3

TOTAL ENROLLMENT ESTIMATE
NORTHERN BRANCH

		Number of Students			
		1970	1975	1980	1985
Wilmington Residents					
Full-time Day		625	950	1,365	1,505
Part-time Day		240	410	655	720
Part-time Evening		560	960	1,535	1,690
Total		1,425	2,320	3,555	3,915
Ex-Wilmington Residents					
Full-time Day		1,440	2,560	4,375	5,925
Part-time Day		555	1,105	2,100	2,845
Part-time Evening		1,290	2,575	4,900	6,635
Total		3,285	6,240	11,375	15,405
Total		4,710	8,560	14,930	19,320

It is noteworthy that Caudill, Rowlett and Scott, consultants to the Board, consider that the foregoing enrollment projections are valid and are satisfactory for the planning of facilities required by the Northern Branch.

SECTION 4

proposal for expansion
of the
northern branch

If Delaware Technical and Community College is to provide educational opportunities in northern Delaware commensurate with present and future needs, an immediate expansion program is required.

The present Northern Branch is housed partly in two buildings originally designed as business office space and partly in a store building. This space is quite limited and unsuited to long-term educational goals. It is poorly situated in terms of accessibility. It is clear, therefore, that new and adequate facilities, readily accessible to large numbers of future students, must be provided.

In considering new and permanent facilities for northern Delaware, the Board established four criteria against which its decisions would be made:

- (1) The facilities should be capable of being expanded to meet the anticipated increase in enrollment to 1985.
- (2) They should be capable of effective administration.
- (3) They should be readily accessible to the student body.
- (4) They should conform to capital cost standards established by the best practices in other communities.

The Board proposes that permanent facilities be built in center-city Wilmington, to initially accommodate 1250 full-time day students, and that a campus of comparable capacity be built on a suburban site.

A facility designed for 1250 full-time day students will permit a total enrollment of about 4200 at each location, including the customary number of part-time day and evening students.

Additional facilities in increments to accommodate similar numbers of students are planned for later years. As the Northern Branch develops historical data on its operations, future enrollment estimates can be made with increasing certainty and with sufficient lead time to allow for orderly expansion.

In choosing a multi-site approach rather than a single location for expansion, the Board considered the experience of other states that have been developing community college programs over a period of time ranging up to 25 years.

Forty-six community college systems located across the United States now have six or more campuses. A large number of other community colleges have facilities at two to six locations. Few urban areas have a single location, and most of these intend to add additional sites as enrollment increases.

There appears to be an optimum size beyond which the community college becomes unwieldy and educationally inefficient. The ideal is considered to be on which will accommodate about 3500 full-time day students or its equivalent with 5000 as an allowable maximum. Institutions of this size are large enough to offer fully varied programs with adequate classroom and laboratory equipment but without the problems that arise in college units that are much larger. Community colleges that have gone beyond the 5000 maximum to totals in the range of 10,000 report that they regret the decision.

The unit-size factor has direct pertinence to Delaware Technical and Community College. The enrollment projections show that any single campus for the Northern Branch, wherever located, would quickly grow beyond the optimum size figure. Assuming that permanent facilities are opened for the Northern Branch in 1972 as is planned, it could reach the 3500 figure by 1975. The 5000 figure would be reached prior to 1980.

The dual-campus approach provides the flexibility for long-range development. Beginning with units that have the capacity for 1250 full-time day students each, Delaware Technical and Community College can expand at each site in 1250-student increments as enrollment demand grows. The temporary facility in northeastern Wilmington would be phased out as the permanent campuses are expanded.

site selection

In reaching conclusions and formulating recommendations on site selection the Board drew upon a wide variety of information sources including the Arthur D. Little, Inc., report referred to earlier.

A Site Selection Subcommittee of the Board was formed and retained the services of Caudill, Rowlett and Scott, a nationally known architectural firm with broad experience in community college planning and design. In addition, a local realtor was employed as a consultant.

The Subcommittee conferred with City, County and State planners and other government officials; with educators in Delaware and with educators elsewhere who have had extensive experience in community college development and planning; and with interested community groups. Site selection studies and reports by the Delaware State Planning Office and the Wilmington Department of Planning and Development were also reviewed.

More than forty possible locations for the College were identified. Twenty-six of these were analyzed by the architectural consultants and the Subcommittee, and ten were chosen for more intensive evaluation. Two sites, one of which is a suburban location and the other an urban location, were finally selected in accordance with the recommendations made by Caudill, Rowlett and Scott in their report, entitled "Site Selection Study."

suburban site

The suburban site is at the junction of Interstate Highway 95, New Churchman's Road, and Delaware Route 7, as shown by Map B (Appendix). It consists of 100 acres of undeveloped land and, thus, is open for construction on whatever timetable is dictated by enrollment growth. About one-third of the land is wooded; the remainder is open meadow. Part of the land is level; the rest, gently rolling. The land is now zoned R-2, a category permitting use for educational facilities.

The New Castle County Planning Board envisions an influx of new industrial plants in this sector of the County, and the presence of a vocationally oriented community college, thus, seems appropriate. The college should serve as an attraction to industrial firms looking for a new location and weighing the availability of trained manpower in their site-selection decision. By the same token, the designation of this area for industrial development should provide opportunities for part-time or full-time employment of Delaware Technical and Community College students.

After consultation with the State Planning Office, options were obtained at a cost of \$5,000 to purchase the site for \$8,000 per acre. The options are exercisable on or before February 1, 1969, with the purchase price to be paid as follows: Initial payments of \$30,000 on

or before February 1, 1969, and the balance on or before August 21, 1969. The cost of the options, if exercised, and the initial payments apply against the foregoing purchase price. The option payments and the initial payments will be forfeited unless the General Assembly appropriates the funds and authorizes their use for this purpose.

urban site

The urban site is in the vicinity of Fourth and Market Streets, Wilmington. In the Urban Renewal and Redevelopment Plan of the City, this area has been designated for cultural and community college use.

The specific site selected for initial development is a two-block section bounded by Second and Fourth Streets and by King and French Streets. It was chosen after consultation with and cooperation from the Wilmington Department of Planning and Development, the Delaware State Planning Office and the Greater Wilmington Development Council. The northern block, of 0.93 acres, is owned by the City; and the land is cleared except for a firehouse which the City intends to abandon. The southern block, of 1.88 acres, contains about twenty-five store buildings, most of which are vacant.

A larger area, to accommodate expansion of the Center City Delaware Technical and Community College facility, is bounded by Walnut and West Streets and by Second and Fourth Streets. About two acres at Market and Fourth Streets have been reserved by the City for the proposed Market Street Square. Excluding this area, the overall site for the College comprises 16.67 acres of interior land, as shown by Map C (Appendix). It is intended that certain streets in the rectangle be closed and the land made available to Delaware Technical and Community College. This will increase the useable land plot to 20.8 acres.

To proceed with the initial development of the urban site, the Delaware Technical and Community College Board would acquire 2.81 acres without Federal-participating agreements. The two-block area would be bought with State funds through direct purchase or condemnation proceedings. The Board has requested the Wilmington Housing Authority to act as agents for negotiating and acquiring this land.

As to the remaining acreage, the Delaware Technical and Community College Board has requested the Wilmington Department of Planning and Development to make application for Federal Urban Renewal assistance.

accessibility

From the standpoint of transportation convenience, the dual-campus approach, on the sites specified, approaches a statistical ideal. In the process of site selection, the Board matched the projected enrollment of students from various sectors of New Castle County to traffic studies provided by the New Castle County Land Use and Transportation Program. This agency has drawn up 187 traffic zones within the County and mapped transportation facilities for 1985. When the relevant data are meshed, the two sites proposed for the Northern Branch are, to all intents and purposes, equally accessible to the students expected to attend the College in the future.

The maximum travel time to either campus from the least accessible zone will be less than 30 minutes. The suburban site rates slightly higher in accessibility than the city site, according to the 1985 transportation map. This reflects the fact that the suburban population is expected to grow more rapidly than the city's with a large portion of the suburban growth in close proximity to the suburban campus site or located near high-speed traffic arteries permitting quick travel to that campus. However, the variation in accessibility is not large enough to be of concern. The difference in travel time for city and suburban residents will be less than 15 per cent.

Travel between the two campuses is not expected to present difficult problems since regional transportation plans call for publicly operated buses serving this area.

capital cost estimates

In the planning of the urban and suburban campuses for the Northern Branch, it is contemplated that each site ultimately will be capable of accommodating 3750 full-time day students. Development, however, would take place in three stages. Initially, facilities would be provided for the first increment of 1250 full-time day students at each campus. Thereafter, expansion to handle the second and third increments of 1250 full-time day students would be undertaken as dictated by increased enrollment demand.

Our architects, Caudill, Rowlett and Scott, tentatively estimate that the capital costs required to complete the initial stage of the development will amount to \$15,043,000. The estimated cost for the urban campus is \$7,289,000 and for the suburban campus is \$7,754,000. Although these costs are detailed in Table 4 for the urban campus and in Table 5 for the suburban campus, the following comments are offered with regard to those items which are significantly different in the two estimates:

- (1) The cost per sq. ft. (gross) of construction at the urban site is higher than that at the suburban site. The former envisions high-rise structures including elevators; the latter will be low-rise.
- (2) At the urban branch, emphasis will be placed on Business Occupations and Health Services, which, with the General Studies courses, have a relatively low-space requirement per student. In contrast, the suburban branch will concentrate on Engineering Technology which needs relatively more space per student due to extensive laboratory, pilot-plant and shop areas.

- (3) The 2.81 acres of land to be acquired for the urban branch with State funds will be sufficient only for the initial unit. However, it is anticipated that the balance of approximately 18 acres needed for expansion will qualify for Federal Urban Renewal, whereby the State would obtain up to 80 per cent of the funds required via the Federal Government. The 100 acres being sought for the suburban campus will be adequate for the future expansion of the College at this location.
- (4) Site development costs for the urban branch are relatively low since utilities (water, electricity, gas, sanitary and storm sewer lines) are presently available. Likewise, no facilities are to be provided for off-street student parking at this time, but they may be a major cost item in the expansion plan for this location. The relatively higher site development cost at the suburban campus is due to expenditures for roadways, parking areas and utilities, including a nonrecurring capital expenditure to extend lines and hook up with existing water and sewer mains.

table 4

CAPITAL COST ESTIMATE
URBAN CAMPUS
NORTHERN BRANCH

Capacity: 1250 Full-time Day Students

109,675 gross sq. ft. at \$35.20 per sq. ft.	\$3,861,000
Site development	154,000
Central plant	275,000
Fixed equipment	386,000
Site acquisition	1,500,000
Movable equipment	347,000
Architectural fees	281,000
Administrative costs	17,000
Contingency	468,000
Total	\$7,289,000

table 5

CAPITAL COST ESTIMATE
SUBURBAN CAMPUS
NORTHERN BRANCH

Capacity: 1250 Full-time Day Students

129,500 gross sq. ft. at \$30.00 per sq. ft.	\$4,132,000
Site development	826,000
Central plant	240,000
Fixed equipment	413,000
Site acquisition	855,000
Movable equipment	372,000
Architectural fees	337,000
Administrative costs, soil tests, survey, etc.	18,000
Contingency	561,000
Total	\$7,754,000

It is tentatively estimated that the capital cost required to complete the facilities at both campuses will amount to \$39,840,000. The urban campus, with a capacity for 3750 full-time day students, is estimated at \$19,190,000; the suburban campus of equal capacity is estimated at \$20,650,000. Details of the estimates are shown in Table 6 and are commented on below:

- (1) The Engineering Technology courses will be emphasized at the suburban campus and require more square feet per student than the Business Occupational and Medical Services programs which will be given at the urban campus.
- (2) The cost per square foot of construction for high-rise buildings in the urban location is greater than that for low-rise structures at the suburban campus.
- (3) Site development cost (roadways and parking areas) are higher for the suburban campus. However, if structured parking has to be provided for students and faculty at the urban site, additional capital costs would be incurred, amounting to approximately \$4,000,000.
- (4) Site acquisition costs for the urban campus assumes that Federal Urban Renewal assistance, amounting to \$4,800,000, will be obtained, reducing the State's share to \$2,700,000 from a total cost of \$7,500,000. The timing of the urban campus expansion, beyond the initial unit to be completed in 1972, is highly dependent on the urban renewal process, which may require several years to complete. Consequently, it may be necessary, because of enrollment pressure, to expand this campus from 1250 to 3750 full-time day students in one step, rather than in two steps of 1250 full-time day students each.
- (5) Construction, equipment, site development and the applicable architectural fees, for completing both campuses, have been escalated at 5 per cent per year from the base figures used to build the initial units at the urban and suburban sites. The amount of escalation is \$2,572,000, of which \$1,850,000 is applicable to the urban and \$722,000 to the suburban location.

table 6

CAPITAL COST ESTIMATE
NORTHERN BRANCH

Capacity: 7500 Full-time Day Students

	Urban Campus 3750 Full-time Day Students	Suburban Campus 3750 Full-time Day Students (000 omitted)	Total
283,475 gross sq. ft.	\$11,265 (1)		
382,560 gross sq. ft.		\$12,684 (2)	
666,035 gross sq. ft.			\$23,949 (3)
Site development	450 (4)	1,596	2,046
Central plant	470	370	840
Fixed equipment	1,126	1,569	2,695
Site acquisition	7,500	855	8,355
Movable equipment	1,013	927	1,940
Architectural fees	799	973	1,772
Contingency	1,332	1,622	2,954
Administration	35	54	89
Total	\$23,990	\$20,650	\$44,640
Less: Federal funds	4,800		4,800
Total	\$19,190	\$20,650	\$39,840

- (1) Average cost, \$39.73 per sq. ft.
- (2) Average cost, \$33.16 per sq. ft.
- (3) Average cost, \$35.96 per sq. ft.
- (4) No provision for off-street parking facilities.

request

At this time, the Board requests that the General Assembly appropriate \$2,850,000 for the following purposes:

- (1) \$2,355,000 to purchase land for the suburban campus and for the first segment of the urban campus.
- (2) \$495,000 to complete the definitive design phase, including working drawings from which firm estimates of building costs will be obtained for each campus.

Our architects estimate that the definitive design phase can be completed in February 1970. At that time, an additional appropriation request, based on firm cost estimates, would be submitted to the General Assembly for the balance of the funds required to build the initial units at the two locations. If the request is approved by April 1970, construction would be completed in time for each branch to open in September, 1972.

APPENDIX

Population trends in New Castle County have been derived by interpolating the data given in Table 33 of the Arthur D. Little, Inc., report. The regions correspond to school districts as delineated by Map A, shown on page 25 of this appendix.

table a-1

PROJECTED POPULATION BY REGIONS
NEW CASTLE COUNTY
1970 - 1985

Regions	1970	1975	1980	1985
North	*80.0	93.5	109.2	127.6
Northwest	83.2	92.9	103.5	115.5
West	63.2	87.8	122.0	169.4
South	47.6	53.6	60.5	68.2
Far South	24.0	36.1	54.3	81.6
Total	298.0	363.9	449.5	572.3
Wilmington	94.1	99.5	104.5	110.2
Total	392.1	463.4	554.1	672.5

*All Figures in the thousands.

From the preceding Table A-1, the number of grade 12 graduates has been projected as shown by Table A-2.

table a-2

TWELFTH-GRADE GRADUATES
NEW CASTLE COUNTY
PUBLIC, PAROCHIAL AND INDEPENDENT SCHOOLS

		Number of Graduates (1000)			
Public School		1970	1975	1980	1985
Regions					
North		1.1	1.4	1.7	2.1
Northwest		1.2	1.4	1.6	2.0
West		0.9	1.3	1.8	2.8
South		0.6	0.8	1.0	1.2
Far South		0.3	0.5	0.9	1.3
Total		4.1	5.4	7.1	9.4
Wilmington		0.9	1.0	1.1	1.2
Total		5.0	6.4	8.2	10.6
Parochial and Independent Schools					
Regions					
Wilmington		0.6	0.7	0.8	0.9
Ex-Wilmington		0.5	0.6	0.8	1.1
Total		1.1	1.3	1.6	2.0
Total		6.1	7.7	9.8	12.6

In Table A-3 the regional variations in post-high school educational patterns have been applied to the number of grade 12 graduates given in Table A-2 to obtain the size of the potential pool of students -- some of whom are expected to enroll as full-time freshmen in the Northern Branch.

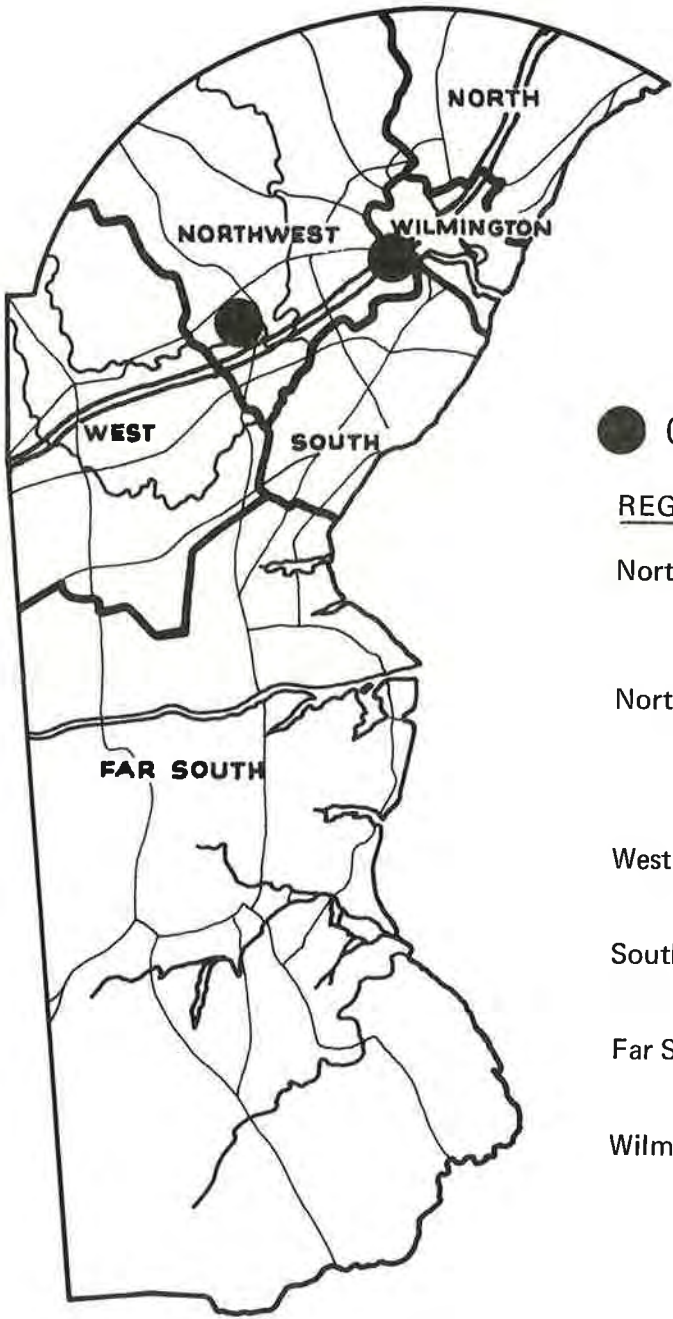
table a-3

GRADE 12 GRADUATE
NOT PURSUING HIGHER EDUCATION
(BASED ON 1965-1966 RECORDS)

		Number				
		%	1970	1975	1980	1985
Public Schools						
North		30	330	420	510	630
Northwest		52	625	730	830	1,040
West		50	450	650	900	1,400
South		62	370	495	620	745
Far South		67	200	335	605	870
Wilmington		68	610	680	750	815
Total			2,585	3,310	4,215	5,500
Parochial and Independent Schools						
Wilmington		48	290	335	385	430
Ex-Wilmington		20	100	120	160	220
Total			390	455	545	650
Total			2,975	3,765	4,760	6,150

Table 1 (Page 9) is derived from Table A-3. It assumes that of the twelfth grade graduates not pursuing higher education, 45% will enroll at the Northern Branch in 1970, 55% in 1975, and 65% in 1980 and 1985.

MAP A

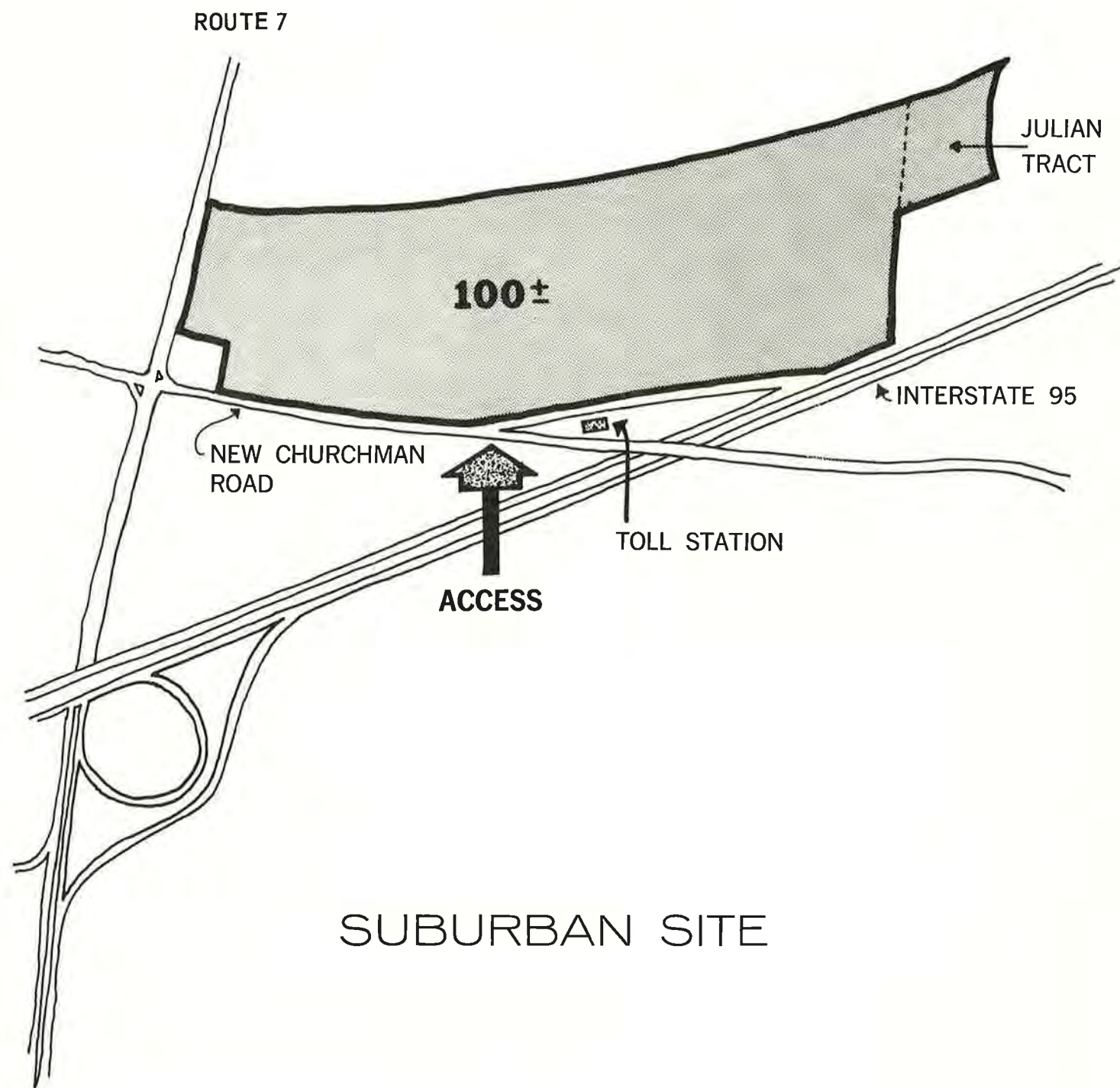


CAMPUS LOCATIONS	
REGIONS	SCHOOL DISTRICTS ¹
North	Alfred I. duPont Mount Pleasant Claymont
Northwest	Alexis I. duPont Thomas McKean Henry Conrad John Dickinson
West	Newark Christiana
South	DeLaWarr New Castle
Far South	Gunning Bedford, Jr. Middletown
Wilmington	H. Fletcher Brown Tech. Pierre S. duPont Howard Wilmington

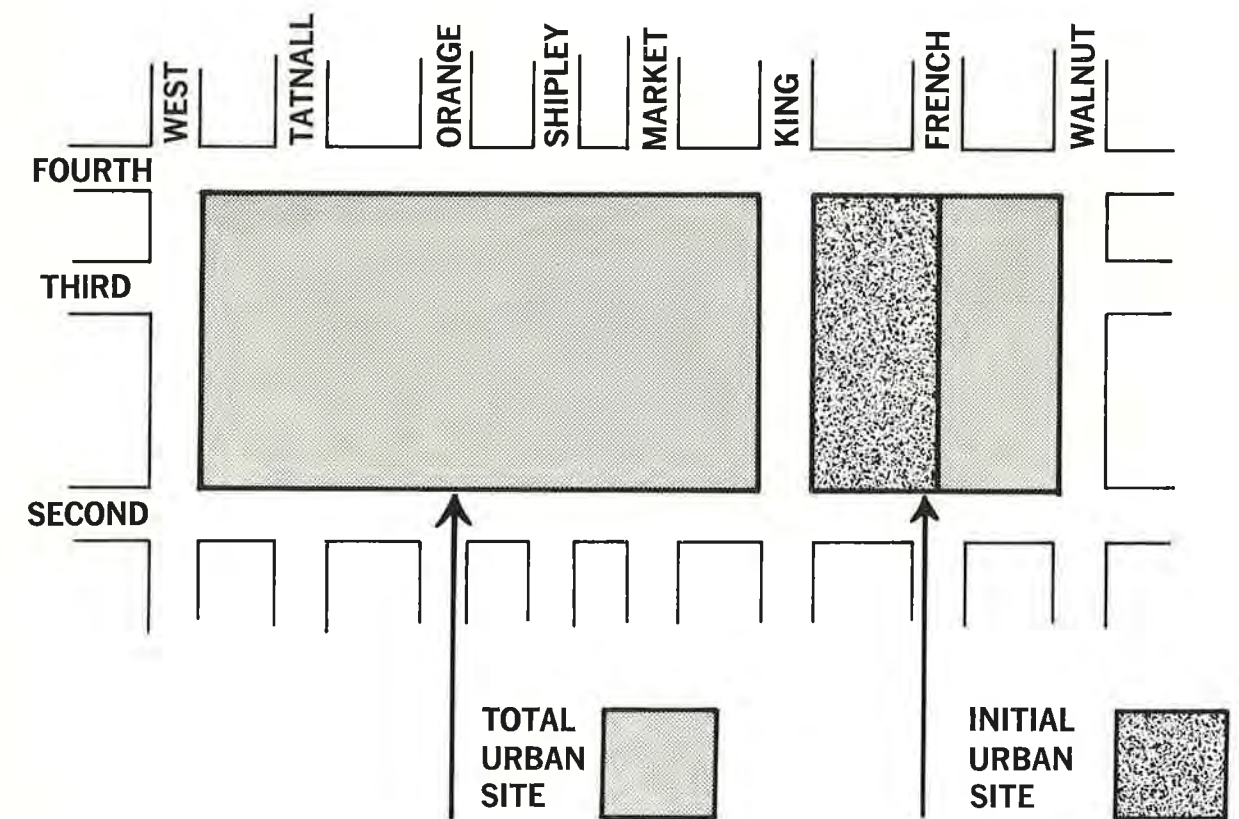
1-OR HIGH SCHOOL ATTENDANCE AREAS

NEW CASTLE COUNTY REGIONS

MAP B

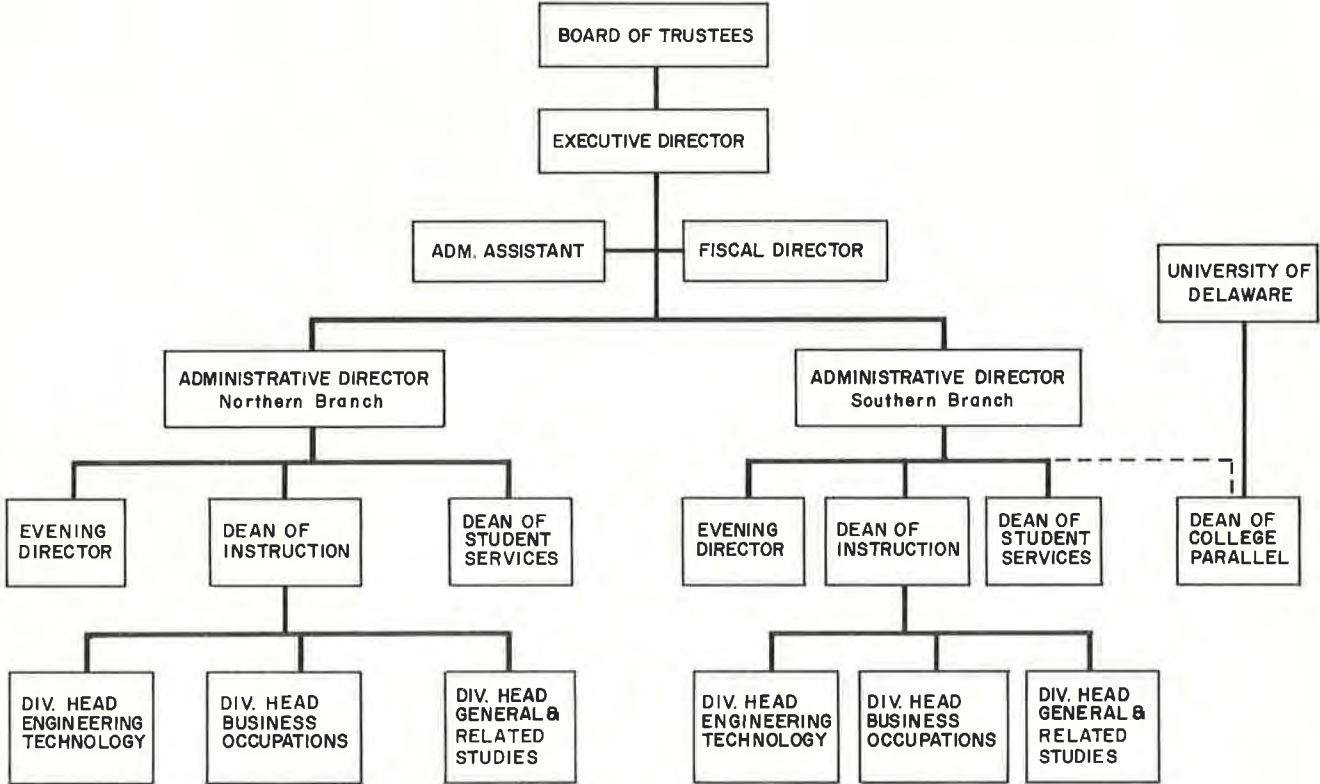


MAP C



URBAN SITE

ORGANIZATION



APPENDIX A

enabling legislation

HOUSE BILL NO. 529

AS AMENDED BY

HOUSE AMENDMENT NO. 1

AN ACT TO CREATE THE BOARD OF TRUSTEES OF THE DELAWARE INSTITUTE OF TECHNOLOGY, TO EMPOWER THE BOARD TO OPERATE LEARNING INSTITUTIONS AND TO MAKE A SUPPLEMENTARY APPROPRIATION THEREFOR.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF DELAWARE

Section 1. Title 14, Delaware Code, is amended by adding thereto a new part to read:

PART VI. DELAWARE INSTITUTE OF TECHNOLOGY

CHAPTER 91. DELAWARE INSTITUTE OF TECHNOLOGY

9101. DEFINITIONS

As used in this chapter -

“Board” means the Board of Trustees of the Delaware Institute of Technology.

“The Institute” means the Delaware Institute of Technology.

“Institutions” means such institutions of higher learning as may be from time to time established by the Board.

9102. CREATION OF BOARD

There shall be a Board of Trustees of Delaware Institute of Technology which shall be a state agency.

9103. COMPOSITION; QUALIFICATIONS; CHAIRMAN; APPOINTMENT; TERM; COMPENSATION; VACANCY; QUORUM

- (a) The Board of Trustees shall consist of seven (7) trustees.
- (b) The Trustees shall be appointed by the Governor by and with the consent of a majority of the members elected to the Senate.
- (c) Six (6) trustees shall be appointed for terms of three (3) years each, commencing in each case, from the date of appointment. The six (6) trustees appointed for a term of three (3) years shall reside: One (1) in the City of Wilmington; one (1) in the remainder of New Castle County; one (1) in Kent County and one (1) in Sussex County. The other two (2) members may reside anywhere in the State. The seventh member may reside anywhere in the State; shall serve at the pleasure of the Governor and shall be Chairman of the Board. He may be removed at any time by the Governor and shall serve until he is removed by the Governor.
- (d) No more than four (4) trustees shall be members of same political party.
- (e) Each trustee shall be a citizen of the United States, a qualified voter of this State and a resident of this State for at least three (3) years preceding his appointment.
- (f) A trustee shall continue to reside in the political subdivision of which he was a resident at the time of his appointment.
- (g) In case of a vacancy on the Board for any reason other than expiration of the term of office, the Governor shall fill such vacancy for the unexpired term by and with the consent of a majority of the members elected to the Senate.

enabling legislation continued

- (h) No member of the Board shall receive any compensation for his duties, except that he may receive his actual travel expenses.
- (i) Four members of the Board shall constitute a quorum. A majority of the members present at any meeting and constituting a quorum shall be sufficient for any action by the Board.

9104. PURPOSE AND OBJECT

The purpose of The Institute shall be to operate public institutions of learning for persons who have graduated from high schools or who are unable to attend public high schools.

9105. POWERS AND DUTIES OF BOARD

- (a) The Board may establish such institutions of learning throughout the State as may be necessary to effectuate the purposes of this chapter.
- (b) The Board shall have the custody of and be responsible for the property of the Institutions and shall be responsible for the management and control of said Institutions.
- (c) For the effectuation of the purposes of this chapter, the Board, in addition to such other powers expressly granted to it by this chapter, shall have the following powers:
 - (1) To select such officers, except the Chairman, as it may deem desirable, from among its own membership.
 - (2) To adopt or change the name of the Institutions established by it.
 - (3) To adopt and use a seal.

- (4) To sue and be sued.
- (5) To determine the educational program of the Institutions.
- (6) To appoint members of the administrative and teaching staffs of the Institutions and to fix their compensation and terms of employment.
- (7) To appoint or employ such other officers of the Institutions, agents and employees as may be required to carry out the provisions of this chapter and to fix and determine their qualifications, duties, compensation, terms of office or employment and all other terms and conditions of employment.
- (8) To fix schedules of tuition rates and fees for educational services at the Institutions.
- (9) To grant diplomas, certificates or degrees.
- (10) To enter into contracts.
- (11) To accept from any government or governmental agency, or from any other public or private body, or from any other source, grants or contributions of money or property (conditional or otherwise) which the Board may use for or in aid of any of its purposes.

enabling legislation continued

- (12) To acquire (by gift, purchase, condemnation or otherwise), own, lease, use and operate property, whether real, personal or mixed, or any interest therein, which is necessary or desirable for educational purposes.
- (13) To determine that any property owned by the Institute is no longer necessary for educational purposes and to dispose of the same in such manner and upon such terms and conditions as shall be established by it.
- (14) To make and promulgate such rules and regulations, not inconsistent with the provision of this chapter, that are necessary and proper for the administration and operation of The Institutions and for the conduct of the business of the Board.
- (15) To exercise all other powers not inconsistent with the provisions of this chapter, which may be reasonable, necessary or incidental to the establishment, maintenance and operation of higher learning institutions.
- (16) To employ such persons as deemed desirable.

9106. TRANSFER OF PROPERTY

Within applicable provisions of law, any department or agency of the state government, and any subdivision of the State may sell, give, lease, or otherwise make available any of its property to, or for use by the Board.

9107. DONATIONS: MISNOMER

Devises, bequests, grants and gifts to the Institute or any of its Institutions shall not be avoided by any misnomer if the description can be understood with reasonable certainty.

9108. TREASURER'S BOND

The Treasurer of the Board shall give bond with good and sufficient security to the State in the sum of \$10,000, conditioned for the faithful application of all the monies received. The bond shall be approved by the Trustees and shall be deposited in the office of the Secretary of State.

Section 2. The original appointments of the members of the Board authorized to be appointed by this act for a fixed term shall be staggered so that two (2) trustees shall be appointed for a term of one (1) year; one (1) trustee shall be appointed for a term of two (2) years; and two (2) trustees shall be appointed for a term of three (3) years as provided in this Act.

Section 3. The Board appointed pursuant to this act shall report to the Governor and to the General Assembly before January 3, 1967, of its progress and of its recommendations for the establishment of institutions of higher education.

Section 4. The sum of \$50,000 is appropriated to the Board of Trustees of the Delaware Institute of Technology for the fiscal year ending June 30, 1967, for effectuating the purposes of this act.

Section 5. This Act is a supplementary appropriation and money appropriated shall be paid by the State Treasurer out of funds in the General Fund of the State of Delaware not otherwise appropriated.

