

DRAFT FOR REVIEW

**STRATEGIC
LAND USE PLAN**

**PREPARED FOR:
UNIVERSITY OF DELAWARE**

**DEVELOPMENT STRATEGIES, INC.
ST. LOUIS, MISSOURI**

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August 9, 1988

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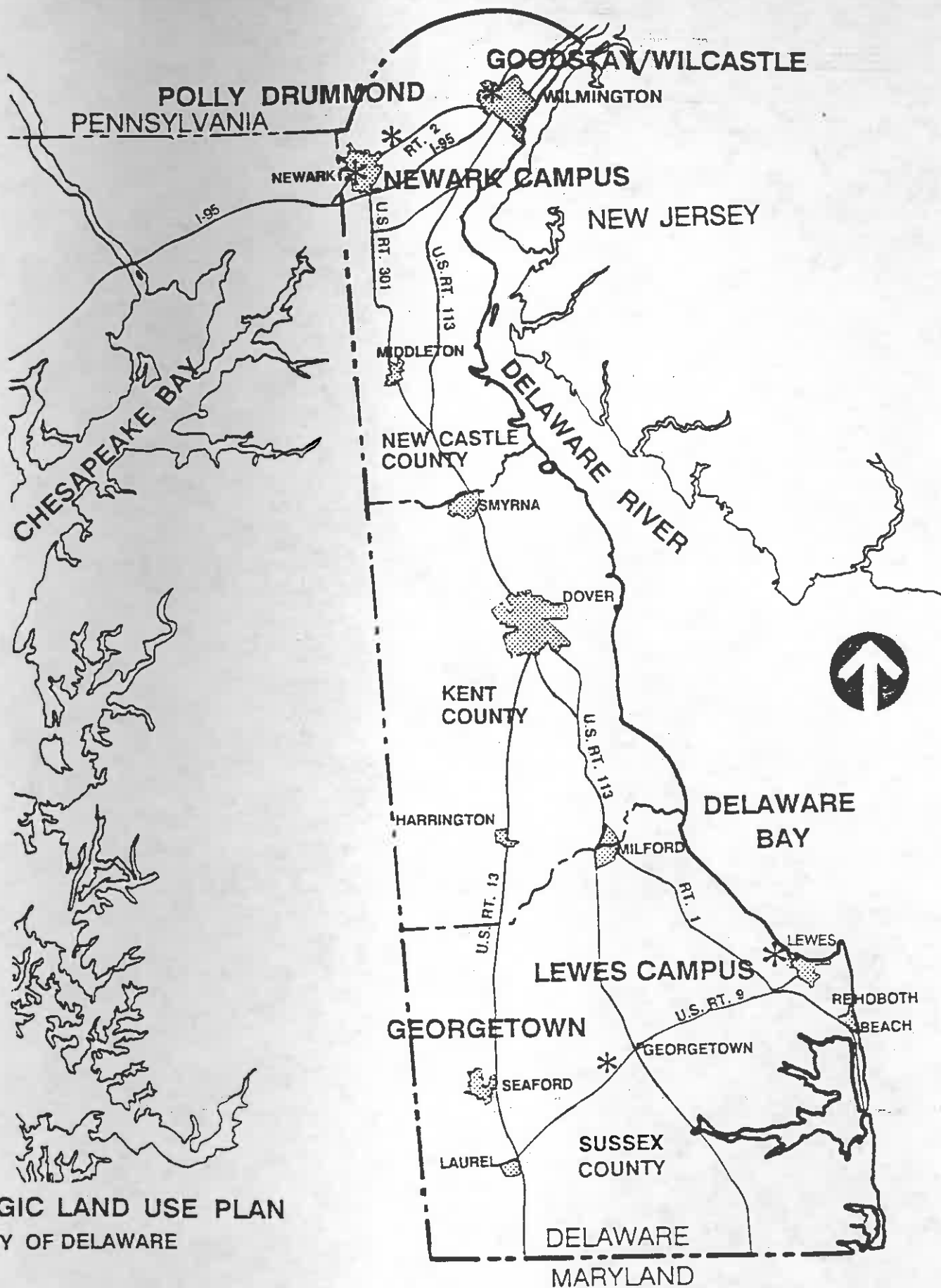
SECTION 1.0
EXECUTIVE SUMMARY

1.0 EXECUTIVE SUMMARY

OVERVIEW OF STUDY

The University of Delaware presently owns over 2,100 acres of land at five separate locations in the state.¹ Three locations are in northern New Castle County. They are the approximately 911-acre Newark Campus, the approximately 34-acre Wilcastle/Goodstay property near Wilmington, and the approximately 508-acre Polly Drummond property along the Kirkwood Highway (Route 2), approximately 2.5 miles east of the Newark Campus. In the southern Sussex County the University owns approximately 347 acres near Georgetown which is used for agricultural research and approximately 328 acres at Lewes, which contains the campus for the College of Marine Studies. The property has been acquired over many years through a combination of grants, purchases, and donations.

¹ The University also owns a small, wooded 13 acre parcel in Kent County, a 210-acre farm in Sussex, and leases 37 acres in Sussex County which were not part of this study.



STRATEGIC LAND USE PLAN
UNIVERSITY OF DELAWARE

LOCATION OF UNIVERSITY
OWNED PROPERTY

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Given this valuable resource, the primary intent of this study was to develop a strategic plan for matching land resources with the short-term and long-term needs of the University of Delaware. In order to carry out this study, a four-step approval was undertaken.

1. Information was gathered and mapped concerning the existing conditions of the property which the University owned and the development context of which the property is a part.
2. Based on the response to questionnaires and interviews by members of the University community, and available information about proposed university-related development, future needs were identified which could require additional land to implement.
3. The needs were then compared with the land available for future development and recommendations were made for land which should be retained, land which could be sold and land which should be considered for acquisition.
4. The final step was to develop a strategic land use plan for the property to be retained or acquired.

The key findings for the respective property owned by the university are summarized below. The findings are based on the best current available information. However, as indicated in the findings, additional market analysis, programming and planning is required for certain specific facilities or areas which would refine

NEWARK CAMPUS COMPOSITE AERIAL

the findings. It is also important to note that no assumptions have been made regarding other institutions offering college level education in the state.

KEY FINDINGS

NEWARK CAMPUS

OVERVIEW

- o The existing level of investment and demographic projections until the year 2010 indicate that the Newark campus should remain the flagship location with necessary steps taken to assure the necessary logical development of the campus.
- o The Newark campus contains approximately 994 acres of land. However, most of the available land is already developed or would be difficult to develop.

TABLE 1.1
POTENTIAL DEVELOPABLE LAND - NEWARK CAMPUS

	Total Acres Available	Developed/ Utilized Acres	Unutilized Acres	Readily Developable Acres
North ¹	165	42	123	25
Central ²	335	253	82	70 ⁴
South ³	494	494 ⁵	-	-
Total	994	789	205	95

¹ Area of campus north of Cleveland Avenue.

² Area of campus between Cleveland Avenue and the Amtrak/Conrail tracks.

³ Area of campus south of the Amtrak/Conrail tracks.

⁴ 55 acres East Campus, 9 acres West Campus, and only 6 acres Core Campus.

⁵ Includes South Campus agricultural land.



NEWARK CAMPUS

KEY FINDINGS

- o Therefore, the necessary growth of facilities will need to be derived from more intensive use of existing developed property and/or the acquisition of additional property.

CENTRAL CAMPUS

- o For the foreseeable future, the Central area should remain the academic heart of the Newark campus. However, the location of certain activities should be relocated to facilitate the expansion of the needed academic facilities. Key functions to be relocated include administrative and maintenance activities and North Mall student housing.
- o Administrative activities should be relocated to reinforce Main Street. However, a more comprehensive plan for Main Street is necessary before more definitive plans can be developed for the relocation of Administrative facilities.
- o New facilities for Liberal Arts-related programs should be focused on the western portion of the campus. A new Assembly/Performing Arts Center should be located in this portion of the campus near Elkton Road.
- o New facilities for more engineering and laboratory oriented programs should be focused on the eastern portion of the campus.

NEWARK CAMPUS - CENTRAL CAMPUS KEY FINDINGS MAP







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NEWARK CAMPUS CENTRAL AREA

KEY FINDINGS

LEGEND

-  POTENTIAL STUDENT UNION LOCATION
-  ADMINISTRATION AND POTENTIAL EXPANSION
-  POTENTIAL PARKING STRUCTURE LOCATION
-  POTENTIAL STUDENT HOUSING LOCATION

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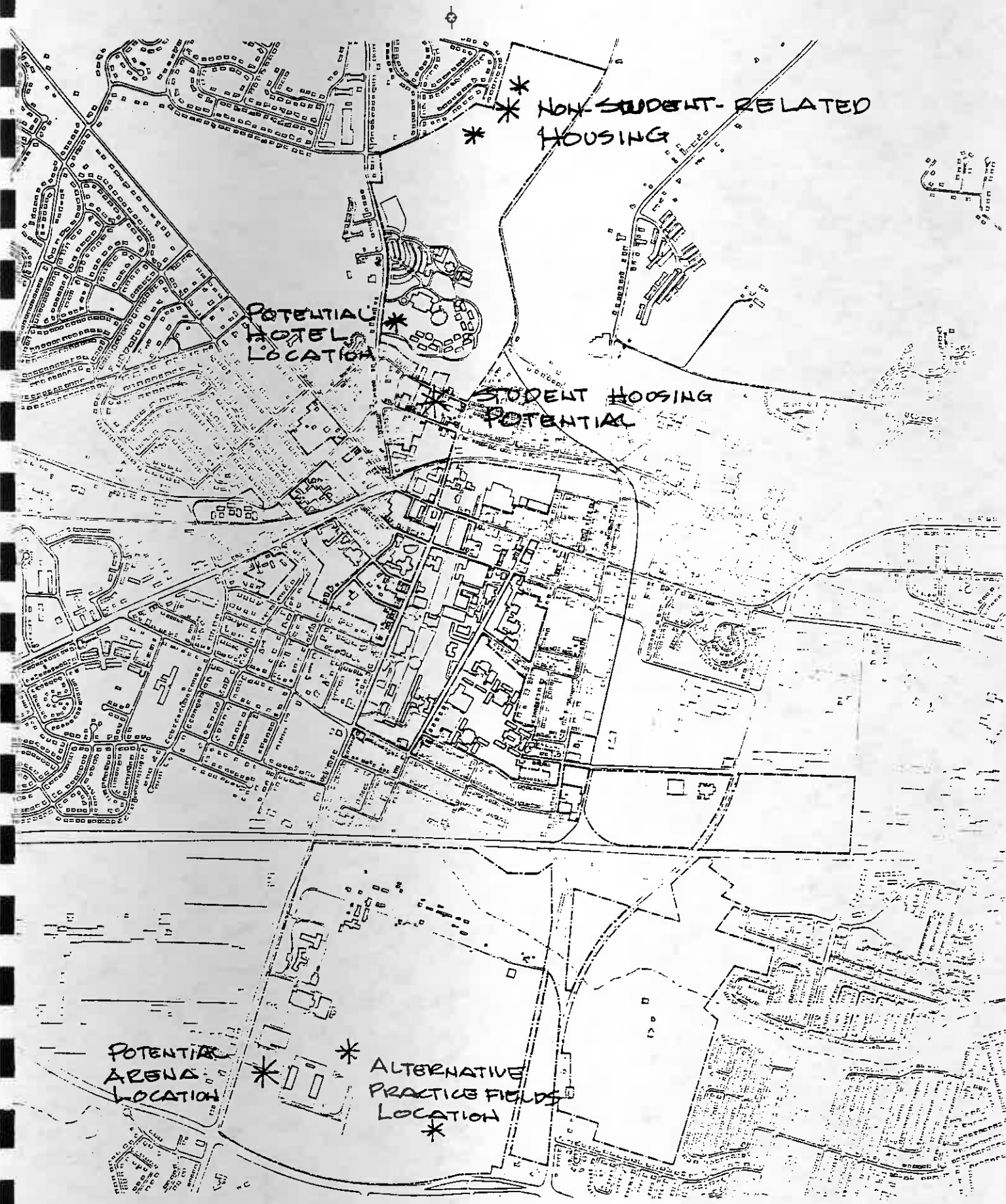
- o A new Student Union should be centrally located on the Campus. The proposed Main Street and Elkton Road location will help to reinforce Main Street businesses.
- o Parking structures should be developed at the periphery of the academic area to relieve the existing parking shortage and to allow additional development opportunities on existing surface parking lots. The structures should be adjacent to the main arterials serving the campus.
- o New student housing could be developed near the present Perkins Student Center and along West Main Street. The West Main Street location could be utilized for low-rise graduate and married student housing. Additional recreation/intramural facilities should be developed in conjunction with the new student housing.
- o The potential for closing portions of College Avenue and Academy Street, and modifying the traffic on East Delaware Avenue should be explored further with local and state officials, in order to provide additional development opportunities and allow improved pedestrian access in an east-west direction. This will also facilitate the provision of additional open space.

NORTH CAMPUS

- o The North Campus area has limited development opportunities, with the exception of the block bounded by North College Avenue, Cleveland Avenue, Rose and Ray Streets. This area could be developed for additional student housing and recreation/intramural facilities.
- o A hotel facility could be developed to the west of Clayton Hall. However, additional analysis needs to be undertaken on the direction of the conference activities and continuing education programs in order to identify a more definitive development program.
- o Non-student-related university housing could be developed in the northern portion of the area.

SOUTH CAMPUS

- o A new 5,000 to 6,000 seat Arena could be developed in the South Campus area near the existing stadium. Additional parking to support the activities of the Arena should be developed adjacent to the facility.
- o The practice fields which will need to be removed to accommodate the Arena and parking should be relocated on the South Campus as close to the Field House as possible while taking into consideration the research activities of the College of Agricultural Sciences.
- o An economic evaluation of agricultural non-research oriented land which is presently being used for crop production and grazing should be undertaken in order to identify additional long-term development opportu-



NEWARK CAMPUS - NORTH & SOUTH

KEY FINDINGS

nities on the South Campus as well as providing the College of Agricultural Sciences with a definitive area which they can rely on to conduct necessary research over an extended period of time.



WILCASTLE/GOODSTAY

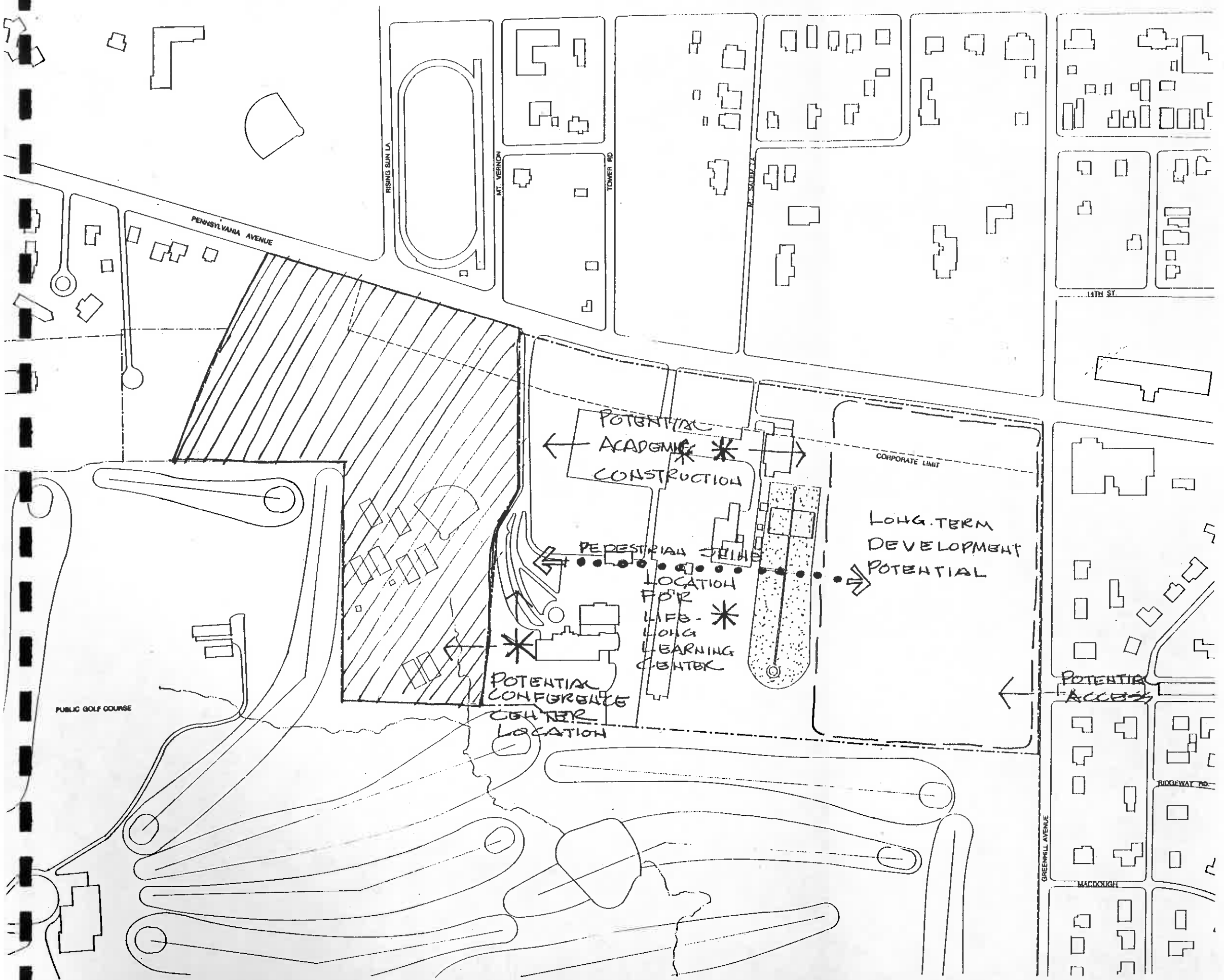
- o This location represents an excellent opportunity for expansion of the University of Delaware presence in the Wilmington area.
- o It is a good location for the Life Long Learning Center and Continuing Education for Wilmington-based business community. Additional market analysis is required to refine the demand for an expanded conference center program, alumni facilities, and academic programs.
- o The property contains 34 acres, of which 29 acres are undeveloped or could be easily redeveloped.
- o No expansion potential is available to the north, east, or south (public golf course). The potential exists for expanding to the west through property acquisition.
- o The proposed Life Long Learning Center should be placed in the center of the property to the west of the formal garden. The center could expand to the north or east.
- o The potential market for expanding the conference center facilities should be explored. The southwest corner of the property would be the best location for development.

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WILCASTLE/GOODSTAY KEY FINDINGS

-  POTENTIAL FORMAL GARDEN RENOVATION
-  POTENTIAL PROPERTY ACQUISITION.



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- o The need for additional academic/continuing education facilities should be explored. Construction should start in the central portion of the property along Pennsylvania Avenue with the potential to expand to the west or east.

- o A central east-west pedestrian spine should be developed for the campus. The renovation of the formal garden should be part of a related open space plan.

- o The large, undeveloped tract of land in the eastern portion of the property should be reserved for long-term development and/or disposition.

POLLY DRUMMOND

- o No major short-term development need was identified for the Polly Drummond property.

- o The property contains approximately 508 acres, which are subdivided by roads into smaller parcels -- western (163 acres), central (309 acres), and eastern (36 acres).

- o Only 170 to 210 acres would be easily developed.

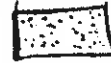

- o The property represents a potential long-term development opportunity for the university for a use yet to be identified or a possible disposition opportunity. Short-term retention of property should not decrease long-term value.

STRATEGIC LAND USE PLAN

UNIVERSITY
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POLLY DRUMMOND KEY FINDINGS

LEGEND

-  POTENTIAL LONG TERM
DEVELOPMENT AREAS
-  POTENTIAL PRESERVATION
AREAS

MIDDLEBURY NATURAL AREA

OPTIONAL
EXPANSION

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GEORGETOWN

- o The property is appropriately meeting experimentation and extension service function.
- o The property contains approximately 347 acres.
- o The majority of the property (83%) is actively used for crop, poultry, or swine experimentation. The remaining 58 acres are wooded.
- o There is no short-term necessity for additional acreage, but contiguous farmland could be useful for crop rotation and additional experimentation if it becomes available.

LEWES


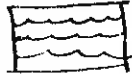


- o Lewes is a good location to respond to anticipated growth of Coastal Region of Sussex County. The growth should produce an increased demand for Life Long Learning programs and continuing education programs; initially in the summer, but potentially expanding to year-round program as the population increases.
- o The property contains approximately 375 acres, including a 107-acre proposed research park.
- o Extensive wetlands and existing development reduce the amount of readily developable land to approximately 167 acres. The Marine Studies campus contains approximately 55 developable acres; the research park area contains roughly 84 developable acres; and a recently acquired property which is adjacent to the research park contains approximately 28 acres of developable land.

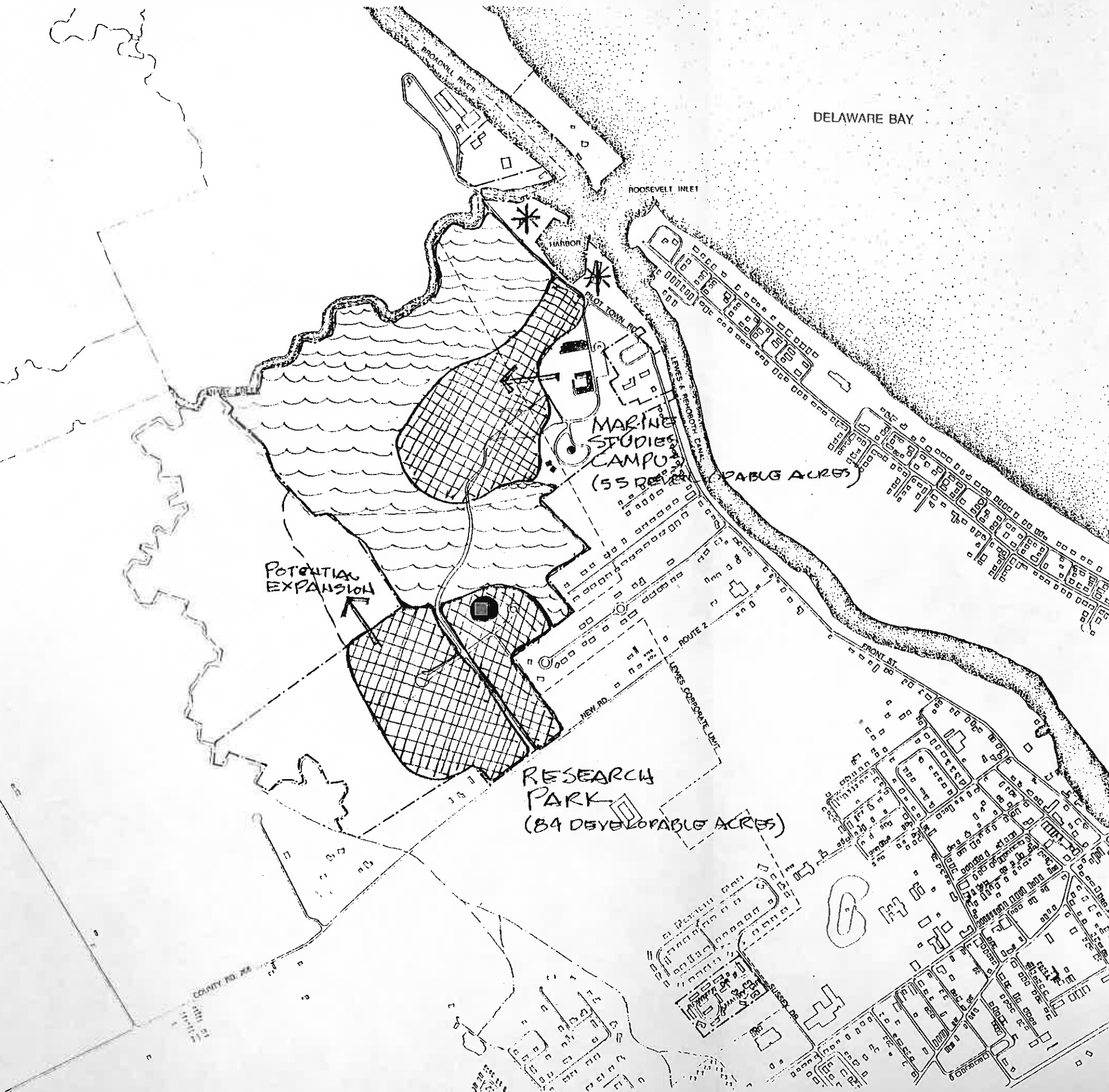
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LEWES CAMPUS KEY FINDINGS

LEGEND

-  POTENTIAL DEVELOPMENT AREA
-  WETLANDS
-  POTENTIAL CONFERENCE CENTER LOCATION
-  POTENTIAL NON-MARINE STUDIES ACADEMIC FACILITIES



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- o The portion of the campus to the west of the existing College of Marine Studies facilities should be reserved for the expansion of the Marine Studies Complex and other academic facilities, as the population of the area increases.
- o The demand for research oriented facilities is uncertain at this time. Therefore, any future research-related development at the park should be kept to the west of the central access road. The eastern portion of the park should be considered for educational facilities which do not need to be associated with the College of Marine Studies, cultural facilities and possibly residential development.
- o The market for an expanded conference center program needs to be explored. If a demand is identified, the new conference facilities should be located adjacent to the harbor near Delaware Bay.
- o Because of the wetlands and existing development, there is limited developable property adjacent to the University's land holdings. If these become available at some point in the future, they should be acquired for long-term growth.
- o The demographic projections between now and the year 2010 indicate that the Dover metropolitan area will be the focus of the greatest growth in Kent County. Therefore, the University should explore ways to increase its presence and academic offerings at this location.

OTHER POTENTIAL LOCATIONS

o Given the projected decline in population in the western portion of Sussex County, any expansion of the University's presence on the Georgetown campus of Delaware Tech and Community College campus should be evaluated in the context of a potential increased university presence at Dover and Lewes.

SECTION 2.0
INTRODUCTION

2.0 INTRODUCTION

PURPOSE OF STUDY

It is the primary intent of this study to review and evaluate the University of Delaware's present land holdings and then develop a strategic plan which identifies properties which should be retained, property which could be made available for lease or purchase, and property which should be acquired to accommodate growth or changes in the University's mission. This strategic plan, along with the extensive, programmatic work which is presently being undertaken as part of Project Vision, will also form the basis for the preparation of a more definitive Master Plan for the respective University land holdings.

STUDY PROCESS

This study was conducted under the direction of the University of Delaware's Land Use Planning committee. Throughout the study, monthly meetings were held with the committee to discuss the progress and direction for the study.

In order to develop the Strategic Land Use Plan, a four step process was undertaken. The initial step involved the inventory and analysis of the University-owned property and an analysis and review of external influences

affecting the development potential of the University's property. Base maps were prepared and used to identify existing land use, the location of existing utilities, topography and major natural and visual features of the respective locations. In addition, neighboring land uses were identified; discussions were held with local government officials regarding plans for the respective areas; growth pressures and real estate trends; existing and projected utility and traffic capacities were evaluated; and a series of interviews were conducted with real estate brokers, developers, and county and state planning officials.

The second step was to work with the University community to identify short-term and long-term development needs. This information was gathered through questionnaires and follow-up interviews involving over 125 individuals representing a broad spectrum of the University, including students, faculty, deans, administrators, and the President of the University. The respondents were asked to evaluate the adequacy of the amount of space devoted to various land uses, the appropriateness of the location for the uses, and the quality of the space associated with these uses.

The third step involved the identification of property which was available for development or had the potential to be redeveloped for more intensive use. The needs identified through the questionnaires and interviews and a review of information regarding proposed University-related development, were then compared with available land for future development. Next, recommendations were

made regarding land which should be retained, land which could be considered for disposition and land which should be considered for acquisition.

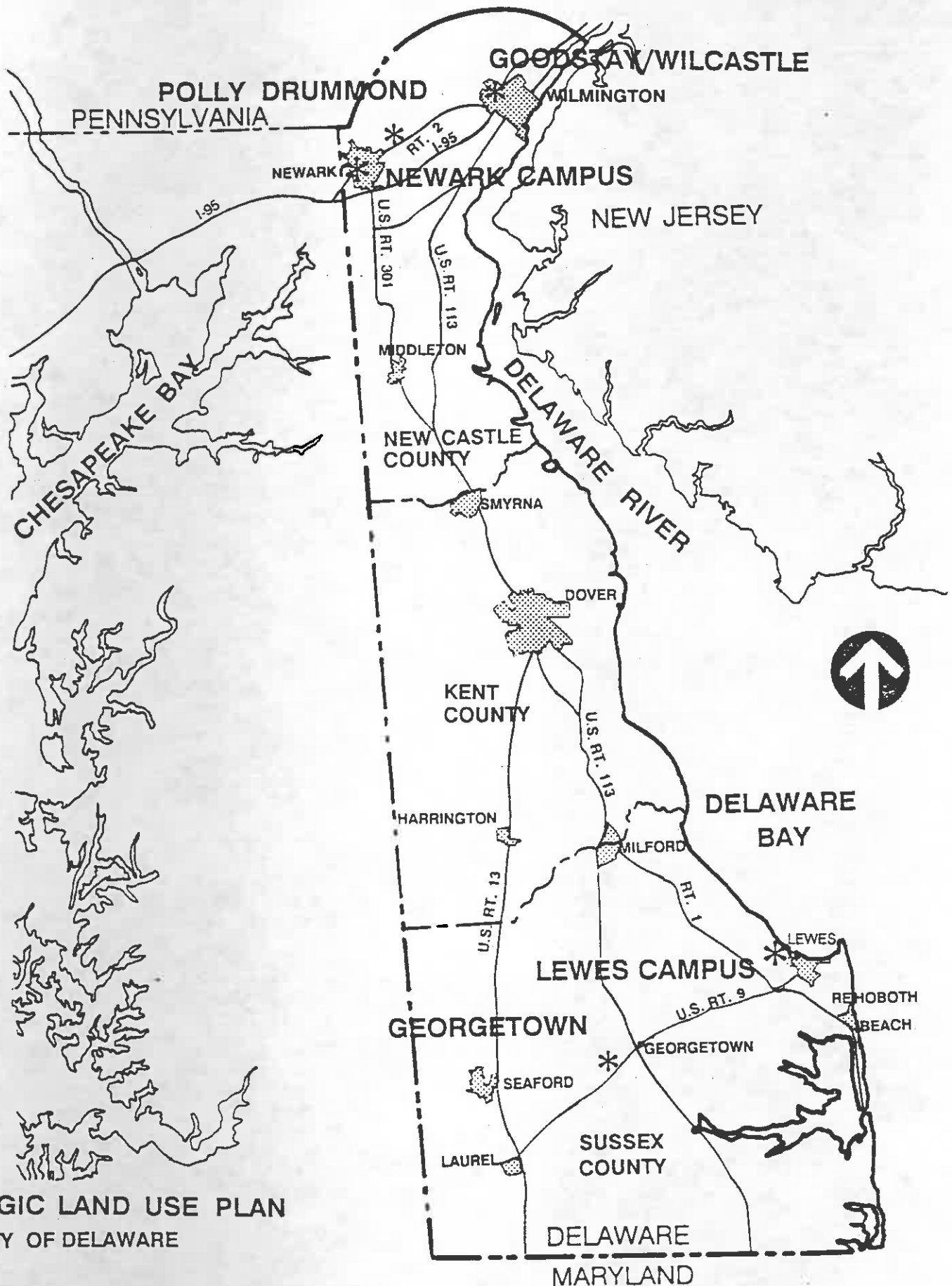
The final step was the development of a generalized Strategic Land Use Plan for the property to be retained or acquired. The plan described specific actions required to accommodate short-term development and needed to facilitate potential long-term growth.

REPORT ORGANIZATION

The remainder of the introductory section of this report provides a general description of the characteristics and location of the five property holdings under study and then reviews University and Delaware population trends which could influence the character and location of future University development in the state.

The five sections which follow discuss the existing conditions of the University property and neighboring development, then describe the "projected development needs", identify available "development opportunities", and propose "potential University actions" for each of the five property holdings -- the Newark Campus, the Polly Drummond property along Route 2, the Wilcastle/Goodstay property near Wilmington, and the Georgetown College of Agricultural Sciences Research and Education Center, and the Lewes College of Marine Studies campus in Sussex County.

The final section of the study describes the ongoing planning process required to refine and implement the Strategic Land Use Plan.



STRATEGIC LAND USE PLAN
UNIVERSITY OF DELAWARE

LOCATION OF UNIVERSITY
OWNED PROPERTY

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NEWARK CAMPUS LOCATION AND HISTORICAL DEVELOPMENT MAP GOES HERE

uses. The Mall offers strong definition to the buildings along its edge. Less well defined are the east and west edges of the Central campus where property intermingles with its residential and commercial neighbors.

HISTORICAL DEVELOPMENT - The original campus buildings date back to the mid-19th century. Old College (1834) and surrounding buildings form a small quadrangle north of Main Street. The acquisition of land south of Old College between South College and Academy Avenues allowed room for much needed expansion. A building program initiated in 1913 for the Women's College began almost immediately after the project's acquisition.

The Women's College was built in the southern area of the enlarged campus. At the same time, a Philadelphia architectural firm, Day and Klauder, planned the campus Mall. This Mall ran as a spine parallel to Academy and South College Avenues. Since the construction of the Women's College, the University has gradually filled in most of the Mall's building sites. By the late 1950s, the University pushed both east and west from the Academy/South College core. The late 1950s and early 1960s witnessed the construction of several large dormitory complexes. By the 1970s, new construction focused upon needed academic space.

The North campus contains the Pencader and Christiana Dormitory complexes as well as the Clayton Hall conference center. Developed in 1972, this complex has not had any recent additions. Perched on high ground, the Christiana Towers assume a commanding presence over the low-rise campus. The natural wilderness surrounding the

complex offers considerable contrast to the campus' more urban areas. In parts, the land's steepness prevents easy development.

In contrast, the South campus with its agricultural and athletic fields appears relatively flat. Wooded areas and fields predominate. Since the 1950s, construction has been sporadic. New facilities for the agricultural college and the athletic department have been added when needed. An area called "The Farm" has approximately 54 structures that service the College of Agricultural Sciences.

POLLY
DRUMMOND

The Polly Drummond property lies between Wilmington and Newark along Kirkwood Highway (Route 2). Its close proximity to the Newark Campus (2.5 miles) and the Wilmington Campus (9 miles) perhaps represents the major reason for its lack of University facilities. The former Judge Morris property is lush with woods and fields. In places, the land slopes so steeply that construction would be difficult.

WILCASTLE/
GOODSTAY

Located adjacent to the Wilmington city limits, the Wilcastle/Goodstay complex provides a Conference Center and a Life Long Learning Center for the residents of the greater Wilmington area. The University acquired the house and garden (Goodstay) and the former country club (Wilcastle) in 1969 and 1970 respectively. The Goodstay Center, with its home and formal garden, was constructed circa 1740. The neighboring private high school, golf course, and affluent residences provide a positive image for the area.

LEWES

The College of Marine Studies and Research Park lie one mile northwest of Lewes in southern Sussex County. The campus surrounds a small harbor off the Roosevelt Inlet, which empties into the Delaware Bay. Route 1 connects Lewes to the more populace northern Delaware. U.S. Route 9 connects Lewes to the rest of southern Delaware.

In addition to the proposed research park, the University has several operating facilities related to marine studies. They include the Henlopen Lab, Pollution Ecology Lab, the Bayside Lab, the Shellfish Lab, the Cannon and Smith Labs, and the Virden Conference Center. The University also owns property closer into Lewes. Housing is provided on this property. The Hooper Marine Operations Building, the Cannon and Smith Labs were completed in 1975. The Virden Center was completed in 1981.

GEORGETOWN

The Georgetown campus in Sussex County serves as the College of Agricultural Sciences Research and Educational Center. It lies approximately three miles southwest of Georgetown. In the middle of southern Delaware, the Center epitomizes the agricultural predominance of Sussex County. University property is surrounded by farm land and wooded areas. Two separate tracts of land form the University's holdings. The larger tract contains various fields for research along with institutional buildings, residences and poultry sheds. The smaller property is entirely tillable fields. U.S. Route 13 connects Georgetown to Dover and Wilmington. Route 9 cuts across Sussex County along a diagonal beginning in the upper northeast corner. Georgetown sits approximately at Route 9's midpoint. Route 9 nearly bisects University property.

EXISTING EDUCATIONAL PROGRAM AND ASSOCIATED UNIVERSITY POPULATION

The University offers a diverse selection of educational programs. Disciplines are grouped together in ten colleges. Depending on the field of study, the colleges grant Associate, Bachelor, Master, and Doctorate degrees. The following table indicates University colleges and the degrees offered.

TABLE 2.1

College of	Degree Granted			
Agricultural Sciences	Associate	Bachelor	Master	Doctorate
Arts & Sciences	Associate	Bachelor	Master	Doctorate
Business & Economics	Associate	Bachelor	Master	N/A
Education	Associate	Bachelor	Master	Doctorate
Engineering	Associate	Bachelor	Master	Doctorate
Human Resources	Associate	Bachelor	Master	Doctorate
Marine Studies	N/A	N/A	Master	Doctorate
Nursing	N/A	N/A	Master	N/A
Physical Education	N/A	N/A	Master	N/A
Urban Affairs & Public Policy	N/A	N/A	Master	N/A
Office of Graduate Studies	N/A	N/A	Master	N/A

(N/A = Not Applicable)

UNIVERSITY POPULATION

Overall, 16,085 students matriculated at the Newark campus in the 1987-88 school year: 13,936 undergraduates and 2,149 graduate students. In the past three years, student enrollment figures have risen at a yearly average of 2%.

The enrollment figures for the other campuses, 2,982 for Fall 1987.

The number of full-time faculty in 1987-88 was 855. Since the Fall of 1985, total full-time faculty has risen yearly between four and five percent. A total of 2,498 full-time professionals and staff worked for the University in the Fall of 1987. The rate of growth since 1985 has been between three and four percent.

OVERVIEW OF POPULATION TRENDS IN DELAWARE AND ITS THREE COUNTIES

It is important that any consideration of future land use needs for the University be measured against future demographic trends for the various counties and major cities in Delaware. Therefore, this section summarizes recent trends and projections in population growth in Delaware, the three counties of Delaware, and the major cities of Newark, Wilmington, and Dover. (A more detailed discussion of population trends is included in Appendix A.) These trends and projections raise important questions regarding the future location of educational facilities for of the University of Delaware.

Population growth in Delaware is projected to be very strong in the next 20 to 25 years. Yet, there are notable geographic and age-group differences which potentially affect the University of Delaware.

For instance, the southern part of Delaware (south of the Chesapeake & Delaware Canal) will slowly be increasing its share of the state's population even as the

northern part continues to grow. That is, growth rates south of the canal are projected to exceed those north of the canal. There could, therefore, be growing pressure to offer more University services in places other than Newark and Wilmington.

This trend is most apparent in the eastern, coastal sections of Sussex County. The State of Delaware is projected to grow in areas south of the Chesapeake & Delaware Canal despite some very large population losses projected for western Sussex County. The reason is that Coastal Sussex will be growing very rapidly. Added to this growth will continue to be a doubling in the number of Coastal area residents every summer. This strong growth in southeastern Delaware may suggest increasing opportunities for the University of Delaware from its Lewes facilities and, perhaps, a decreasing importance of the Georgetown facilities.

The steady growth of the Dover area also suggests implications for the University. Population in Kent County will gradually become more concentrated in the immediate Dover area while Kent County as a whole continues to grow. A greater presence of the University in Dover warrants serious consideration in order to take advantage of Dover's growing prominence in the state.

In New Castle County, the trends are toward more overall growth, but a lessening in the relative importance of eastern New Castle County areas and a greater share of the population to the west. Thus, the Newark campus itself can become ever more prominent as New Castle County changes demographically, economically, and phy-

sically. At the same time, the City of Wilmington will remain the dominant city in Delaware -- a state noted for its particular business location value. Wilmington is the center of this business advantage. A greater array of services offered by the University in the Wilmington area, therefore, continues to deserve serious attention.

Added to these geographic dimensions are the various age cohorts of the population. Delaware is a rapidly growing state, but not for all age groups. Indeed, the number of college-age residents in Delaware is projected to remain very stable through the year 2010. Yet the elderly population is projected to increase in size substantially. This elderly group, of course, is comprised of the longer-term survivors of the post-World War II baby boom, a market which has dominated all aspects of the economy for nearly forty years and will continue to do so for another forty.

TABLE 2.2
CHANGES IN POPULATION (1985-2010)
STATE OF DELAWARE AND COUNTIES

Age Groups	New Castle County	Kent County	Sussex County	State of Delaware
0 - 14 years % of State	6,560 35%	2,860 15%	9,250 50%	18,670 100%
15 - 19 years % of State	2,490 37%	1,410 21%	2,890 43%	6,790 100%
20 - 24 years % of State	(1,690) 650%	(260) 100%	1,690 -650%	(260) 100%
25 - 34 years % of State	(5,100) 962%	(10) 2%	4,580 -864%	(530) 100%
35 - 59 years % of State	59,840 54%	22,620 20%	29,120 26%	111,580 100%
60 - 64 years % of State	8,550 55%	3,600 23%	3,370 22%	15,520 100%
65 - 69 years % of State	5,230 60%	2,350 27%	1,190 14%	8,770 100%
70 years & up % of State	20,710 73%	4,520 16%	3,290 12%	28,520 100%
Totals % of State	96,590 51%	37,090 20%	55,380 29%	189,060 100%

Sources: University of Delaware, University Planning
System;
Development Strategies, Inc.

For the University of Delaware, this probably means tougher competition to attract traditional college-age students if the university desires to increase the number of 18-to-23 year old enrollees. More recruitment of out-of-state students will, therefore, be necessary. But the projected population changes also mean that many opportunities present themselves regarding other age groups, the elderly in particular. These people, as

they age, will be the healthiest, wealthiest, and longest living generation in history. They will also be highly educated and informed, as a group. Their interests are, and will continue to be, broad and varied. Their demands for learning have already proven to be a boon to the education industry and this trend should continue as their children grow up, they retire, and they find themselves with an abundance of leisure time.

The creation of programs which involve a much greater share of the non-traditional college student market is strongly supported by the population projections. And these programs can be applied state-wide, with the exception, perhaps, of western Sussex County. The projections clearly show that serious attention should be paid to strengthening the University's of Delaware's operations in the Lewes area, Dover, Newark, and (but to a somewhat lesser degree) Wilmington.

OVERVIEW OF RECENT UNIVERSITY OF DELAWARE ENROLLMENT TRENDS

ENROLLMENT BY LOCATION

Table 2.3 shows University enrollment split between the Newark campus and all other locations in the state for the years 1978 through 1987 (fall enrollment figures). In 1987, total enrollment was 19,067 students, suggesting almost stable conditions with only a 1.6% increase from 1978. Indeed, a closer look at enrollment trends since 1978 indicates a high degree of overall stability. Peak enrollment was achieved in 1980 when there were 19,620 students (just 2.9% more than 1978) while the low point was in 1984 with 18,083 students (only 5.1% less than in 1978). The overall trend has been one of slight variations between about 18,000 and 19,600 students over the ten year period, with a net

change of only 1.6% as of 1987. This relative stability is important to keep in mind when reviewing overall state population growth patterns.

Of total, state-wide enrollment in 1987, 82% of the students attended school in Newark, the same percent as in 1978. Newark's share of total university enrollment, in fact, has ranged tightly from 80% to 86% of all students during the ten year period. Conversely, all other locations of University facilities have had between 14% and 20% of University enrollment which, because of the their smaller numbers, indicates a higher degree of volatility.

Net change in enrollment at the Newark location between 1978 and 1987 was a 2.2% gain, compared to a net decline of 0.9% at all other locations. A quick review of the numbers on Table 2.3 reveals that the Newark campus has been the more stable location in terms of numbers of students, ranging tightly between about 15,300 to 15,800 students. Any real volatility of enrollment figures is accounted for by all the other locations combined (data for individual locations outside of Newark were not available). University students enrolled at locations outside of Newark ranged in number from about 2,550 to nearly 4,000 between 1978 and 1987. In fact, enrollment at all other locations experienced a sharp decline between 1980 and 1985 of some 35%, before climbing again sharply by 1987.

TABLE 2.3
UNIVERSITY OF DELAWARE ENROLLMENT BY LOCATION, 1978-1987

YEAR	NEWARK CAMPUS	% of State	ALL OTHER LOCATIONS	% of State	UNIVERSITY TOTAL	% of Univ.
1978	15,359	82%	3,401	18%	18,760	100%
1979	15,331	80%	3,911	20%	19,242	100%
1980	15,642	80%	3,978	20%	19,620	100%
1981	15,831	84%	3,088	16%	18,919	100%
1982	15,596	83%	3,281	17%	18,877	100%
1983	15,631	86%	2,602	14%	18,233	100%
1984	15,528	86%	2,555	14%	18,083	100%
1985	15,589	86%	2,573	14%	18,162	100%
1986	15,628	84%	3,003	16%	18,631	100%
1987	15,695	82%	3,372	18%	19,067	100%

GROWTH RATES

1978-1979	-0.2%	15.0%	2.6%
1979-1980	2.0%	1.7%	2.0%
1980-1981	1.2%	-22.4%	-3.6%
1981-1982	-1.5%	6.3%	-0.2%
1982-1983	0.2%	-20.7%	-3.4%
1983-1984	-0.7%	-1.8%	-0.8%
1984-1985	0.4%	0.7%	0.4%
1985-1986	0.3%	16.7%	2.6%
1986-1987	0.4%	12.3%	2.3%
1978-1987	2.2%	-0.9%	1.6%
1980-1985	-0.3%	-35.3%	-7.4%
1982-1986	0.2%	-8.5%	-1.3%

Sources: University of Delaware, University Planning System;
Development Strategies, Inc.

ENROLLMENT BY
IN-STATE/
OUT-OF-STATE

Table 2.4 shows the breakdown of University enrollment by students who are permanent Delaware residents and those who come from other states/countries between 1982 and 1986, the only period of time for which data were made available. Total figures vary slightly from those in Table 2.3, probably due to differing sources of the data and/or because information on specific permanent residence locations for some students could not be ascertained.

TABLE 2.4
UNIVERSITY OF DELAWARE ENROLLMENT BY STATE, 1982-1986

YEAR	DELAWARE STUDENTS	% of State	OUT OF STATE	% of State	UNIVERSITY TOTAL	% of Univ.
1982	10,909	59%	7,706	41%	18,615	100%
1983	10,405	57%	7,828	43%	18,233	100%
1984	9,614	53%	8,469	47%	18,083	100%
1985	9,311	51%	8,851	49%	18,162	100%
1986	9,250	50%	9,381	50%	18,631	100%

GROWTH RATES

1982-1983	-4.6%	1.6%	-2.1%
1983-1984	-7.6%	8.2%	-0.8%
1984-1985	-3.2%	4.5%	0.4%
1985-1986	-0.7%	6.0%	2.6%
1982-1986	-15.2%	21.7%	0.1%

Sources: University of Delaware, Office of Institutional Research and Planning "Facts & Figures, 1986-87";
Development Strategies, Inc.

During the 1982 to 1986 period, the total number of Delaware residents enrolled at the university declined by 15.2% while out-of-state resident students increased 21.7%. Consequently, Delaware residents represented just fifty percent of all University students in 1986 after having made up 59% just four years earlier. Out-of-state students increased their share of total enrollment from 41% in 1982 to 50% in 1986.

Again, this trend is important to keep in mind when reviewing the data for age-group population projections later in this report. It becomes clear that continued strong dependence on out-of-state students in the traditional college student age group (say, 18 to 23 years) will likely be necessary.

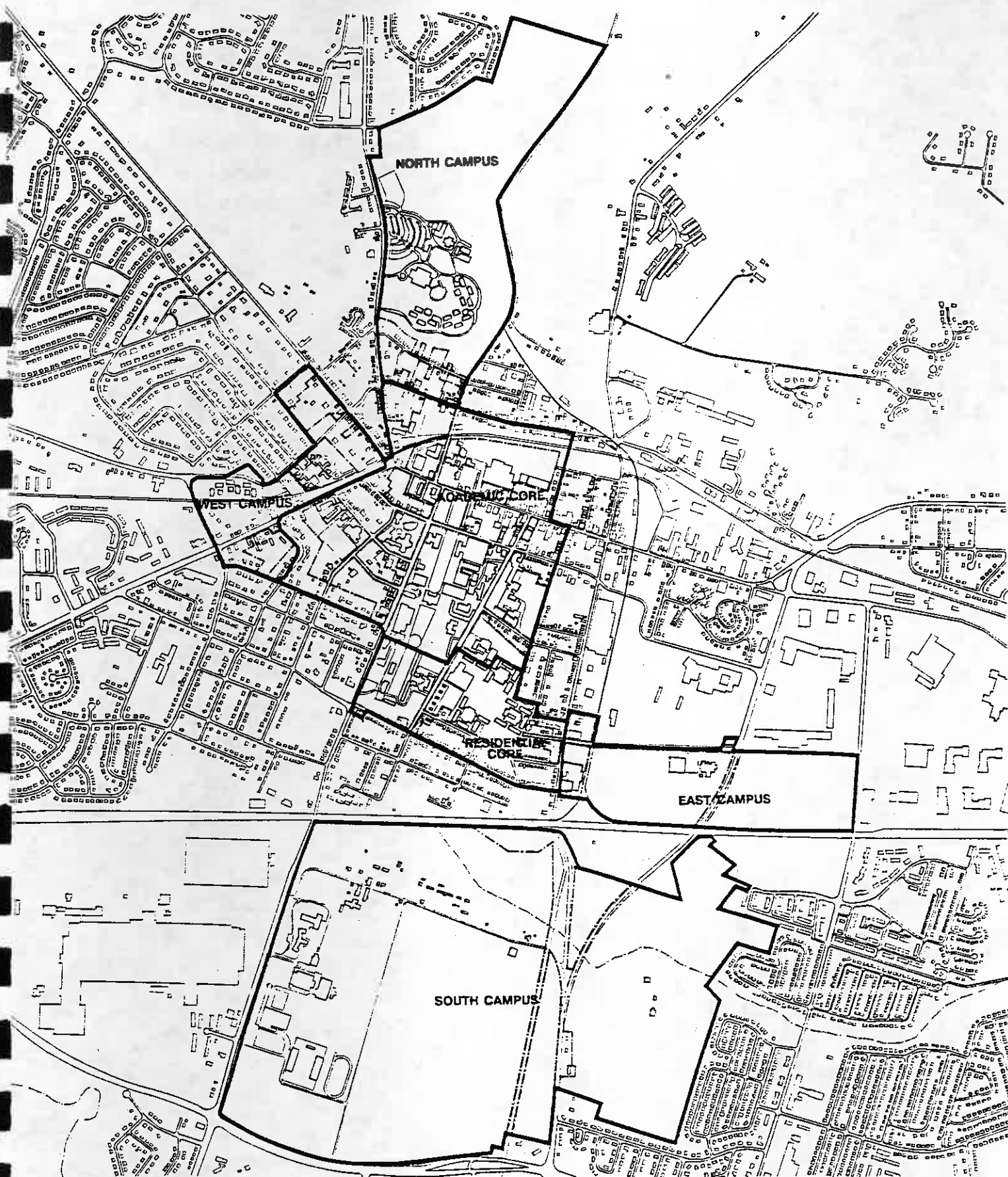
SECTION 3.0
NEWARK CAMPUS

3.0 NEWARK CAMPUS

INTRODUCTION

The diversity of site characteristics, the existing development and the external conditions influencing the development potential at Newark makes it desirable to divide the campus into sub-areas enabling a more focused analysis. Each sub-area has distinct characteristics influenced by development patterns and site characteristics. Traditionally, the campus has been divided into three geographic areas -- north, south and central.

This study proposes to focus upon six sub-areas. The North and South Campuses remain the same. The Central Campus has been divided into four separate areas -- East Campus, West Campus, Academic Core and Residential Core. North Campus includes all University property north of Cleveland Avenue. The boundaries of South Campus are defined by the Amtrak/ Conrail tracks, South College Avenue, Chestnut Hill Road, and the Brookside Park subdivision. East Campus extends from South Chapel Street on the west along a narrow band to Marrows Road on the east. Wyoming Road and the Conrail lines, in part, determine the north and south edges. This sub-area also includes a small parcel at the northwest corner of Wyoming Road and Library Avenue. The West Campus comprises an area west of Elkton Road and south of West Main



NEWARK CAMPUS SUB AREAS

NEWARK CAMPUS AERIAL PHOTOGRAPH (1" = 400')

Street. This predominantly residential area includes several acres bounded by Beverly Road, Elkton Road, and Winslow Road. The Academic Core includes all property south of Cleveland, east of Elkton/Beverly Roads, west of Haines Street and north of Winslow Road. This includes all non-residential buildings north of the South Mall dormitories and the Russell/Gilbert/Harrington housing complex. The Residential Core consists of the dormitory complexes previously mentioned, residences along Wyoming Avenue and the Mall's southern portion.

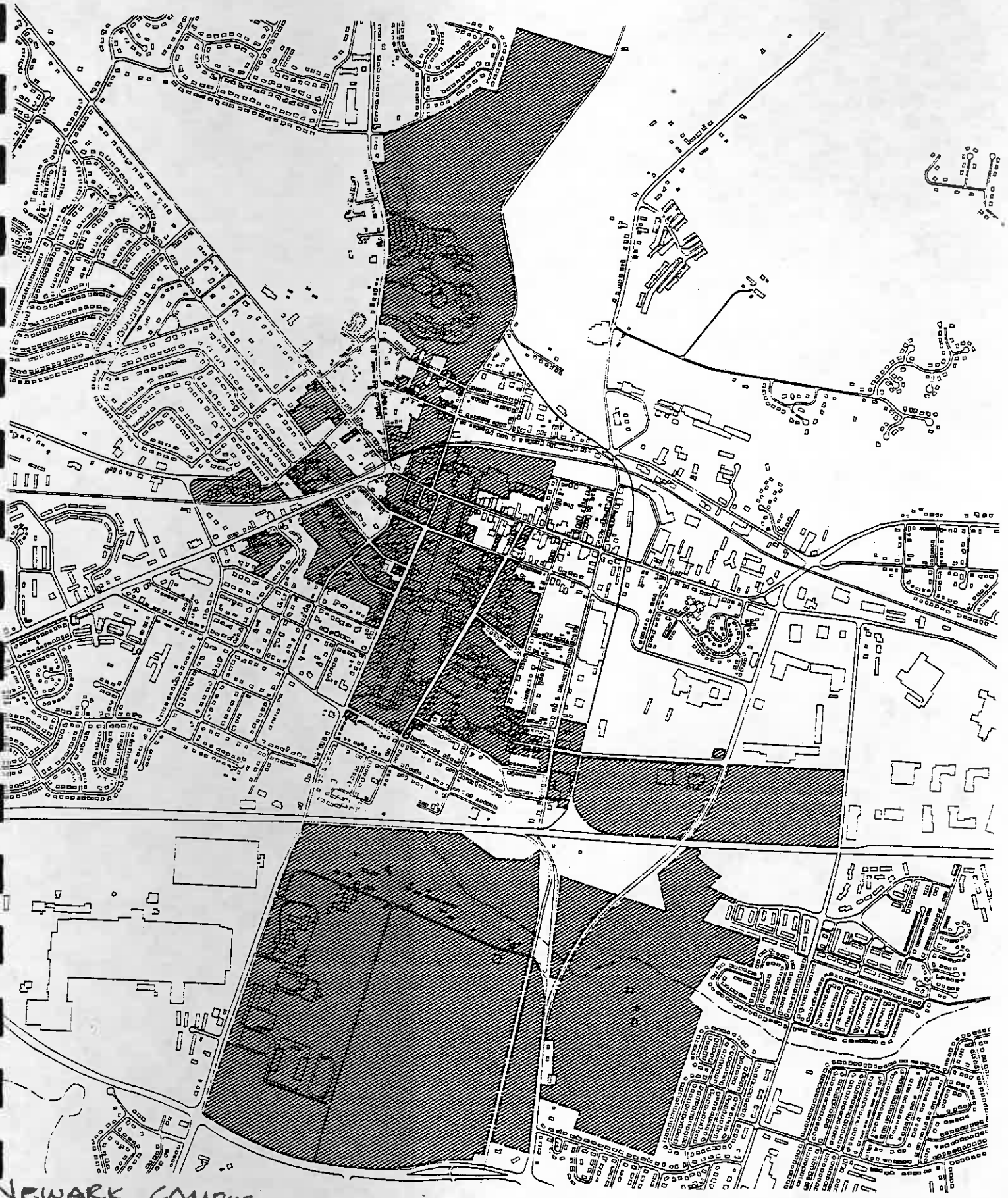
SITE CHARACTERISTICS

ACADEMIC CORE

The Academic Core represents the campus' intellectual focus. Both the Mall and the classical language of the older buildings reinforce this image.

This area claims the densest development. The academic core contains 131 acres. Four separate districts loosely compose this area. The northern area, bounded by Main Street, New London Road, Cleveland Road, and the Chessie System Railroad tracks, contains nearly 31 acres. The western district (Main Street, Elkton Road, South College, and Winslow) has 32 acres. The district defined by the Mall and the eastern district (Academy, Main, Haines Streets and the Penny Hall/Ocean Engineering Buildings) have 45 and 20 acres respectively.

Formed by street and ownership patterns, the configuration of each district appears irregular in shape. The campus Mall and the bordering streets create a strong definition to the central portion of the Academic Core.



NEWARK CAMPUS - UNIVERSITY PROPERTY

The edges that contain the other three districts, however, appear less well defined. These areas lack a visual continuity that unifies the entire Academic Core.

The Mall and the generous amounts of lawns surrounding the University buildings are the most salient natural feature. This open space provides the University with much of its visual and symbolic character. The land gently slopes, descending from the North Campus.

RESIDENTIAL CORE

This area has had a residential focus since the planning of the Mall. Over the years, dormitories have been consistently added.

The residential core contains approximately 42 acres. Thirty percent (13.5 acres) is sited on the Mall. Another 57% (24 acres) of land forms a Quadrangle. The remaining acres are scattered parcels facing Wyoming Road, Academy Street and East Park Place.

The relationship between buildings and open space is well defined. Dormitories on the Mall define its edges visually, the buildings enclose the Mall's southern portion. Carved from the dormitories of Harrington/Russell/Gilbert is a residential quadrangle. These two types of configuration of building and landscape help create an important sense of place.

The Mall, the quadrangle and the lawns between the streets and buildings provide aesthetic and recreational value. The lawns (7 acres of open space) create a visual transition between neighboring residential areas

and the larger scaled University building. While the lawns do not carry the same symbolic significance as the Mall, they add a lushness to the University landscape.

WEST CAMPUS

The primarily residential West Campus lies separated from the core by railroad tracks and a commercial strip that runs along Elkton Avenue. These physical and visual barriers tend to segregate the West Campus. In addition, the five parcels that form the West Campus share no common borders. This further serves to fragment the various dormitory complexes from one another. Unlike the Residential Core, the four housing complexes share no common quadrangle or green.

West Campus lies on approximately 26 acres. The five separate parcels that define this area range in size from 0.3 to 8 acres.

While the five parcels share no common borders, the two largest parcels (Rodney and Dickinson complexes) have edges that back up to the Chessie System railroad tracks. Hillside Road and the tracks create a corridor in which Rodney/Dickinson sits. The front of these complexes, along Hillside Road, faces away from the campus. As the corridor narrows, a public swimming pool separates Rodney and Dickinson. Two parcels front West Main Street. The larger property (Foreign Language and Belmont houses) occupies nearly two-thirds of a square block. The smaller property (Music House), 0.3 acres, is the only University-owned property on this block. Single family residences surround the University property.

The College Towne dorms sit on an irregularly-shaped parcel along Elkton Road. It remains isolated from both the other West Campus buildings and the Core.

West Campus generally slopes from the northwest to the southeast. Any salient natural features were likely extinguished by the density of development.

EAST CAMPUS

Roughly, 81 acres comprise the East Campus. Eight acres straddle Wyoming between South Chapel Street and a Conrail spur. Seventy-three acres extend along another set of Conrail tracks from the general services building to Morrows Road.

Divided in half by Library Avenue, the 73 acres, extending east and west, form two rectangular-shaped tracts. In addition, a small parcel (0.3 acre) sits at the northwest corner of Library Avenue and Wyoming Road. The eight acres straddling Wyoming form two north/south rectangular parcels.

The land is relatively flat. Fields and a wooded area comprise the natural features.

NORTH CAMPUS

North Campus contains approximately 165 acres. 160 acres are bordered by Ray Street, New London Road, and North College Avenue. Approximately five acres are parcels in a mostly-residential area between Cleveland and Ray Streets. The Pencader, Christiana and Clayton Hall complex, inclusive of parking and recreational areas, comprises 42 of the 165 acres.

The area extends north and south for nearly a mile. Its irregular shape is contained by North College Avenue and

New London Road. Its broadest area contains the conference center and dormitories.

The majority of undeveloped land is wooded. In some parts, the terrain slopes steeply. Significant portions range from 15% to 25% slope. A smaller percentage slopes at 25% and above. This makes construction quite difficult and costly. Set generally on high land, the natural beauty of North Campus overlooks the campus' more urban areas. The campus facilities, surrounded by woods and White Clay Creek, provide a natural setting.

From the upper floors of Christiana Towers, the students have spectacular views. From the ground, the towers appear to rise dramatically out of the woods.

SOUTH CAMPUS

South Campus contains approximately 494 acres. Most acreage (411 acres) is devoted to the College of Agriculture. Athletic fields compose the rest.

This area can be subdivided into two sections split along a north-south axis by the Amtrak/Conrail tracks. Bounded by South College Avenue, Chestnut Hill Road and Amtrak/Conrail lines. The western portion contains all the athletic facilities and the majority of farm buildings. South Chapel Street and Library Road pass through the eastern portion. This area is smaller and bounded by residential areas along the south and east edges. Like the western portion, it is roughly rectangular in configuration. A 15-acre irregularly-shaped parcel extends along Library Avenue between the Amtrak rails and a wooded area.

The topography's flatness makes this area ideal for agricultural field research and athletic recreation. Two wooded areas (62 acres) interrupt the site's relative openness. The 40-acre Ecology Woodlot extends along the eastern edge of the athletic facilities. The other wooded area is in the upper northeast corner of the South Campus.

EXISTING DEVELOPMENT

LAND USE

ACADEMIC CORE - The dominant land use, academic, accounts for nearly 50 acres (38% of the total Academic Core). Other land use is devoted to parking (33 acres), open space (28 acres), administration (8 acres), and housing (6.2 acres). This area incorporates the broadest cross section of land uses. Open space, which represents an estimated 22% of the area's land, is utilized in several patterns. The Mall, the Quadrangle at Old College, and the lawns in front of Old College represent important open spaces that possess aesthetic and symbolic value. This comprises essentially eight acres of the 28 acres of open space. Recreational areas account for 3.5 acres. This includes tennis courts near Carpenter Sports Building.

Another 13.5 acres are devoted to open space. This includes 7 acres of playing fields north of Carpenter and 5 acres of lawns surrounding Alison Hall.











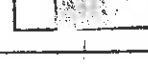
Housing represents 6.2 acres. This divides nearly evenly between student housing and the building and grounds of the President's house.

STRATEGIC LAND USE PLAN

UNIVERSITY
OF
DELAWARE

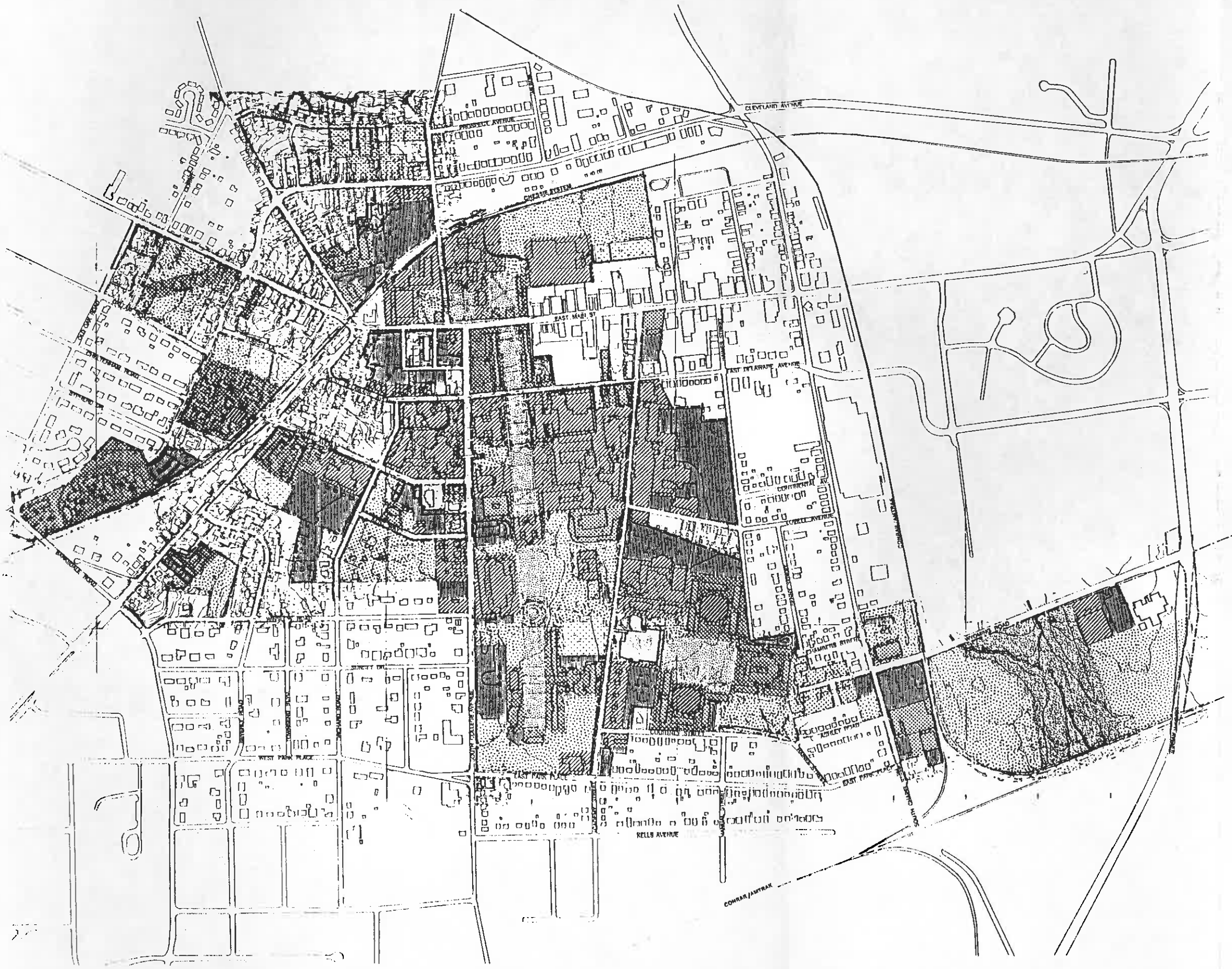
NEWARK CAMPOS - CENTRAL EXISTING DEVELOPMENT

LEGEND

-  - WOODED AREA
-  - RECREATIONAL AREA (INTRAMURAL)
-  - PRESERVED OPEN SPACE
-  - ACADEMIC
-  - FOOD SERVICE
-  - OPEN SPACE
-  - ADMINISTRATION
-  - PARKING AREA
-  - RESIDENTIAL
-  - RESIDENTIAL (Non-DORMITORY)
-  - STUDENT ACTIVITIES

DEVELOPMENT STRATEGIES, INC.

911 Washington Avenue
St. Louis, Missouri 63101



RESIDENTIAL CORE - Residential use accounts for 18.6 acres (44% of total). Another 13 acres is devoted to open space (31%) and five acres for various parking lots. Student activities, administrative, academic and food service functions complete the land uses. This relationship between dorm and open space becomes important as it allows students an area to congregate and recreate.

WEST CAMPUS - Existing development divides itself between student housing, 111 acres, and open space, 9 acres. Together, these account for 77% of the land use. The remaining land use is devoted to parking and recreational use (tennis courts).

EAST CAMPUS - Presently, the primary land use is farming. Part of this area (42 acres) has been designated as a future research park, yet no construction has begun. Nearly 68 acres (84%) of a total 81 acres are fields or wooded. The Institute of Energy Conservation (I.E.C.) and a day care center sit at the southwest corner of Library Avenue and Wyoming Road. A parking lot adjoins them. A portion of the wooded area has been cleared for service vehicle parking. The two smaller tracts (8 acres) are more densely utilized. These contain the General Services Building, the Computer Center, Solar House and several parking lots.








NORTH CAMPUS - The primary land use is the undeveloped wooded area that surrounds the complex. Dormitories are the secondary land use. Each have separate commons areas and food service. The majority of parking spaces face New London Road. They form arcs radiating outward toward the complex's buildings. Approximately, 11.4

STRATEGIC LAND USE PLAN

UNIVERSITY
OF
DELAWARE

NEWARK CAMPOS - NORTH EXISTING DEVELOPMENT

LEGEND

-  - WOODED
-  - PARKING
-  - OPEN SPACE
-  - RESIDENTIAL
-  - RESIDENTIAL (NON-REMITORY)
-  - CONFERENCE CENTER
-  - FOOD SERVICE

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STRATEGIC LAND USE PLAN

UNIVERSITY
OF
DELAWARE

NEWARK CAMPUS- SOUTH
EXISTING DEVELOPMENT

LEGEND

- PASTURE
- CROP PRODUCTION
- CROP RESEARCH
- WOODED
- INTERCOLLEGIATE ATHLETIC FIELD
- PARKING
- ACADEMIC
- RECREATION-INTERCOLLEGIATE
- INTERCOLLEGIATE BLDG.
- RESIDENTIAL (NON-UNIVERSITY)
- BARN & SHEDS

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acres (7%) is devoted to parking. About one acre is used for recreational use (tennis and basketball courts).

SOUTH CAMPUS - Predominant land uses include agricultural and athletic fields. The following table lists the various land uses for the College of Agriculture.

TABLE 3.1
SOUTH CAMPUS AGRICULTURAL LAND USE

Land Use	Acres	Percentage
Crop Research	45	10.9%
Grazing	90	21.8%
Land Fill	5	1.2%
Roads & Buildings	15	3.6%
Silage, Hay & Straw Production	192	46.6%
Wooded	65	15.8%
Total	412	99.9%

Approximately, 82 acres is used for athletics. This accounts for 17% of the total South Campus.

BUILDINGS

ACADEMIC CORE - A large number of significant buildings are sited in the Academic Core. Most of these house academically related functions. The Mall splits the Academic Core into east and west. The buildings, east of the Mall, tend to house the hard sciences. Evans, Spencer Lab, McKinly, DuPont, Colburn, Brown Lab, Drake and Wolf Hall house Electrical Engineering, Life and Health Sciences, Civil Engineering, Chemical Engineering, Chemistry and Psychology. On the Mall's west side, Smith, Kirkbridge, Ewing, Parnell and the DuPont School of Music accommodate the Humanities, Social Sciences and Business School. While there are exceptions (e.g., Sharp Lab), the pattern remains evident.

NEWARK CENTRAL CAMPUS BUILDING NAMES AND AGE

Other significant buildings include Morris Library, Memorial Hall, Old College, Willard Hall and McDowell Hall. The classicizing elements of the older buildings gives the University a common language.

Building construction in the Academic Core spans the entire campus history. The oldest, Old College (1834) and some of the newest, Spencer Lab (1983) and the Delaware Geological Survey (1988) are located within the Academic Core. Over the years, buildings have also been acquired (Newark Hall 1983).

A significant building program started in the late 1960s ran through the 1970s. These buildings include Colburn Lab (1968) and Willard Hall (1967). Smith, Ewing, Kirkbridge and Parnell were added in the early seventies. At the same time, the Amy DuPont School of Music, McKinly Lab and McDowell were also constructed.

RESIDENTIAL CORE - The oldest buildings of the Residential Core -- Warner Hall (1917), New Castle Hall (1925), Sussex Hall (1928), and Hartshorn Gym (1930) were among the first on the Mall. A building campaign in the 1950s added Cannon Hall (1956), Smyth Hall (1952), Kent Hall and dining facility (1957), and Squire Hall (1957). Two dormitories, Thompson Hall and Lane Hall were also built in the 1950s. Their location across Academy from the Mall places them in the Residential Quad near Perkins Student Center (1957). Harrington (1958), Gilbert (1960) and Russell (1963), complete the residential quad.

Nearly 40% of the total beds on campus are in the Residential Core. Several small houses on Wyoming and Ashley Roads are leased to University staff. Recently, several of these have been razed for the construction of two fraternities behind Gilbert Hall.

Gilbert, Russell, and Harrington Halls each have five low-rise dorms grouped around a dining hall (Russell and Harrington) and a commons area. Each residence hall is attached to the commons facility.

The three dormitory complexes have an approximate total of 261,000 square feet. In comparison, the Mall dorms and food service contain approximately 172,000 square feet. All buildings are documented in Appendix B.

Five converted houses on Academy serve as offices. Each building has roughly 1,300 square feet. Several other buildings, 5 Courtney Street, AFROTC, Rextrew House also serve as departmental or administrative offices.

WEST CAMPUS - Rodney and Dickinson dormitory complexes share a similar organizing pattern. Each complex pairs two housing units with a commons area. The six "L"-shape dorms of Rodney form a small open courtyard. The dining hall completes the court. Dickinson shares Rodney's dining facilities. The Dickinson complex, however, does not form its own court. Both complexes were built in the early 1960s -- Dickinson, 1960; Rodney, 1962. Rodney has 134,140 square feet and Dickinson 90,000.

The other residential units are designated as special interest housing. Four separate low-rise buildings form "College Town". They account for a total of 30,000 square feet. German, French, Spanish, Music and Belmont Houses face West Main Street. These former single family residences have a total of 16,000 square feet. Two small residences are rented to faculty/staff and a fraternity.

EAST CAMPUS - The oldest building, General Services, was constructed in 1948. Solar House, I.E.C. (1982) and the Computer Center (1977) are more recent campus additions. The Day Care Center was completed this past year.

NORTH CAMPUS - Built in 1972, the Christiana/Pencader complex remains in good condition. Dormitories, food service and a Conference Center form the primary building uses. The Pencader complex has three groupings of four dormitories and a lounge around a small quadrangle. The three groupings begin to encircle the dining hall. A plaza intermediates the area between housing and food service. In contrast to the low-rise Pencader complex, the two Christiana Towers rise 17 floors above a shared dining hall.

SOUTH CAMPUS - Sixty buildings are located on the farm. these include 48 sheds and barns, four residences, six academic buildings, and one administration office. The major academic buildings, Townsend Hall (1950) and Worrilow Hall (1980) contain a total of 87,132 assignable square feet.

NORTH CAMPUS BUILDING NAMES AND CONSTRUCTION DATE

SOUTH CAMPUS BUILDING NAMES AND CONSTRUCTION DATE

The major athletic buildings are Delaware Field House (1971), the Ice Arena (1971) and the new Ice Skating Science Development Center and Human Performance Lab (1988). Assignable square feet in these three buildings is 80,585, 29,705 and _____, respectively.

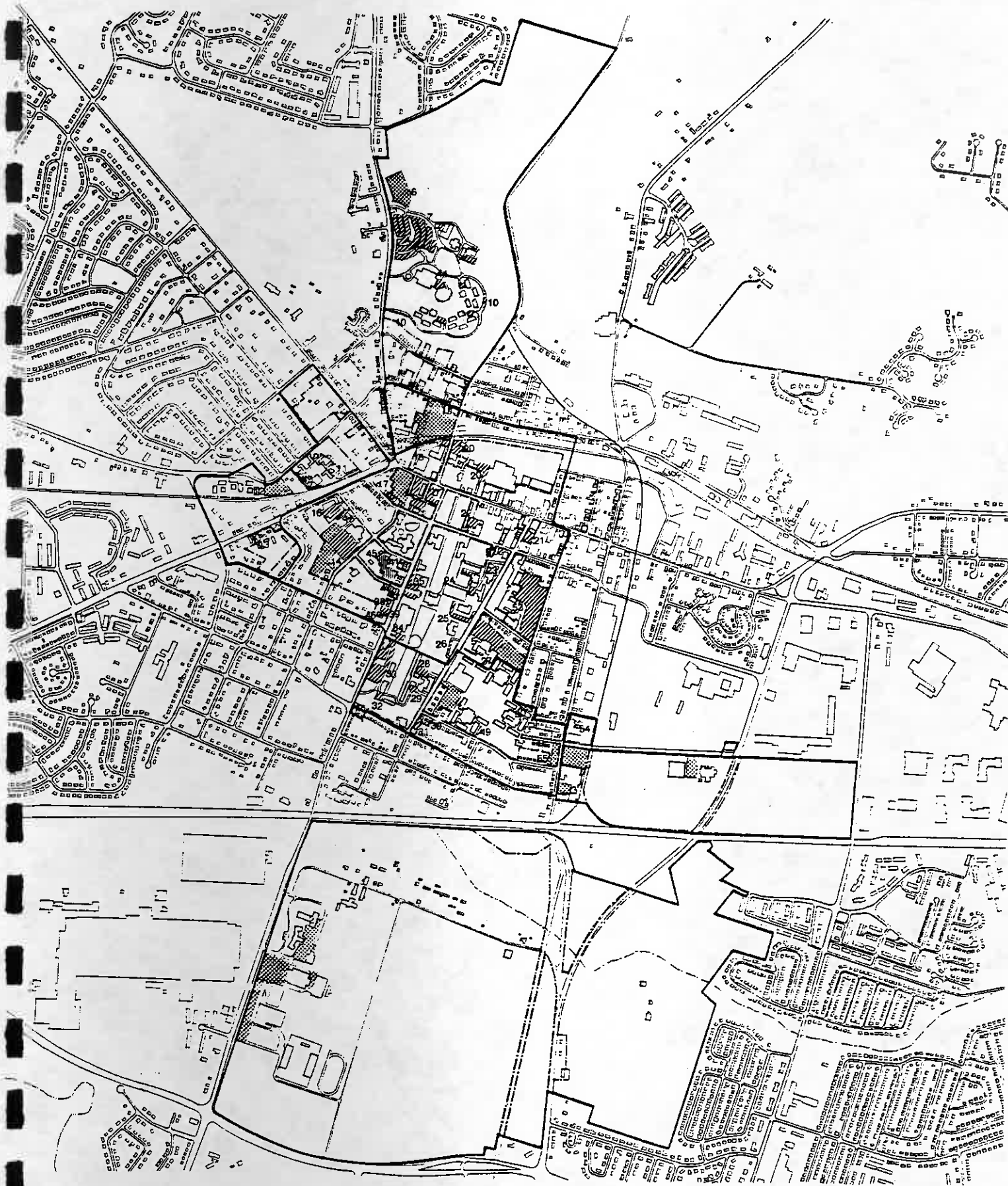
PARKING

ACADEMIC CORE - Over half (52%) of all available campus parking occupies the Academic Core. This consists of approximately 3,473 spaces. While most lots require gold permits, the larger lots allow blue permit parking. 1,178 spaces are available for blue permits, 1,822 gold. The North College Avenue lot has spaces for 183 cars with red permits. Of the 26 separate parking lots in the Academic Core, 10 are located on the Mall.

RESIDENTIAL CORE - Scattered through the Residential Core are 12 parking lots. They contain 649 spaces (10% of the total campus). All but two lots are reserved for gold permits, yet blue spaces (262) outnumber gold spaces (118). The largest lot (187 spaces) serves the Student Center.

WEST CAMPUS - West Campus' six parking lots contain 248 spaces, or four percent of the University total. The Rodney (Lot 11), Dickinson (Lot 12), and College Towne (Lot 13) Lots provide 213 of the 248 spaces. These lots are mostly designated for blue permits.

EAST CAMPUS - Three parking lots hold 291 space, four percent of total campus parking. Each lot accepts blue permits. The General Services Lot (Lot 3) has 194 available spaces.



NEWARK CAMPUS - EXISTING PARKING

NORTH CAMPUS - North Campus parking lots comprise 16% of the total available spaces (1,069 spaces). All of these are coded red except 341 spaces for blue permits.

SOUTH CAMPUS - Construction of the new ice arena displaced 111 parking spaces. Two lots currently contain 906 spaces. The two lots allow blue and red permit parking. Lot 1 (Field House/Red Permit) accommodates 697 automobiles. Lot 2 (Townsend/Blue Permit) allocates spaces for 209 cars. During major athletic events, the University allows parking on the lawn. During Saturday football games, the Chrysler plant sometimes opens their lots. South Campus parking accounts for nearly 14% of University spaces.

EXISTING INFRASTRUCTURE

ACCESS AND CIRCULATION

ACADEMIC CORE - The major university transportation arteries pass through the Academic Core. The busiest streets -- Main Street, South College, Elkton, Academy and New London Road -- bring both University and Newark traffic in and out of the area. These Newark streets serve the Academic Core as interior circulation routes. Several circulation roads service the Engineering buildings at the northeast corner of the Mall.

East Main Street runs one direction toward the west. East Delaware moves in the opposite direction. The north-south streets (New London Road, North and South College, and Academy) move traffic in both directions.

RESIDENTIAL CORE - Academy, Park Place and South College Avenues help define the edges of the Mall. Most traffic that passes through the Residential Core is not destined

for the Core itself. Students walking across Academy must contend with a busy two-way street. Residential streets, Courtney, Haines, Wyoming, and Chambers, act as a buffer or visual division between University grounds and residential neighborhoods. It is only along Wyoming, where University-owned houses intermingle with non-University property, does the division between the campus and its neighbors seem ambiguous. The University uses Newark roads rather than creating its own for general circulation.

WEST CAMPUS - Hillside Avenue is the primary means in which traffic circulates through West Campus. Only Dickinson complex possesses an interior road system separate from Newark. College Towne fronts Elkton Road and the other Special Interest housing faces West Main Street. Elkton Road and West Main Street are busy traffic arteries that move four lanes in two directions.

EAST CAMPUS - Wyoming Road acts as the main artery bringing traffic from Library Road (Route 72) and South Chapel Street. Library Road, which cuts the larger tract in two, and Morrows Road carry the only automobile traffic past the undeveloped eastern portion. Library, South Chapel and Wyoming are two-lane roads with two-way traffic.

NORTH CAMPUS - Automobiles enter the Pencader/Christiana complex along New London Road. A one-way road forms a loop around Clayton Hall and Pencader. Another loop beginning at New London Road forms the parking lots' perimeter. Smaller loops access the Christiana Towers to the larger parking and Pencader traffic loops. Stu-

dents walk to Main Campus along a walkway that runs diagonally from the Pencader complex to the corner of Ray Street and North College Avenue.

SOUTH CAMPUS - South College Avenue serves as the primary access route into the South Campus. Secondary entrances are found on Chestnut Hill Road and Library Avenue. Many roads cut across the property enabling trucks and farm equipment to service the agricultural fields. Some of these roads remain unpaved. One important service road bisects the western property along a north/south axis. The road begins at Chestnut Hill Road. It separates the Ecology Woodlot from the athletic fields and continues northward to "The Farm". Another service road begins at South College Avenue, crosses the Conrail tracks and connects the eastern tract with the western. This forms the southern edge of an area for poultry research and teaching.

UTILITIES

ACADEMIC CORE - Utility mains generally run beneath or parallel to all of the streets. Storm sewers and electrical lines extend along the length of the Mall.

RESIDENTIAL CORE - Utilities run parallel or beneath the major streets; Academy, South College, East Park Place, and secondary streets, Courtney and Haines. Steam and condensate supply is an independent University system. Utilities form a loop around the Russell/Gilbert/Harrington complex. The South Mall is supplied from mains along Academy and South College. Utility mains also run beneath the Mall.

WEST CAMPUS - Elkton Road, Hillside Road and West Main Street act as the primary utility corridors.

EAST CAMPUS - Utilities extend along the major streets, Wyoming Road and South Chapel Street.

NORTH CAMPUS - Utilities generally follow the established traffic loops. They connect with city mains that run along New London Road. Sanitary and storm sewer, boiler water, gas, water, telephone, and electric service are provided.

SOUTH CAMPUS - South Campus accesses utility mains from South College Avenue. These service the athletic facilities and the College of Agriculture's classroom buildings.

EXTERNAL CONDITIONS

NEIGHBORING DEVELOPMENT AND ZONING

ACADEMIC CORE - A diversity of land uses surrounds the Academic Core. The Main Street shopping area (zoned as a central business district) stretches from Harter and Sharp Halls to Kirkwood Highway. This area also includes institutions such as churches and the offices of the Newark Board of Education. Between the railroad tracks and Cleveland Avenue is a mostly residential area zoned for low-rise garden apartments. The eastern district near Newark Hall is zoned similarly. Several churches and nearly a 5-acre vacant tract of land also borders Newark Hall. Between the East Main Street central business district and the railroad tracks are single family residences and a cemetery.

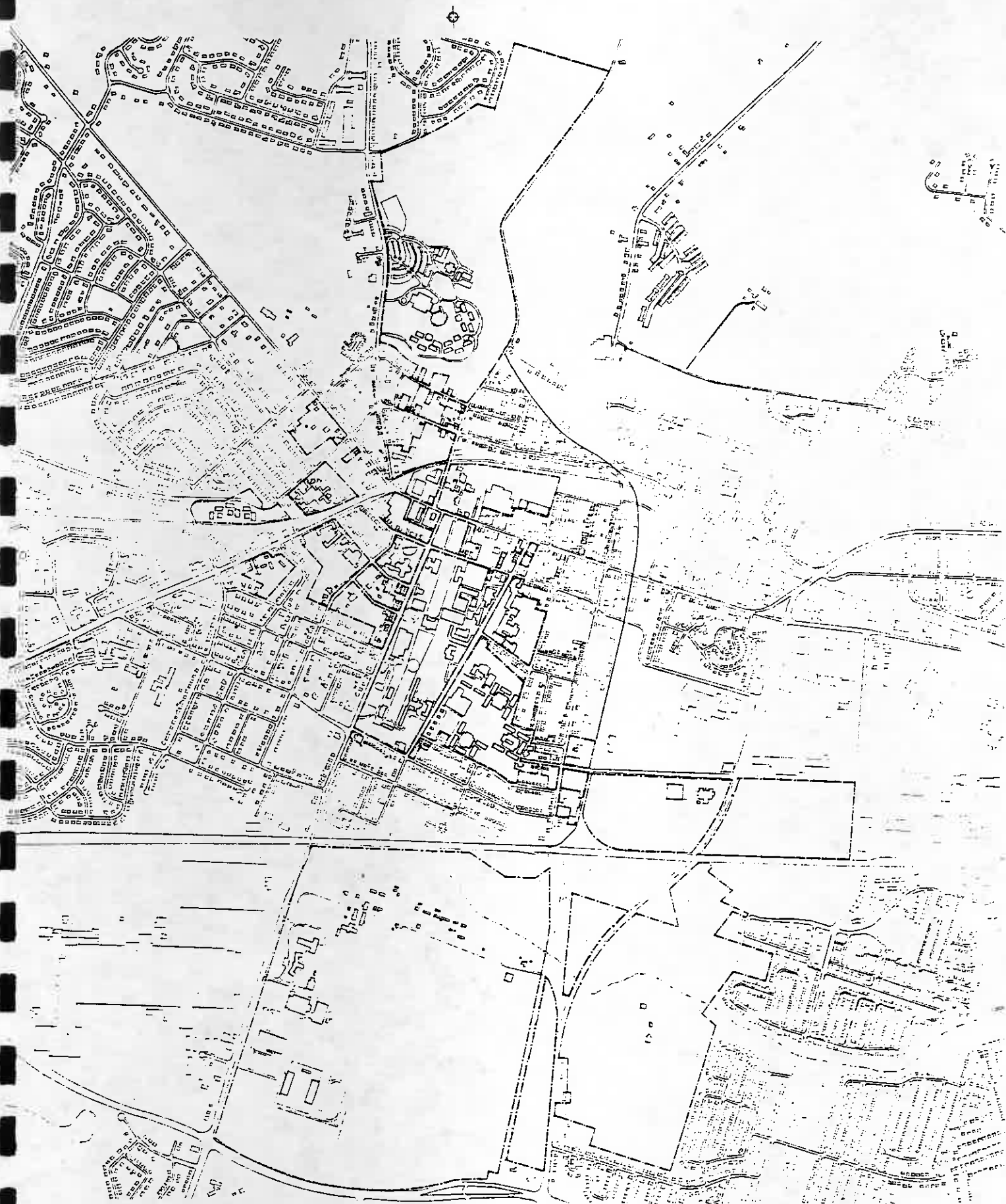
NEWARK CENTRAL CAMPUS EXTERNAL CONDITIONS MAP

Between Elkton Road and South College Avenue, non-university property occupies a square block west of Ewing and Parnell Halls. Single and multifamily residences along with several retail establishments coexist. The block is zoned for neighborhood shopping, garden apartments and one family detached residences with 9,000 square feet minimum lot size.

A small church and cemetery lie just north of this block across Delaware Avenue. In addition, this block, owned mostly by the University, has several older structures that house apartments and businesses. Adjacent to Willard Hall at the intersection of Main, Elkton and New London Roads, a small commercial building exists.

RESIDENTIAL CORE - Development surrounding the Residential Core is primarily residential. This area has been zoned for semi-detached residences with 6,250 square feet minimum lot size. Many houses along Benny Street have been rented to groups of students. Much of the Residential Core remains contiguous with University property particularly north of the South Mall and the quadrangle. Property at the northwest corner of Wyoming and South Chapel is zoned for general business. Presently, two retail commercial businesses occupy parcels along South Chapel.

WEST CAMPUS - Primarily, residential neighborhoods surround West Campus. The single family detached houses are zoned for a minimum lot size of 9,000 square feet. A long sliver of land between the railroad tracks and Elkton Road contains mostly rental and office commercial. This area visually tends to isolate West Campus. The commercial strip along Elkton Road appears oriented



NEWARK CAMPOS - NORTH & SOUTH
EXTERNAL CONDITIONS

to the car. In comparison, it has little of the pedestrian traffic that East Main Street has. The commercial strip borders two sides of College Town. Low-rise apartment buildings and single family residences border it on the remaining sides. This commercial area (zoned for neighborhood shopping and general business) remains contained by University development and the railroad tracks.

EAST CAMPUS - Office/manufacturing commercial, retail commercial, tillable fields and single family residences neighbor the East Campus. The tillable fields to the south are zoned for townhouses. Adjacent to these fields on the west side of Library Avenue, it is zoned for general manufacturing. Newark High School and a strip mall border the northern edge. Closest to campus, a single family residential area neighbors the Computer Center and General Services Building.

NORTH CAMPUS - The heavily-wooded areas surrounding Pencader and Christiana create a visual buffer from neighboring development. The five acres along Ray and Cleveland Streets are part of a mixed use neighborhood. This area includes single and small multifamily residences, a church and a few neighborhood retail commercial establishments. Single family residential neighborhoods and a school border University property along its west and northwest sides. The natural area between North College Avenue (Tweeds Mill Road) and White Clay Creek remains preserved. The Curtis Paper Company operates to the east of White Clay Creek. This area is zoned as an open floodway district and for manufacturing.

SOUTH CAMPUS - Land use surrounding the South Campus is varied. To the west, a Chrysler Assembly Plant (zoned general manufacturing) occupies nearly the entire frontage on South College Avenue. Directly across from the stadium, an area zoned for limited business, general business and garden apartments sits wedged amidst the Chrysler plant. Six low-rise apartment buildings occupy this area along with several businesses.

A residential development exists south of Chestnut Hill Road. A church occupies the southeast corner of Chestnut Hill Road and South College Road. Sited between Library Road and the tracks south of Chestnut Hill Road is Castle Mall. South Campus remains primarily residential. On the north boundary, a wedge of land extends from Library Road along the Amtrak rails to University property. This is zoned as general manufacturing.

CAMPUS ACCESS

ACADEMIC CORE - Several major state highways converge into the Academic Core. The area along East and West Main Street acts as a hub for highways that radiate outward. Route 896 (New London Road-South College Avenue) comes from Pennsylvania, travels south through the campus and joins I-95. Route 896 joins U.S. Route 13 to connect Newark with southern Delaware. Route 273 (Main Street) reaches westward to Maryland and continues southeasterly to I-95 or joins Route 2 at Capitol Trail heading toward Wilmington. Route 72 (North Chapel Street) carries traffic into northern New Castle County.

RESIDENTIAL CORE - The Residential Core's centrality makes this site convenient for the University community. South College, Academy, South Chapel and East Park Place create easy access. South College Avenue (Route 896)

joins I-95 and New London Road. Other state highways are easily accessible. Other than rush hours, ingress and egress is simple. Residential streets, Wyoming, Benny, Chambers and Haines end at University property.

WEST CAMPUS - Site access is from West Main Street, Elkton Road and Hillside Road. West Main (Route 273) and Elkton (Routes 279/2) are state routes that connect West Campus to the core campus and to other destinations in New Castle County. Pedestrians use the same streets and an underpass (to avoid the tracks) which joins Amstel Avenue.

EAST CAMPUS - The University proposes to develop the 73-acre site into a research park. Wyoming Road, Library Avenue and Morrows Road provide access. It is possible to connect Library and Morrows Roads by extending Wyoming Road. This would separate the proposed University Research Park from the adjacent shopping center.

NORTH CAMPUS - The major transportation artery, New London Road, joins West Main Street and Elkton Road. North College Avenue is significant, but does not have direct access into the dormitory complex. Rose and Ray are residential streets. Cleveland Avenue is more heavily utilized as it connects North College Avenue and New London Road.

SOUTH CAMPUS - Site access resembles the rest of the campus. South Campus lies closest to Route 4 (Chestnut Hill Road) and lies less than a mile from the junction of I-95 and Route 96 (South College Road). Route 896 provides the most convenient access from the campus and northern New Castle County.

NEWARK CAMPUS ACCESS MAP

PROJECTED
IMPROVEMENTS

It has been stated that the Newark road system is oddly skewed to provide service in the direction most traffic does not wish to go. The majority of traffic is headed east and west through the city. Principal state roads and highways (Delaware 72, 896 and 2 of Elkton Road), however, run north and south. In addition, east and west traffic is further restricted by the one-way pair of Delaware and Main Streets and the limited width of Delaware Avenue between Chapel Street and new London Road (the City of Newark Comprehensive Plan II, page 28).

Many factors contribute to the tremendous demand placed upon the Newark road system. The University is both a contributor and a victim of the traffic situation. As one of the largest employers (along with the neighboring Chrysler plant), it funnels considerable amounts of traffic in and out of its property. Students walking from the North and West Campuses cross principal arterial roads (Main Street, Delaware, Cleveland and Elkton). When not using the traffic signals, students help slow traffic flow.

Over the years, several recommendations for improvements have been made. The most current study by the consulting firm of Vanasse Hangen Brustlin, Inc., for the Delaware Department of Transportation recommends several short-term improvement that directly affect the University campus and its immediate surroundings. These include lengthening turn lanes, increasing turning radii, modification and upgrading traffic signals, installing walk/don't walk signals, and initiating a coordinated plan for signage.

Long-term priorities aim to direct traffic around the University and the Central Business district. In part, these are extending the Christiana Parkway from Elkton to Barksdale Roads, extending Wyoming from Marrows Road to Library Avenue, and improving signage (Comprehensive Development Plan II, page 31).

INFRASTRUCTURE

The City of Newark's water supply is exclusively based on ground water sources. A study by the New Castle County Water Resources Agency (RA) recommend that water utilization companies continue selective ground water development and conclude agreements for the possible interstate transfer of water from Chester County, Pennsylvania.

The City's Water and Waste Water Departments operates the sanitary sewage system. Sewage is transported from Newark to a treatment facility in Wilmington. The City hopes to evaluate the possibility of building its own sewage treatment plant.

Newark plans to meet future electrical demands by upgrading the South Chapel Street substation. In addition, the City wishes to acquire property for new substation sites.

DEVELOPMENT OPPORTUNITIES AND CAPACITY

OVERVIEW

There are very few potential development sites on the Newark campus which are not actively being used or do not have significant development limitations. The shortage of available sites is particularly acute in the Core areas. Of the 994 acres owned at the Newark campus, approximately 129 acres could be classified as

being undeveloped and readily available for new development. This acreage is predominantly located in the North Campus, East Campus, and West Campus areas. The available acreage is summarized in the following table.

TABLE 3.2
NEWARK CAMPUS
UNDEVELOPED ACRES AVAILABLE FOR DEVELOPMENT

Area	Total Acres	Estimated Undeveloped Acres	Estimated Undeveloped Acres with Development Restrictions	Estimated Readily Available Acres
Core Academic	131	5	-	5
Core Residential	42	1	-	1
Subtotal	173	6	-	6
North	165	123	98	25
East	81	67	12	55
South	494	-	-	-
West	81	9	-	9
Total	994	205	110	95

In addition, roughly 42 acres of land, primarily in the Core Academic campus area, could be redeveloped for more intensive use. The potential acreage subject to redevelopment is summarized on Table 3.3. Although there appears to be some room for additional development on the South Campus on land presently occupied by activities of the College of Agricultural Sciences, no specific quantity of land available for redevelopment has been identified. An evaluation of the economic implications of certain crop production and grazing areas needs to be undertaken before a more definitive determination of available land can be made.

TABLE 3.3
NEWARK CAMPUS
ACRES AVAILABLE FOR POTENTIAL REDEVELOPMENT

Area	Total Acres	Estimated Developed Acres	Estimated Acres Available for Redevelopment
Academic Core	131	126	42
Residential Core	42	41	9
West	81	72	2
Total	254	239	53*

* Excludes up to 282 acres on South campus which could possibly be available for development based on possible alternative grazing and crop production practices.

In summary, the "Core" campus areas have very limited sites readily available for development. However, they have a number of potential redevelopment sites. The North and East areas have vacant tracts of land available for development, and the West area has a primarily vacant tract of land, on which the existing development could readily be redeveloped to provide a comprehensive development opportunity.

The basis for identifying the development opportunities in the respective sub-areas and the potential development capacity of each of the sub-areas is discussed in greater detail below.

ACADEMIC CORE

The Core Academic area is highly developed. Over 96% of the area is actively being utilized. This includes the area commonly referred to as the Mall.

DEVELOPMENT SITES - Three sites have been identified as being presently vacant and available for development -- two along the mall and one south of the Conover Apartments along Elkton Road.





- (1) Site CA1 is located south of Sharp Lab and north of Mitchell along South College Avenue. The site contains approximately 0.8 acre. Assuming three-story developments similar to the other buildings along the mall, it is estimated that between 25,000 and 40,000 gross square feet of academic/office space could be developed on the site, depending on the building configuration.
- (2) Site CA2, located west of Alison Hall contains up to 2.6 acres. Depending on the configuration of the building construction at this location, up to 200,000 gross square feet of academic/office space could be developed. However, care needs to be taken in the design of the development for this site, because of the proximity to Alison Hall and the Mall.
- (3) Site CA3, along Elkton Road contains roughly 1.3 acres. Because the site is at the edge of the Core Academic area, it could be utilized for a variety of purposes including residential development and parking. The site could also be incorporated as part of a larger development project which could include property to the north and east.

STRATEGIC LAND USE PLAN

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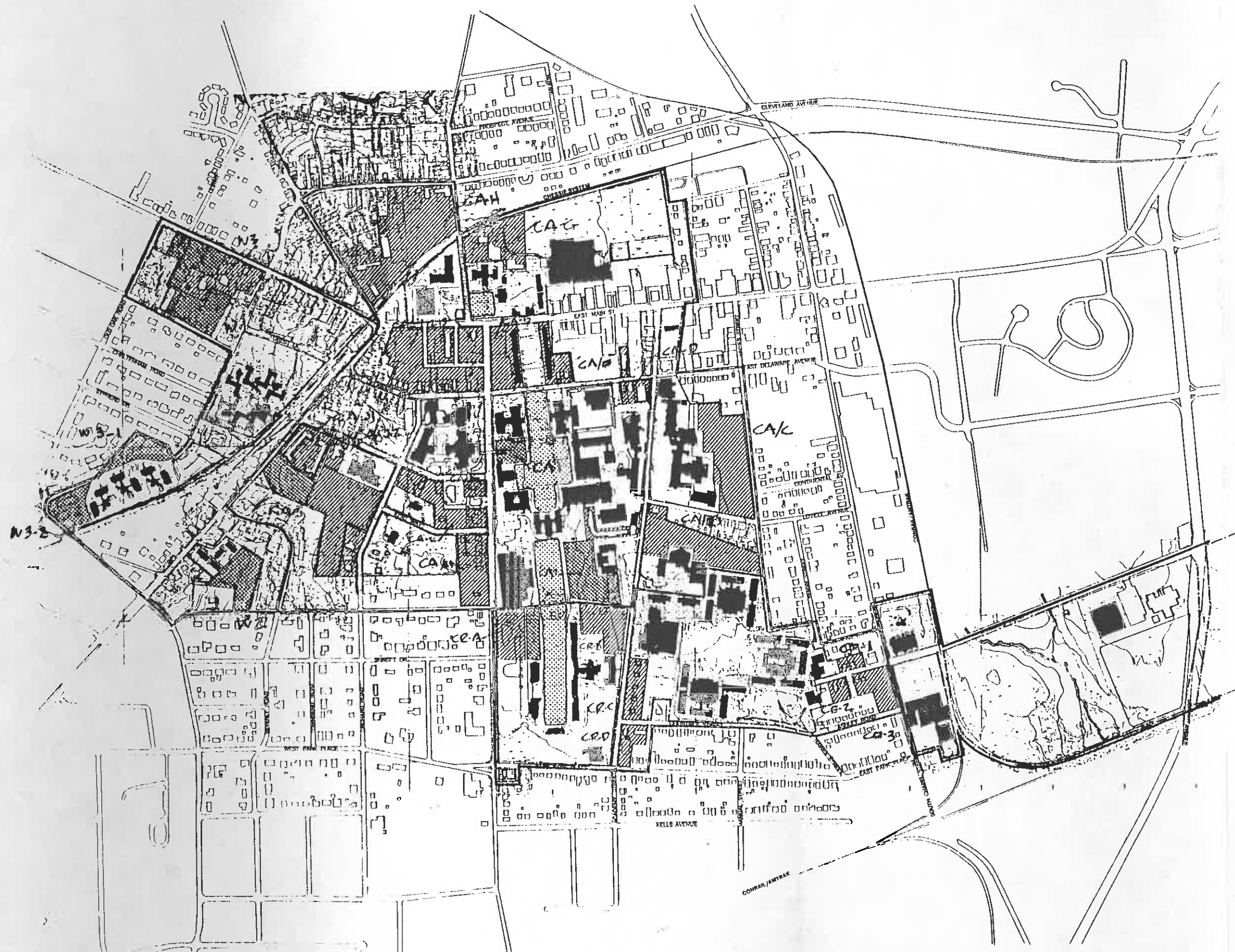
NEWARK CAMPUS - CENTRAL DEVELOPMENT OPPORTUNITIES

LEGEND

-  EXISTING BUILDING TO REMAIN
-  DEVELOPMENT OPPORTUNITY
-  REDEVELOPMENT OPPORTUNITY
-  EXISTING MAUL

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REDEVELOPMENT SITES - There are a number of sites within the Core Academic area which could be more intensively developed. Most of these sites are presently used for parking or contain residential structures which have been converted for University-related functions. It is important to note that the existing development on these sites will need to be replaced as part of the new development for the site or relocated.

A total of 18 sites have been identified which contain approximately 42 acres of land. They vary in size from 0.8 acre to 7.3 acres. Table 3.4 lists the potential redevelopment sites and identifies the existing site uses.

TABLE 3.4
NEWARK CAMPUS
POTENTIAL REDEVELOPMENT SITES - CORE ACADEMIC AREA

Designation	Approx. Acres	Existing Use
CA-A	.8	Maintenance Center (22,696 SF)
CA-B	4.0	Parking (430 spaces)/Building (SF)
CA-C	4.3	Parking (652 spaces)
CA-D	.8	East Hall (7,023 SF)/Office (1,833 SF)
CA-E	1.3	Harter Hall (73 Beds/11,096 SF)/Sharp Hall (143 Beds/21,686 SF)/Computer-Based Instruction (2,034 SF)/Center-Values/Linguistics (1,970 SF)/Parking (7 University + Commercial)
CA-F	2.2	Sypherd Hall (158 Beds/19,567 SF)/Brown Hall (87 Beds/19,701 SF)
CA-G	2.8	Taylor Hall (12,498 SF)/Printing Studio (2,634 SF)/Mechanical Hall (7,619 SF)
CA-H	7.3	Parking (513 spaces)/Hollingsworth Bldg. (7,752 SF)/Ceramic Bldg. (4,658 SF)/Hollingsworth Shop (1,218 SF)/Housing Warehouse (11,825 SF)/Fine Bldg. - Maintenance (5,312 SF)/Office Maintenance (360 SF)/Fine Bldg. Warehouse (3,373 SF)
CA-I1	1.0	Rees Hall (2,959 SF)/Parking (portion of 580 spaces)
CA-I2	1.0	Dougherty Hall (9,161 SF)/Parking (portion of 580 spaces)
CA-I3	4.0	
CA-J1	2.1	Conover Apartments (84 Beds)
CA-J2	1.9	Public Safety (5,528 SF)
CA-J3	2.4	Parking (573 spaces)
CA-J4	1.0	Buildings
CA-K	0.3	Photographic/Information Services (2,757 SF)/Information Services (1,631 SF)
CA-L	2.6	English (1,643 SF)/Dean's House (SF)/Parking (115 spaces)/Provost-Academic Support (2,208 SF)/Philosophy (2,354 SF)/English Institute/Sociology (1,718 SF)
CA-M	2.3	Philosophy (1,383 SF)/Honors Program (2,469 SF)/Center for Black Culture (2,528 SF)/C.M.S. Office of Dean (1,385 SF)/Individual & Family Studies/Textile Design (1,523 SF)/Parking (104 spaces)

CORE RESIDENTIAL

The Core Residential Campus is also highly developed. Of the 42 acres in the area, only one acre is not being actively used.

DEVELOPMENT SITES - The only vacant site is located south of Morris Library and north of Robinson Hall. The approximate one acre tract of land, which is on the west side of the mall, is an attractive development site that has a variety of potential uses. It could be developed for additional residential, library expansion, or additional academic/office space. It is possible to develop up to 50,000 gross square feet of space on this site and still be responsive to the aesthetic concerns for building along the mall. As discussed in greater detail below, it is possible to expand this development site, by redeveloping the parking and delivery area to the west.

It is also possible to expand the site to the east across the mall near the northern end of Cannon Hall. This would subdivide the portion of the mall to the south of Memorial Hall. This would be sympathetic with the campus master plan developed around 1917.

REDEVELOPMENT SITE - Four sites and one grouping of sites have been identified as logical candidates for redevelopment for more intensive development.

1. Site CR-A, which contains roughly 1.4 acres, is located along the west side of South College Avenue to the south of Morris Library. The area includes the library service area and approximately half of the 213 parking spaces in Lot 33 (Robinson) and Lot 34 (Library). This area can be utilized for library

expansion, additional academic space, or decked parking to support additional development in this area. The available parking could more than double by decking the parking. It is also possible to extend decked parking to the south in front of Robinson Hall and Warner Hall. This should be the only more intensive use considered for this potential expansion.

2. Site CR-B - is located north of Smyth Hall and east of Cannon Hall. The site, which contains roughly 2.3 acres, encompasses portions of the existing tennis courts, the basketball courts, open space and a small portion of Lot 28 (Kent) which has 40 parking spaces. The site could be redeveloped for additional residential or academic space. The site could accommodate up to 100,000 square feet of development for academic space.
3. Site CR-C is located along Academy Street to the south of Perkins Student Center. The site which contains approximately 1.6 acres, includes a total of 7,014 net usable square feet of development. This includes: Food Service, 401 Academy, 1,339 SF; Housing Division, 405 Academy, 1,339 SF; Neuroscience, 409 Academy, 1,339 SF; Arts & Science, 413 Academy, 1,657 SF; Safety Division, 417 Academy, 1,340 SF.

The site could logically be developed for additional residential units or provide expansion for the Perkins Student Center. The site could be expanded to the east into Lot 4 (189 spaces).

However, care would need to be taken to provide appropriate space between any new development and the Harrington Residential complex to the east.

4. Site CR-D is located between Courtney Street and East Park Place along the east side of Academy Street. The site is approximately 0.7 acre and contains the AFROTC building (2,854 SF), service building (6,338 SF) and Lot 31 (14 spaces). The site could be developed for additional residential units or support space.
5. Sites CR-E1, CR-E2, and CR-E3 are located along Wyoming Road, between the Gilbert Residential Complex and South Chapel Street. Site CR-E1 is approximately 0.3 acre and contains offices for the motor pool (1,480 SF), special housing (1,488 SF) and a vacant lot. Site CR-E2 is approximately 0.3 acre and contains the motor pool (900 SF). Site CR-E3 is approximately 2.3 acres and contains additional motor pool offices (900 SF), special interest housing (1,200 SF) and Lot 55 (68 parking spaces).

The sites could be redeveloped for more intensive residential development, potentially associated with fraternities and sororities.

WEST CAMPUS

The West Campus area contains several vacant parcels of land. However, because of the configuration of land and/or drainage problems, only the vacant land contained within the block bounded by West Main Street, Hillside Road, Dallam Road, and Old Oak Road can be readily developed. The University-owned land in this block

contains roughly 6.1 acres. Approximately two-thirds of the site is vacant. The remainder of the site contains the Spanish House, the Belmont Dorm/Special Interest House, The French House, and the German House. The best utilization for this property would be for University related residential development, probably associated with graduate or married student housing. Assuming a density of between 16 to 20 units per acre, the site could support between 100 and 120 units.

The other University owned vacant sites in the area include Site W-2 (2.1 acres) to the east of College Town, site W-3.1 (1.3 acres) to the north of Hillside Road near the Dickinson Residential Complex, and site W-3.2 (1.3 acres) to the west of the Dickinson Residential Complex near the intersection of Hillside Road and Barksdale Road.

EAST CAMPUS

There are two large undeveloped parcels of land in the East Campus area -- one to the east and one to the west of Library Avenue. Site W-1 to the east of Library Road contains approximately 42 acres. It is scheduled to be developed as a research park.



Site W-2 to the west of Library Road contains roughly 25 undeveloped acres. However, over half of the undeveloped land is wooded with a stream running through the middle of the site. The eastern portion of the site could be reserved for additional research development, other university functions which do not need to be near the Core Campus, or formed as replacement for non-

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NEWARK CAMPUS - NORTH DEVELOPMENT OPPORTUNITIES

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agricultural uses on the South Campus. The western portion of the site could serve as a consolidated maintenance center for the campus.

NORTH CAMPUS

Most of the North Campus area has been recently developed or would be difficult to develop because of existing vegetation and/or steep slopes. There are, however, three sites on the North Campus which could be considered for future development.

- (1) Site N-1, which is located to the south of Clayton Hall, contains roughly 3 acres. This site could provide expansion potential for conference-related activities or overnight accommodations.
- (2) Site N-2 is actually a collection of University-owned property located in the block bounded by Ray Street, North College Avenue, Cleveland Avenue, and Rose, and located along the north side of Ray Street. The property contains a total of roughly 4.6 acres, including approximately 0.3 acre of development land along the north side of Ray Street. This site location would be logical for the development of recreation facilities and/or additional university-related residential development.
- (3) Site N-3 is located in the northern portion of the area. The site, which contains roughly 20 acres, is actually comprised of a series of radiating land fingers along the ridge lines near the existing residential development to the northwest.

The site is heavily wooded. If it is developed, the density should be low. The site could possibly be utilized for faculty/administration housing or a specialized conference facility.

SOUTH CAMPUS

All of the land in the South Campus is actively being used. However, 90 acres is currently utilized for grazing and 192 acres are utilized for crop production. Depending on the economic justification for continuing these practices, up to 282 acres could become available for more intensive use.

PROJECTED NEEDS

OVERVIEW OF RESPONSE FROM QUESTIONNAIRES AND INTERVIEWS

This section summarizes the findings of the "Land Use Planning" questionnaire, which was distributed to a broad spectrum of the University community, and the follow-up interviews. The questionnaire and interviews sought to elicit opinions regarding the adequacy of the existing University land use patterns and issues which should be considered in developing a future strategic land use plan.

The questionnaire respondents were asked to give their opinions regarding nine broad land uses: Academic, Food Service, General Institutional and Administration, Intercollegiate Athletics, Intramural/Recreation, Open Space, Parking, Student Activities, and Student Housing. The respondents were asked to evaluate the adequacy of the amount of space devoted to the respective land uses, the appropriateness of the location of the uses, and the quality of the space associated with the uses

The ranking of the collective responses provides a guide to the prioritization of issues which should be addressed by a land use plan. It is important to note that this was not a scientific sampling of the university community and that the response, although instructive, must be evaluated with other information.

QUALITY OF EXISTING SPACE - The strongest concerns relative to the adequacy of the quantity of available space related to Parking and Academic Space, followed by Student Activities, General Institutional and Administration, and Student Housing. The responses to the complete group of land uses are summarized in Table 1 (Opinions Regarding Amount of Existing Space).

TABLE 3.5
OPINIONS REGARDING AMOUNT OF EXISTING SPACE - NEWARK CAMPUS

	% Responding Inadequate	% Responding Adequate	% With No or Other Opinion
1. Parking	95	0	5
2. Academic	74	5	21
3. Student Activities	58	15	27
4. General Institutional & Administration	48	21	31
5. Student Housing	40	13	47
6. Intramural/Recreation	32	27	40
7. Intercollegiate Athletics	29	34	37
8. Food Service	27	47	26
9. Open Space	11	52	37

LOCATION OF EXISTING SPACE - With the exception of "Parking", there was little concern regarding the location of the Existing Space. Table 3.7 (Opinions Regarding Location of Existing Space) summarizes the responses.

TABLE 3.6
OPINIONS REGARDING LOCATION OF EXISTING SPACE

	% Responding Inadequate	% Responding Adequate	% With No or Other Opinion
1. Parking	52	29	19
2. General Institutional & Administration	26	42	32
3. Student Activities	23	34	43
4. Academic	21	53	26
5. Student Housing	15	39	46
6. Open Space	15	39	46
7. Intramural/Recreation	11	43	46
8. Food Service	7	63	30
9. Intercollegiate Athletics	7	50	43

QUALITY OF EXISTING SPACE - Concern over the quality of space was shown for Parking, Academic Space, and Student Activities space. Table 3.7 (Opinions Regarding Quality of Existing Space) summarizes the questionnaire responses.

TABLE 3.7
OPINIONS REGARDING QUALITY OF EXISTING SPACE

	% Responding Inadequate	% Responding Adequate	% With No or Other Opinion
1. Academic	44	23	34
2. Parking	44	29	27
3. Student Activities	37	18	45
4. General Institutional & Administration	24	34	42
5. Intramural/Recreation	21	29	50
6. Food Service	21	40	39
7. Intercollegiate Athletics	18	31	52
8. Student Housing	18	21	61
9. Open Space	11	39	50

OPINIONS REGARDING PARKING

Parking was the most frequently identified problem by the questionnaire respondents. Not one of the respondents felt the existing supply of parking was adequate. The location of parking was also identified as the number one location problem. In addition, the quality of available parking was identified as a major problem. It was felt that parking had been treated as an interim land use until a building was constructed. It was proposed that all construction should incorporate planning for parking and servicing.

TABLE 3.8
OPINIONS REGARDING PARKING ISSUES

	AMOUNT OF SPACE(%)	LOCATION OF SPACE(%)	QUALITY OF SPACE(%)
Adequate	0 (0.0)	18 (29.0)	18 (29.0)
Inadequate	59 (95.2)	32 (51.6)	27 (43.5)
Not Answered	3 (4.8)	11 (17.7)	17 (27.4)
Other	0 (0.0)	1 (1.6)	0 (0.0)

Lack of parking in the core of the campus, particularly near Hullahen Hall and the Library, was cited as a problem, as were periodic problems on the South Campus when major events occur. Parking for large public gatherings is felt to be completely inadequate.

Potential solutions for the parking problem were mixed. Most respondents felt that some type of garage(s) would be necessary, but were concerned about the aesthetic impact. Subsurface solutions are uncertain because of a high water table. This group felt that the shuttle service and additional remote parking would be inadequate to meet the parking demands.

Others felt that the additional parking should not be introduced into the central portion of the campus because of aesthetic concerns and the impact on existing traffic congestion. It was also felt that no student parking should be allowed in the core campus.

If parking garages were constructed, several respondents felt that individuals who parked their cars in the garage should pay the cost to amortize the construction.

This would be a significant increase over existing parking rates, which are widely recognized as being extremely inexpensive.

Greater emphasis should be placed on improved transit to discourage use of automobiles.

OPINIONS REGARDING ACADEMIC FACILITIES

The questionnaire indicated that the respondents felt the quality and quantity of academic space were primary concerns. Less than 23% of the respondents felt that the quality of the existing academic space was adequate and less than 5% felt the amount of space was adequate.

Over half (53%) of the respondents felt that the location of the space was adequate. However, there were numerous comments in the interviews and on the questionnaire that academic space should be consolidated to a greater extent.

TABLE 3.9
OPINION REGARDING ACADEMIC FACILITIES

	AMOUNT OF SPACE	LOCATION OF SPACE	QUALITY OF SPACE
Adequate	3 (4.8)	33 (53.2)	14 (22.6)
Inadequate	46 (74.2)	13 (21.0)	27 (43.5)
Not Answered	10 (16.1)	14 (22.6)	17 (27.4)
Other	3 (4.8)	2 (3.2)	4 (6.5)

As was pointed out in the questionnaires and interviews, the category of academic space covers a broad range of facilities which include classrooms, labs, research space, office space, conference and meeting spaces, assembly spaces, and a variety of special academic-related facilities. All of these facilities appear to be in short supply.

CLASSROOM SPACE - There is a general feeling that the availability of classroom space, particularly during peak periods, is a significant problem. There is no real "lobbyist" group for classroom space. There needs to be emphasis on better teaching facilities. The primary concern is for medium (50±) to large (100±) size classrooms. Only the nursing school seems to have adequate classroom space.

It was felt that improved scheduling could reduce demand on classroom space, but no specific level of improvement was identified.

Some interest was expressed in developing a common classroom facility which could serve multiple colleges as opposed to college-specific classroom space.

OFFICE/RESEARCH/LAB SPACE - The questionnaires and interviews indicated a general shortage of these facilities.

CONFERENCE/MEETING SPACE - It was generally felt that there was a significant shortage in available conference space. A particular need for conference space to accommodate 10 to 15 people was identified. It was also felt that there was a need for space in the 300 to 400 persons range (similar to student center space). It would be desirable that these meeting spaces have food service available for breaks, luncheons, etc.

A need for a centralized source for scheduling conference/ meeting space was raised.

Clayton Hall was discussed as a potential meeting place, but frequently rejected because of cost, scheduling problems, or location.

ASSEMBLY SPACE - A need which was frequently discussed was an assembly space which could accommodate up to 3,000 people. This space would make it possible for the members of a college to meet together, as well as provide a large lecture facility for guest speakers, etc. Flexibility to subdivide the space was identified as a need.

The idea of combining this space with the need for additional performing arts facilities was often discussed. This could be part of a comprehensive plan for improving the performing arts facilities on the campus.

Parking for a large assembly space needs to be carefully considered.

OPINIONS REGARDING STUDENT ACTIVITY FACILITIES

The quantity and quality of space devoted to facilities for student activities were felt to be inadequate by the questionnaire respondents.

TABLE 3.10
OPINIONS REGARDING STUDENT ACTIVITIES FACILITIES

	AMOUNT OF SPACE(%)	LOCATION OF SPACE(%)	QUALITY OF SPACE(%)
Adequate	9 (14.5)	21 (33.9)	11 (17.7)
Inadequate	36 (58.1)	14 (22.6)	23 (37.1)
Not Answered	17 (27.4)	26 (41.9)	28 (45.2)
Other	0 (0.0)	1 (1.6)	0 (0.0)

STUDENT CENTER - The concept of a new Student Center or Student Union was frequently mentioned. It was felt that this facility could expand the services offered and consolidate a number of activities which are scattered throughout the campus. Potential uses include: counseling center, career planning, housing offices, minority and international affairs activity, women's affairs, and a variety of recreational activities. It is desirable to reinforce activities which will keep students on campus.

Two approaches were discussed for accommodating additional space for student activities. The first option was to expand Perkins Center; the second approach was to build a new center at a different, more central location. The student respondents felt that one centralized facility was desirable.

OPINIONS REGARDING
GENERAL INSTITU-
TIONAL AND
ADMINISTRATION
FACILITIES

STUDENT SERVICES - The desirability of moving student services from Hulliher Hall was widely recognized. It was felt that students do not like to go into Hulliher Hall and that the space could be utilized for other university functions. These services need to be centrally located. They could be part of a new student union or possibly located on Main Street near the mall.

General Institutional and Administration - The primary concern with respect to the existing General Institutional and Administration Space is the quantity of space available. However, there are also questions concerning the location of several General Institutional and Administration facilities.

TABLE 3.11
OPINIONS REGARDING GENERAL INSTITUTIONAL AND
ADMINISTRATION FACILITIES

	AMOUNT OF SPACE	LOCATION OF SPACE	QUALITY OF SPACE
Adequate	13 (21.0)	26 (41.9)	21 (33.9)
Inadequate	30 (48.4)	16 (25.8)	15 (24.2)
Not Answered	19 (30.6)	19 (30.6)	24 (38.7)
Other	0 (0.0)	1 (1.6)	2 (3.2)

CENTRAL ADMINISTRATION - The functions which are now in Hulliher Hall need additional space. Hulliher Hall appears to have adequate space if the non-administrative functions were removed.

MEMORIAL HALL - Memorial Hall was identified as a possible location for administrative functions which need to be near Hulliher Hall activities. Contracts and Grants, President, and Vice President were identified as potential occupants.

OPERATIONS AND MAINTENANCE - Steam Plant fixes location of O&M facility, but there is a question if the other activities could be relocated to provide greater room for expansion of the academic core facilities. Garage and car pool operations could possibly be relocated to General Services Building. Other locations are possible.

GENERAL SERVICES - A new building is desired where a number of the functions which are presently housed in the General Services could be consolidated closer to central campus. Functions which could be relocated include general accounting, purchasing, and budget office. With computerization, these activities could be independent of purchasing warehouse function which could remain at General Services Building. Alternatively, warehousing functions could be relocated to make room for other activities.

JOINT POLICE FACILITY - There is the potential for joint development of a police facility with the City of Newark. The facility, which should be on the campus near Main Street, would incorporate the university safety office whose space requirements are expanding.

HAZARDOUS WASTE - A facility is needed to store hazardous waste. Such a facility is proposed for South Campus.

COMPUTING CENTER - Functions of the computer center are growing. It could expand in place or utilize part of General Services facility if activities mentioned above

are relocated. However, there is a concern that the computer center is too remote from the main campus and should be more centrally located.

OPINIONS REGARDING STUDENT HOUSING

The primary concern with respect to student housing is the quantity which is available. The difficulties associated with student housing at the beginning of the academic year are widely recognized. However, there is no consensus regarding the approach and responsibility for constructing housing. There is a general feeling that the University should be careful about the quantity of additional housing which is constructed, particularly for undergraduates. Possibly as many as 100 beds could be constructed depending on the decision regarding student housing on central campus.

TABLE 3.12
OPINIONS REGARDING STUDENT HOUSING

	AMOUNT OF SPACE	LOCATION OF SPACE	QUALITY OF SPACE
Adequate	8 (12.9)	24 (38.7)	13 (21.0)
Inadequate	25 (40.3)	9 (14.5)	11 (17.7)
No Answer	28 (45.2)	29 (46.8)	36 (58.1)
Other	1 (1.6)	0 (0.0)	2 (3.2)

CENTRAL CAMPUS HOUSING - Current discussions regarding the status of student housing on central campus have generated mixed reactions. Most of the respondents who expressed an opinion felt that the housing could be removed from the central campus and the structures utilized for academic and/or administration space. However, other respondents felt that it was very important to allow the student housing to remain on campus.

GRADUATE HOUSING - It is generally recognized that the lack of adequate graduate housing, married student housing in particular, could be a deterrent to the University's efforts to expand its graduate programs. There is a particular concern regarding the image created.

SPECIAL INTEREST HOUSING - A wide variety of special interest housing needs was identified in questionnaires and interviews. These include:

1. International Program Housing - Need expressed for short-term and long-term housing for international students. Have experienced problems in private sector because of lack of availability of short-term leases. Landlords often require a minimum one-year lease. Also lack housing for short-term guest faculty.
2. Honor's Housing - Upper division Honor's housing is important to Honor's Program. Preferably, it should be located on central campus.
3. Fraternity Housing - Desire to replace existing facilities with new construction. Response by University is uncertain.
4. Sorority Housing - Sororities are becoming more popular and are becoming more interested in having their own houses.
5. Special Interest Housing - Older housing stock generally requiring replacement.

6. Guest Housing - Similar to housing which was formerly located in Perkins Student Center.

The location of these various housing facilities has yet to be identified. One area mentioned is the block bounded by North College Avenue, Cleveland Avenue, Rose, and Ray Street. Concern was expressed by several respondents that the University needs to be sensitive to the needs of the neighbors in this area.

IMPROVEMENTS TO EXISTING STUDENT HOUSING - Several comments were made regarding existing student housing. Consideration should be given to expanding recreational facilities and out-of-classroom educational experiences at locations of existing dorms.

OPINIONS REGARDING
INTRAMURAL/
RECREATION
FACILITIES

Primary concern was quantity of space, and quality, to a lesser degree. There has been a continual loss of available space for recreational activities which has forced a reduction in the offerings of the intramural program and reduced the length of playing seasons in order to accommodate demand. Space is frequently encroached upon for the addition of buildings or parking.

TABLE 3.13
OPINIONS REGARDING INTRAMURAL ATHLETICS/RECREATION
FACILITIES

	AMOUNT OF SPACE(%)	LOCATION OF SPACE(%)	QUALITY OF SPACE(%)
Adequate	20 (32.3)	7 (11.3)	13 (21.0)
Inadequate	25 (40.3)	27 (43.5)	31 (50.0)
Other	0 (0.0)	1 (1.6)	0 (0.0)

Other general comments included:

1. Good recreation facilities are an important factor in attracting students and they provide open space for the campus.
2. A desire exists to focus recreation facilities near student housing locations.
3. Carpenter Hall is old and needs improvements.
4. The swimming pool is overcrowded.

OPINIONS REGARDING
INTERCOLLEGIATE
ATHLETIC FACILITIES

There is a general feeling that the amount of space, the location of space, and the quality of space are adequate. A major concern exists regarding adequate parking to support attendance at athletic events.

TABLE 3.14
OPINIONS REGARDING INTERCOLLEGIATE ATHLETICS FACILITIES

	AMOUNT OF SPACE	LOCATION OF SPACE	QUALITY OF SPACE
Adequate	21 (33.9)	31 (50.0)	19 (30.6)
Inadequate	18 (29.0)	4 (6.5)	11 (17.7)
No Answer	22 (35.5)	26 (41.9)	30 (48.4)
Other	1 (1.6)	1 (1.6)	2 (3.2)

Other issues discussed were:

1. A need was identified for a new multi-purpose facility for basketball and other activities.
2. Practice fields are in short supply.

OPINIONS REGARDING
FOOD SERVICE
FACILITIES

The quantity, location, and quality of space devoted to Food Service are generally recognized as being adequate.

TABLE 3.15
OPINIONS REGARDING FOOD SERVICE FACILITIES

	AMOUNT OF SPACE	LOCATION OF SPACE	QUALITY OF SPACE
Adequate	29 (46.8)	39 (62.9)	25 (40.3)
Inadequate	17 (27.4)	4 (6.5)	13 (21.0)
No Answer	15 (24.2)	19 (30.6)	23 (37.1)
Other	1 (1.6)	0 (0.0)	1 (1.6)

However, there were issues raised relative to the food service facility:

1. Several comments were made about the need for a new dining facility. The facility should be centrally located and accessible to classroom space.
2. A concern was raised about the crowded conditions in several dining halls and the general appearance of the dining halls.

OPINIONS REGARDING OPEN SPACE

There is a general feeling that the existing open space is adequate and that the character of the open space should be preserved, particularly the "mall".

TABLE 3.16
OPINIONS REGARDING OPEN SPACE

	AMOUNT OF SPACE	LOCATION OF SPACE	QUALITY OF SPACE
Adequate	32 (51.6)	24 (38.7)	24 (38.7)
Inadequate	7 (11.3)	9 (14.5)	7 (11.3)
No Answer	22 (35.5)	29 (46.8)	30 (48.4)
Other	1 (1.6)	0 (0.0)	1 (1.6)

OPINIONS REGARDING OTHER NEWARK FACILITIES

In addition to the facilities discussed in the previous sections, there were several facilities which were identified which did not fall into the available categories. These facilities are described below.

*Manous
Road*

TECHNOLOGY PARK - Initial steps are under way to develop incubator space and new research/technology facilities on land bounded by Library Avenue (Route 72), RR tracks, ~~Morrow Avenue~~, and a shopping center to the north. Building on chemical, engineering, business, medical technology, research, or agriculture base.

HOTEL - The university has recently started a program in hotel management. Frequent comments were made regarding the desirability of developing a hotel as part of the campus complex where the students could receive direct hands-on experience. The need for a hotel was emphasized to help the conference business, provide interim accommodations for visiting faculty or new faculty, and to provide better accommodations for alumni or families visiting the campus.

It was emphasized that future growth in the use of Clayton Hall depends on the ability to house people. The manager would like to construct a 125-bed addition to Clayton Hall.

The alternative of locating the hotel on Main Street was felt to be less desirable for Clayton Hall programs, although feasible. Most other respondents who expressed an opinion would prefer a hotel located on Main Street.

CHILD CARE - Several respondents indicated the need for additional child care facilities for staff, faculty, married students, etc. The program could possibly incorporate after-school care.

NORTH CAMPUS DEVELOPMENT - The area north of the Christian Complex was mentioned as a possible location for the development of a multi-purpose facility, possibly associated with a retreat or fitness center.

JUNIOR FACULTY HOUSING - The need for housing for new faculty members was mentioned. This could be interim housing or longer range housing alternative, since it was felt that the housing near the campus would be too expensive for junior faculty.

BLACK HISTORICAL MUSEUM - The need for a black historical museum was identified. The museum could be a state repository. It was felt that there was a good museum staff in place which could support the development of this type of museum.

SOUTH CAMPUS - Several respondents indicated that a long-term plan for the South campus needs to be carefully evaluated.

PROJECTED NEEDS - PRELIMINARY DEVELOPMENT REQUIREMENTS

INTRODUCTION

Based on the findings of the Land Use questionnaires and follow-up interviews, as well as available descriptions of current and proposed projects, a significant number of projects were identified which will impact the future use of University property on the Newark campus. This section describes these projects and, to the extent possible, identifies the acreage required to accommodate the potential development. It is important to note, however, that in several cases, additional programming

work, which is beyond the scope of this study, is required before the specific size of a development parcel can be determined.

The potential development projects have been grouped according to the previously identified land use classifications -- Academic, Administration and Support Services, Student Activities, Student Housing, Food Service, Intercollegiate Athletics, Intramural/Recreation, Parking, Open Space, and Other Facilities.

ACADEMIC

A demand for over 200,000 gross square feet of academic space has been identified. The amount of space required could be easily doubled or tripled when specific space programs are developed for projects where only the need has been identified and the implications of Project Vision are dimensioned in physical terms. These projects could require between 5 to 10 acres of and in the Core Academic area of the Newark campus.

In addition, it is important to have land available in the Academic Core for long-term development which can not be identified at this time. The projects which are presently under consideration are described below:

CHEMISTRY BUILDING - A new building containing between 70,000 and 100,000 gross square feet has been proposed. The building will primarily house physical and analytical chemistry research and associated instrumentation. The building will be expanded from 70,000 square feet to 100,000 square feet if the laboratories for Marine Sciences are also included as part of the construction. Service drives and open space, it is estimated that between 1 and 2 acres will

be required to accommodate the proposed development. The location discussed for the proposed Chemistry Building is the southeast corner of the Academy Street and Lovett Avenue intersection.

COMPUTING AND MATHEMATICAL SCIENCES LABORATORY

BUILDING - The proposed construction will consolidate the operations of the Computing and Information Sciences Department and the Mathematical Sciences Department into a new structure containing roughly 63,000 gross square feet.

Depending on the configuration of the building and the number of floors, it is estimated that the proposed development could require between three-quarters to one acre.

A possible site which has been mentioned for the building is the northwest corner of the East Delaware Avenue and South College Avenue intersection.

ALISON HALL ADDITION - An approximate 25,000 gross square foot addition is proposed for Alison Hall to support the program of the College of Human Resources. Roughly a quarter of an acre will be needed for the development. The addition is proposed for the west side of Alison Hall.

ADDITION TO SHARP LABORATORY - A need for 20,000 square feet of additional laboratory and office space for the Physics Department and Bartol Foundation has been proposed. The space could be developed as an addition to Sharp Laboratory or as a free-standing building. Between a quarter and a third of an acre would be required for the proposed development.

OTHER POTENTIAL ACADEMIC BUILDINGS - In addition to the quantified construction projected listed above, there are a series of other projects where a need has been identified but a specific space program has not been generated. These projects include:

1. College of Business and Economics - possible addition to Purnell Hall or free-standing building.
2. School of Life and Health Sciences - new laboratory space near McKinly Laboratory.
3. Engineering - additional laboratory, office and teaching space.
4. English Language Institute - new structure of unspecified size to be considered for corner of Academy Street and East Park Place.
5. Art Facilities - construction of new or substantial renovation of existing Art Department facilities.
6. College of Agricultural Sciences - Addition to Worrilow Hall for additional faculty and graduate student offices and laboratories (conditional upon transfer of Food Science program from the College of Human Resources).
7. Additional Academic Space - If the recommendations for smaller undergraduate class sizes is fully implemented, there will be a need for additional general classroom space. One

proposal is the construction of a general classroom building which is not associated with a specific college.

8. Additional Faculty Offices - Continuing demand for additional faculty office space and need to relocate activities currently housed in residential structure. Desire to expand Graduate Study programs will also increase demand for office space.

ADMINISTRATION
AND SUPPORT SERVICES

A need to expand the Computing Center has been identified but no specific space program has been generated. In addition, several proposals have been made to relocate existing administrative operations. In the process, existing overcrowded conditions should be corrected. However, no specific space program has been developed for the respective projects. These projects include:

STUDENT SERVICES OFFICE BUILDING - Proposal to relocate student-related services from HULLIHEN Hall to a separate facility. Functions to be considered for the new facility include registration and change of registration; other Registrar's Office functions such as transcripts, financial aid and scholarships; student accounts payable and the cashier's office, meal tickets; room assignments; and I.D. cards.

MANAGEMENT SERVICES OFFICE BUILDING - Proposal to consolidate management and administrative office functions that do not need to be located in the heart of the

academic campus. The functions to be relocated include fiscal management and financial control, employee relations and personnel activities.

STUDENT ACTIVITIES

Proposal to double size of existing Perkins Student Center (158,000 gross square feet) or construct a new, expanded student center at a location to be determined.

Preliminary programming has indicated that an expanded center could contain as many as 250,000 square feet. Assuming a two-story to three-story structure, with necessary serving and landscaping, the development of the center could require approximately 3.0 to 5.5 acres.

STUDENT HOUSING

A variety of new housing has been discussed for the campus which includes:

UNDERGRADUATE HOUSING - A need has been identified for 100 additional beds of undergraduate housing. This would be the equivalent of one of the residential buildings in the Russell/Gilbert/Harrington complexes or one of the buildings in the Dickinson Complex. This typical construction would require roughly one-half acre of land.

It is important to note that the 100 beds represents a net increase. Depending on future development proposals, it may be desirable to provide additional replacement beds.

GRADUATE HOUSING - There were 2,055 graduate students on the Newark campus during the Fall of 1986. Over 56% (1,160) of the students were classified as "full-time". Of these, only a very small percentage (an estimated 10

to 20) lived in the Graduate housing available at Conover West. The type of two-bedroom apartment units for four students are not popular. Therefore, it is very difficult to gauge the actual demand for graduate housing.

There is an expressed desire on the part of the University to increase the graduate enrollment to 3,000. Given the tight housing market, the availability of adequate housing for graduate students will be an important factor in the ability of the University to achieve this goal.

FRATERNITY/SORORITY HOUSING - There are presently 1,490 students who belong to a fraternity or sorority. Roughly 30% of these students live in a chapter house. However, these houses are scattered at various locations on or near the campus. approximately 226 fraternity/sorority members live in housing which is not on university-owned property. The university administration would like all housing on university property.

TABLE 3.15
FRATERNITY/SORORITY HOUSING

	No. of Members	Members Living in Chapter House	Chapter House Capacity
Fraternities	870	325	365
Sororities	620	110	115
Total	1,490	435	480

INTERCOLLEGIATE ATHLETICS - A new multi-purpose facility for basketball and other activities has been suggested. The facility is projected to have 5,000 to 6,000 seats. It is estimated that this type of facility would require roughly three acres of land. In addition, roughly

1,650 to 2,000 parking spaces would be needed to accommodate the activities which could occur in the facility. The implications of the additional parking are discussed in the following "Parking" section.

INTRAMURAL/RECREATION - Although a specific intramural/recreation program was not identified, the quantity of recreation facilities for student use has declined steadily for over three decades. Any new residential development should incorporate or make provisions for additional intramural fields.

PARKING

As reviewed in the discussion regarding the response to the questionnaire, parking was identified as the most critical problem at the present time. A detailed study of this problem is needed to appropriately propose a specific solution. However, partial estimates of parking need can be generally identified by comparing information regarding available parking with known areas of parking demand.

EMPLOYEE PARKING - Table 3.16 identifies the available parking by the sub-areas of the Newark Campus. "White and Gold" designated spaces are exclusively for employees. However, students can have access to blue spaces.

TABLE 3.16
AVAILABLE PARKING BY CAMPUS SUB-AREA

	White & Gold	Blue	Red	Others	Visitors	Total
Academic Core	1,822	1,178	183	178	112	3,473
Residential Core	313	263	0	73	0	649
North Campus	488	414	0	165	0	1,067
South Campus	0	201	696	9	0	906
East Campus	5	267	0	19	0	291
West Campus	106	88	0	54	0	248
Total	2,734	2,411	879	498	112	6,634

Table 3.17 identifies the total employees for each of the respective Newark Campus. Professional/salaried staff could be expected to be on campus from Monday through Friday during normal working hours. Faculty/

others could have more variable hours, but could generally be expected to be teaching or offered during the 10:00 a.m. to 2:00 p.m. peak

TABLE 3.17
EMPLOYEE COUNT BY CAMPUS SUB-AREA

	Profes- sional/ Salaried Staff	Faculty/ Other	Total Employees
Academic Core	1,625	2,388	4,013
Residential Core	319	93	412
North Campus	127	37	164
South Campus	167	132	299
East Campus	267	4	271
West Campus	76	5	81
Total	5,240	2,581	2,659

Table 3.18 identifies the potential shortage in the respective sub-areas with and without the commitment of "Blue" spaces to employees.

TABLE 3.18
POTENTIAL EMPLOYEE PARKING DEMAND

	Factored* Employee Demand	White and Gold Space	Difference	Blue Spaces	Difference
Academic Core	3,374	1,822	(1,552)	1,178	(374)
Residential Core	319	93	412	263	214
North Campus	127	37	164	414	757
South Campus	167	132	299	201	(56)
East Campus	267	4	271	267	27
West Campus	76	5	81	88	121
Total	4,456	2,734	(1,722)	2,411	689

* Based on an annual 90% occupancy for professional/salaried staff, for car pooling, time off, sickness and meetings away from the university 80% occupancy for faculty and other employees.

The major problem is clearly in the Academic Core. Based on the assumptions listed above, if all the "Blue" spaces were occupied by employees, there would still be a 374 space shortage. Assuming an average 325 square feet per space, it would require roughly 2.8 acres to accommodate 374 cars with surface parking. Depending on the amount of student parking allowed, the demand for additional parking could be significantly greater.

The South Campus also is short on parking according to the analysis. However, there are 696 red parking spaces which are not always fully used.

Although the East Campus sub-area appears short, there are virtually no student functions in this area competing for "Blue" spaces. However, nearly 28% of the spaces are located on the lot to the east of the I.E.C. building. This lot is not fully utilized and remote.

The Wyoming Lot (5) which has 68 spaces supplements the demand, although technically classified as being in the Residential Core sub-area.

SOUTH CAMPUS PARKING FOR EVENTS - If a new 5,000 to 6,000 seat basketball arena is constructed on the south campus, additional parking will be required. It is estimated that a facility of this size could have a demand for up to 2,000 parking spaces. There are presently 897 spaces on the south campus. Therefore, assuming no other activities were occurring at the time of an event, roughly 1,100 additional spaces would be required. Approximately 8.2 acres of land would be required to accommodate 1,100 cars. Assuming none of the existing spaces could be utilized, it would produce a demand for roughly 15 acres of surface parking.

ASSEMBLY/PERFORMING ARTS CENTER PARKING - To facilitate the multi-use capability of a 3,000 seat facility, there is a need for approximately 1,000 cars to be in close proximity to the Center. Depending on the scheduling of the events, it would be possible to use existing University parking for some of the required spaces, but clearly not all of the spaces.

OPEN SPACE - No specific program has been developed for additional open space. Based on the survey results and observations of the existing campus, the University is fortunate that previous plans for the campus have preserved the Mall and have generally incorporated concerns for additional open space into the respective developments.

As the additional development occurs which is outlined in this section, it will be important to incorporate open space into the respective projects.

OTHER FACILITIES

ASSEMBLY/PERFORMING ARTS CENTER - A need has been identified for an auditorium and performing arts facility which could accommodate approximately 3,000 people. It would be desirable for the facility to be capable of being subdivided.

A facility of this type would contain approximately 40,000 to 60,000 square feet of development. Depending on the seating arrangement, the center would require roughly 1.5 to 2.5 acres of land. In addition, the facility would need to be in close proximity to approximately 1,000 parking spaces to support the activities of the center.

HOTEL - A need has been expressed for overnight accommodations to support the continuing education programs and accommodate visitors to the campus. The Continuing Education department would like to see a 125-room facility constructed, preferably near Clayton Hall.

This type of facility would contain approximately 80,000 to 100,000 square feet. Depending on the number of stories and the configuration, this facility would require roughly 2.5 to 4.0 acres of land. Access to parking for approximately 180 cars would be required.

POTENTIAL UNIVERSITY ACTIONS

INTRODUCTION

Planning for the Newark campus involves many complex issues which continue to change and evolve. As discussed in the Introduction (Section 1.0) of this report, there are a number of issues which require additional attention before more definitive plans can be generated for the campus. These issues include:

1. the character of Main Street and the University involvement in charting its future direction; the future involvement of the University in conferences and other non-traditional forms of full-time education;
2. the future economic feasibility of portions of the College of Agriculture activities which occupy space on the South campus;
3. and a coordinated approach for the provision of housing by the University and the private sector.

In addition, many of the potential facilities discussed for development on the Newark campus require programming.

Despite the existing unresolved issues, there are several planning guides which can direct the development of a strategic land use plan for Newark campus. These guides are:

1. The heart of the academic activities are focused along the north mall between East Delaware Avenue and Memorial Hall. Generally, liberal arts activi-

ties extend to the east and engineering and other technically oriented disciplines extend to the west. It is essential that adequate space be reserved or created for short-term and long-term reinforcement of the academic heart of the campus.

2. Support facilities for the academic functions should be near the academic heart of the University, but care should be taken to protect valuable space for academic expansion. The support facilities would include assembly/performing arts center, student union, the library and parking.
3. Other support functions which do not need to be adjacent to the academic facilities could be more remotely located. These support functions include administrative and maintenance facilities, housing and related recreation/cultural facilities, and intercollegiate facilities.
4. As the campus expands in an east-west direction, ways should be sought to improve east-west pedestrian circulation and provide additional open space for newly developed areas.

The short-term and long-term development options and issues for academic space, academic support spaces and other support facilities is discussed below.







STRATEGIC LAND USE PLAN

UNIVERSITY
OF
DELAWARE

NEWARK - CENTRAL ACADEMIC DEVELOPMENT OPTIONS

LEGEND

-  DEVELOPMENT SITE
-  REDEVELOPMENT SITE
-  POTENTIAL ACQUISITION
-  PRIMARY ACADEMIC AREA

DEVELOPMENT STRATEGIES, INC.

911 Washington Avenue
St. Louis, Missouri 63101

ACADEMIC FACILITIES

Land for the expansion of academic facilities near the heart of existing academic facilities is in short supply. The largest, most readily available site, is the area near Alison Hall. If properly developed, two or three of the proposed academic buildings can be constructed at this location.

The undeveloped area south of the Library could also be utilized for academic buildings but it is further removed from the heart of the academic activities.

The open area between Sharp Laboratory and Mitchell Hall is also available for development. However, it seems most appropriate to reserve this space for the desired expansion of Sharp Laboratory and a pedestrian connection to the academic structures to the west of College Avenue.

All other academic expansion locations would require the redevelopment of an existing developed area. The site on the western portion of the campus include:

1. The Maintenance Center near the Bower House. This assumes that these functions could be relocated to another location which would not require as direct access to the center of the campus.
2. The parking lot on the southeast corner of Academy Street and Lovett Avenue. This site is mentioned as a potential location for a new chemistry building.

3. The recently constructed parking area to the east of Newark Hall. However, over 600 parking spaces have been developed at this location and would need to be replaced.
4. Harter and Sharp Hall along with the two smaller structures fronting on East Delaware. This would necessitate the replacement of 216 residential beds. It would be desirable to acquire additional property to the east to maximize the redevelopment potential.

Redevelopment potential to the east includes:

1. Brown Hall and Sypherd. This would require the replacement of 245 student housing beds. However, the undeveloped area to the west could be used for additional construction.
2. Hullihen Hall, which contains approximately 43,000 usable square feet could be returned to academic use.
3. All or portions of the block bounded by Main Street on the north, College Avenue on the east, East Delaware Avenue on the south, and Elkton Road on the west. However, this site would also be the best location for Student Union.
4. All or portions of the block bounded by East Delaware Avenue on the north, Orchard Road on the east, Amstel Avenue on the south and Elkton Road on the west. However, the University does not own this property.

5. The College Avenue frontage between Amstel Avenue on the north and Winslow Road on the south.

It is estimated that half of these sites will be required to accommodate short-range requirements and that virtually all of the sites will be needed for long-range growth.

ACADEMIC SUPPORT FACILITIES

ASSEMBLY/PERFORMING ARTS CENTER - A short-range goal is the development of a 3,000 seat Assembly/Performing Arts Center. The facility will require between 1.5 to 2.5 acres of land. This facility should be in close proximity to 1,000 parking spaces and be located near major circulation routes in Newark. It is also desirable if the facility would be near the Amy DuPont Music Center.



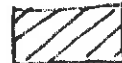
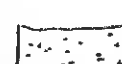


The most logical location for this type of facility is to the south or west of the DuPont Music Center. If the center is constructed to the south of the Music Center, it will necessitate the replacement of approximately 300 parking spaces. These spaces could be developed in a new parking structure to be built to the west where the Conover Apartments are. Direct covered access could be provided from the parking garage to the center. The construction of the Performing Arts Center at the end of Kent Way would form a visual termination for a pedestrian oriented way which could be created from Kent Way.



STRATEGIC LAND USE PLAN

UNIVERSITY
OF
DELAWARE

NEWARK - CENTRAL ACADEMIC SUPPORT FACILITIES

-  PRIMARY STUDENT UNION SITE
-  ALTERNATE STUDENT UNION SITE
-  ASSEMBLY / PERFORMING ARTS CENTER SITE
-  POTENTIAL LIBRARY EXPANSION
-  POTENTIAL PARKING SITE FOR GARAGES
-  POTENTIAL DECK PARKING SITE

DEVELOPMENT STRATEGIES INC.

911 Washington Avenue
St. Louis, Missouri 63101

Construction of the Center to the west also would necessitate the replacement of the Conover Apartments. A parking garage could be constructed to the north across Amstel Avenue or south of the DuPont Center.

STUDENT UNION - A short range goal should be the construction of a Student Union. Three possible locations have been identified.

1. The block bounded by Main Street to the north, South College Avenue to the east, East Delaware to the south, and Elkton Road to the west. The construction of a Student Union at this location would help to reinforce activity along Main Street. The construction would require the replacement of approximately 580 parking spaces and approximately 20,000 square feet of academic-related facilities.
2. An alternative location for the Student Union would be along North College Avenue between Cleveland Street on the north and the railroad tracks on the south. Construction at this location would require the replacement of approximately 513 parking spaces. The need to cross the railroad tracks is a negative aspect of this location.
3. A third and least desirable solution would be to expand the existing Perkins Student Center to the south. Expansion would require the replacement of 189 parking spaces and approximately 7,000 square feet of academic-related development. This location is the least centrally located for the majority of the student population and the site is somewhat constrained.

MORRIS LIBRARY EXPANSION - A long-range concern should be the future expansion of Morris Library. Space should be reserved for the library to expand to the north (if the administration functions of Hullahen Hall are relocated) and/or to the south. The proposed parking discussed below would help support the operations of Morris Library.

PARKING - As discussed in the needs section, the Academic Core area is minimally 300 cars short of parking and probably short two to three times that amount. In addition, new development within the Academic Core area will remove additional parking. The only way to accommodate the necessary parking in close proximity to the Core Area is through parking structures. Remote parking with shuttle serve could help alleviate some of the shortage, but clearly cannot be counted on to solve the majority of the parking shortage.

As previously discussed, it is desirable to have one of the garages in close proximity to the Assembly/Performing Arts Center. Several alternative locations along Elkton Road were previously identified.

A second location for a parking structure would be on the east side of the campus along the major circulation route serving that portion of the campus. Several alternative locations are possible to the south or west of Newark Hall.

A third location for a parking structure would be along the north side of East Delaware Avenue between Sharp Hall and Academy Street.

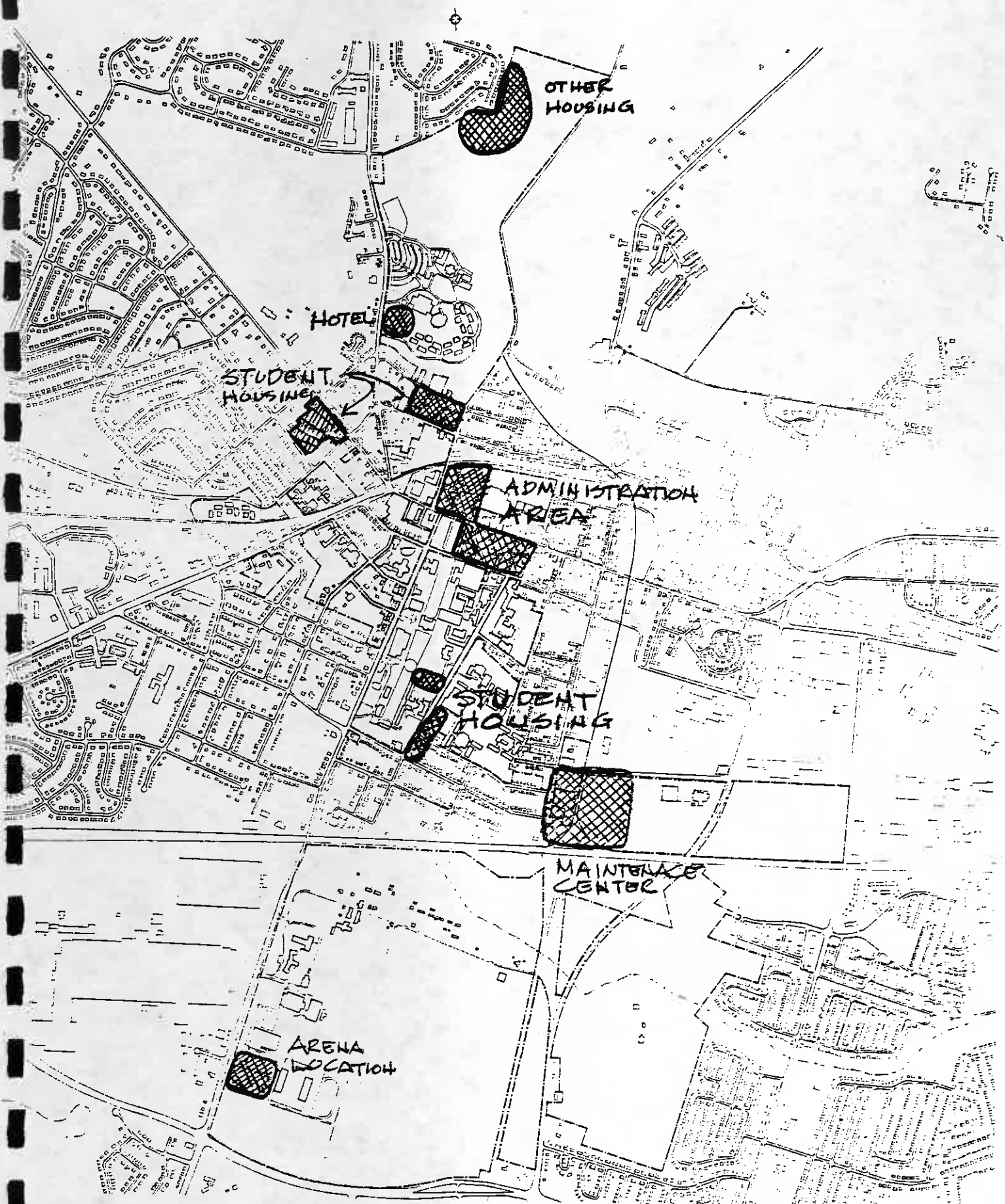
OTHER SUPPORT FACILITIES

A fourth location for a parking structure would be on the existing lot along North College Avenue to the north of the railroad tracks.

Two other locations for lower scaled decked parking would be along the west side of South College Avenue between Kent Way and Winslow Street and the east side of South College Avenue between Morris Library and Warner.

ADMINISTRATION - It should be a general goal to relocate most of the administrative operations out of the heart of the academic area and in closer proximity to Main Street. This relocation will need to occur in several phases and will need to be integrated with a comprehensive plan for Main Street. This relocation will need to occur in several phases and will need to be integrated with a comprehensive plan for Main Street. Potential relocation opportunities include:

1. Harter and Sharp Hall with expansion to the east.
2. The Old College area from the railroad on the north, to Carpenter Sports Building on the east to Main Street on the south to North College Avenue on the west. Within this area, building can be renovated for office use and new buildings constructed, primarily to the north of Old College. The art-related programs in this area would need to be relocated, probably near the Amy DuPont Center. In addition, the existing fraternities would need to be relocated. Administrative facilities in this location would tend to pull unwanted vehicular traffic away from the academic facilities.



NEWARK CAMPUS
OTHER SUPPORT FACILITIES

3. Other locations along Main Street which are yet to be determined.

MAINTENANCE - Car pool maintenance, warehousing, and other maintenance functions should be concentrated near the Wyoming Road and South Chapel Street intersection.

STUDENT HOUSING - New and replacement student housing should reinforce existing student housing areas. Proposed areas for housing and additional recreation facilities are:

1. North campus area in the block bounded by Ray Street to the north, North College Avenue to the east, Cleveland Avenue to the south, and Rose to the west.
2. Along the east and west side of Academy Street from the Perkins Center on the north to East Park Place on the south. If the Student Center is relocated, Perkins Center can serve an expanded dining function and provide additional recreation opportunities. In addition, Hartshorn Gym could be returned to its original recreation use. Fraternities or sororities needing common dining facilities would be well suited to this location.
3. The area bounded by West Main Street on the north, Hillside Road on the east, Dallow Road on the south, and Old Oak Road on the west would make an excellent location for married student and graduate housing. This type of housing could be integrated well with the surrounding residential neighborhood with careful design.

INTERCOLLEGIATE RECREATION - As previously discussed, a new 5,000 to 6,000 seat basketball area/recreation facility will require between 12 and 18 acres of land depending on the potential for utilizing existing parking. It is logical to place this facility and its parking near the existing Field House and stadium on the South Campus. This will allow common use of the facilities and provide additional parking for football games. To accommodate this new arena and parking, approximately half of the existing practice fields to the south of the stadium will need to be relocated. Potential relocation sites include the alfalfa fields to the north or east of Ecology Woodlot. The precise location will depend on the findings of any additional study of the agricultural and research operation on the south campus.

HOTEL - Additional analysis is required on the feasibility of developing a hotel in conjunction with the existing conference center at Clayton Hall or as a free-standing entity. There is space to the west of Clayton Hall to develop a hotel complex with parking. There is also the possibility of developing a hotel along Main Street as part of an improvements program.

OTHER HOUSING - The northern portion of the North Campus areas contains some gently sloping land near existing residential development to the west. This land would be appropriate for the construction of non-student housing for university-related faculty and staff.

VEHICULAR CIRCULATION

Existing vehicular circulation patterns significantly segregate the campus. Traffic on South College Avenue and East Delaware Avenue are the major problem. Academy

Street traffic also is a problem. A simple step would could significantly help the traffic flow on these streets would be to restrict truck traffic.

In the future, as the campus continues to expand in an east-west direction, it will become even more critical to divert traffic from South College Avenue and Academy Street to provide greater pedestrian freedom of access to the campus and a more cohesive feeling to the campus. Several options were explored for each street.

SOUTH COLLEGE AVENUE - The west side of the campus the greatest benefit can be gained by diverting South College Avenue to Amstel Avenue before intersecting with Elkton Road. This would allow South College Avenue to be closed between Amstel Street and Main Street.

Depending on the type of development to occur north of Main Street, it is possible that this portion of College Avenue could also be closed.





ACADEMY STREET - On the east side of the campus two approaches are possible:

1. Academy Street can be terminated near Lovett Avenue and connected to Haines Street.
2. Academy can be closed to through traffic from East Park Place to East Delaware Avenue and a new service road created from East Park Place to Benny Street to Haines Avenue.

STRATEGIC LAND USE PLAN

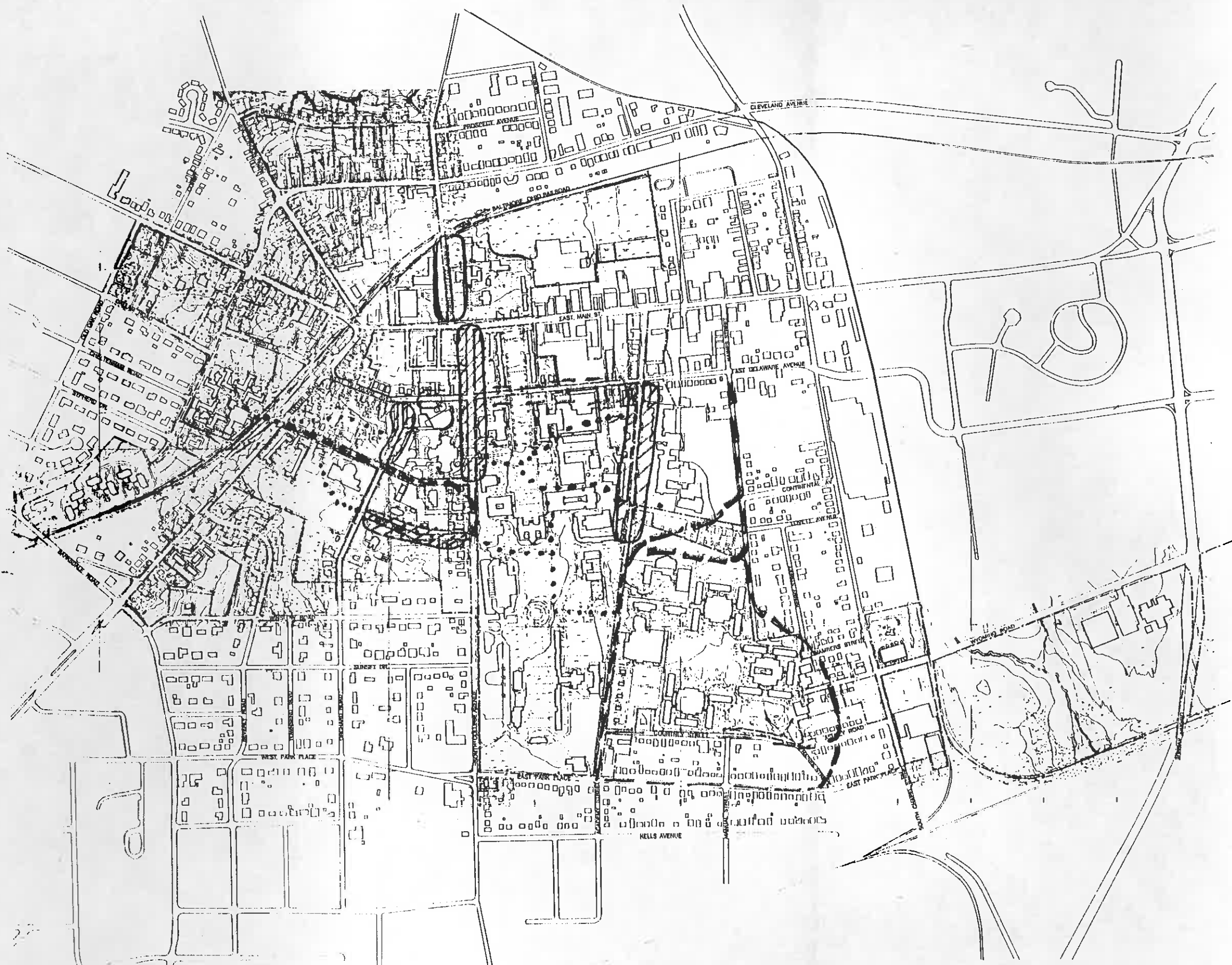
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NEWARK CAMPUS CIRCULATION ALTERNATIVES

-  POTENTIAL STREET VACATION ?
-  POTENTIAL STREET RELOCATION
-  POTENTIAL EAST DELAWARE STREET MODIFICATIONS
-  PRIMARY PEDESTRIAN CIRCULATION.

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OPEN SPACE
PEDESTRIAN
CIRCULATION

EAST DELAWARE AVENUE - As a long-term solution, the economic feasibility should be studies of sinking East Delaware where it crosses the North Mall.

As the Newark Campus expands in an east-west direction, it will also be important to provide improved east-west pedestrian circulation. This will be particularly difficult in the eastern portion of the campus. New development in this portion of the campus should facilitate the following pedestrian paths.

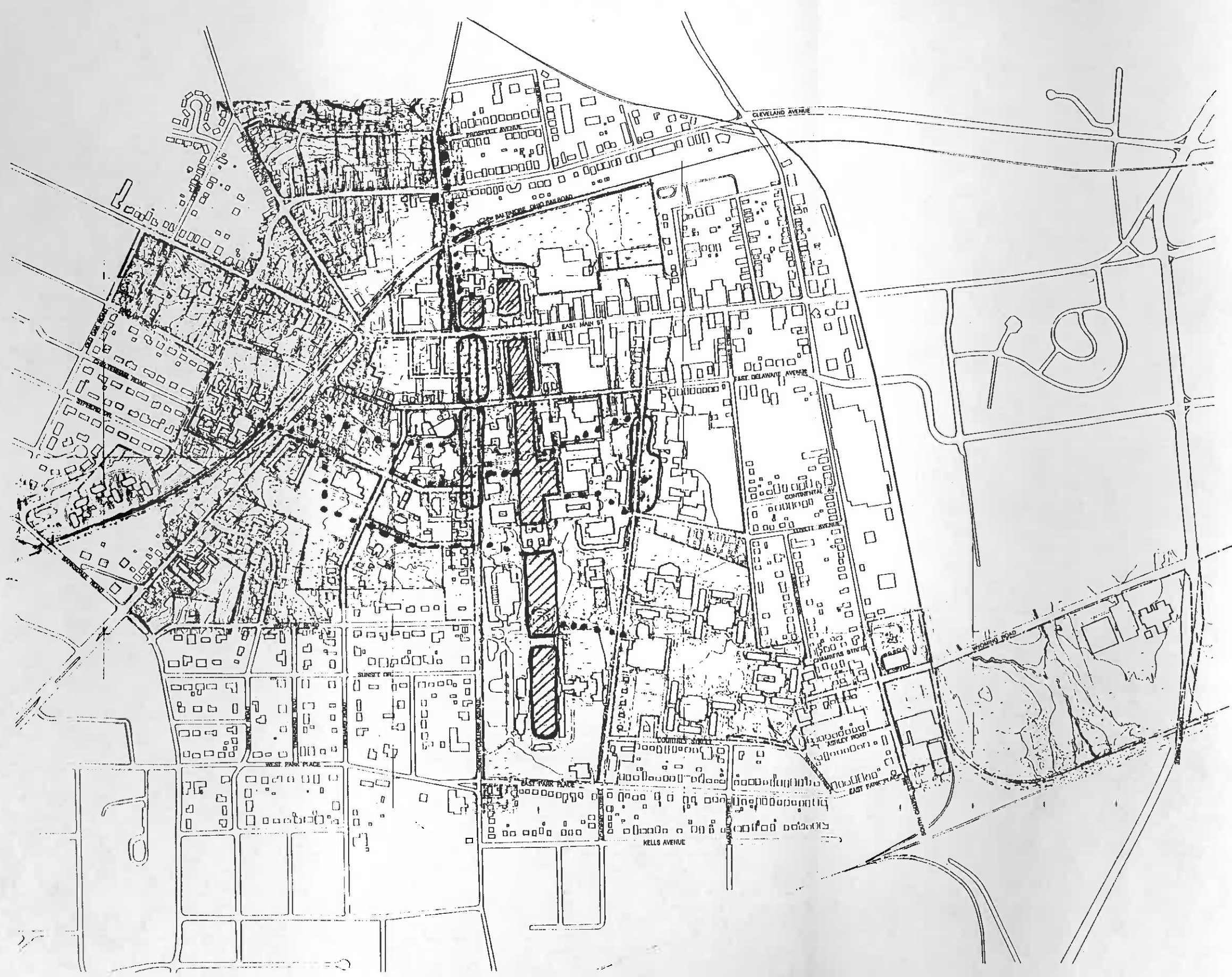
1. A path north of Spencer Laboratory across the McKinly Plaza to the Mall.
2. A path south of Colburn, between Brown and Evans to the Mall.
3. A path south of Alison to the Mall.

On the west campus, a pedestrian path should be created from the Mall to a central spine between Kirkbridge and Smith and on to development to the west.

Another pedestrian way should be created west of South College Avenue along Kent Way.

POTENTIAL CENTRAL CAMPUS DEVELOPMENT

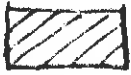
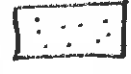
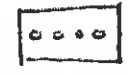
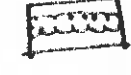
The short-term and long-term development of the Central portion of the Newark campus is complicated by many factors which will continue to change. Therefore, an ongoing planning process for this portion of the campus is essential. The accompanying master development strategy for the central campus synthesizes the development



STRATEGIC LAND USE PLAN

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NEWARK CAMPUS OPEN SPACE AND PEDESTRIAN CIRCULATION

-  EXISTING MAJOR
OPEN SPACE
-  POTENTIAL NEW
OPEN SPACE
-  PRIMARY PEDESTRIAN
CIRCULATION
-  SPECIAL LANDSCAPE
ALONG PEDESTRIAN
CIRCULATION

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options discussed previously in this section. It is one of many scenarios. It does, however, attempt to pull together the best solution given the information which is available.

The key elements of the Strategic Land Use Plan recommend:

1. That the central portion of the campus from Main Street on the north to Haines Street on the east, to the northern end of Cannon Hall and Warner Hall on the south, to approximately Elkton Road on the west be dedicated to academic use. The exceptions to this approach would be the maintenance of the existing power house for steam distribution and the construction of the Assembly/Performing Arts Building and the Student Union to be located at the periphery of the area.

The eastern portion of the campus should serve as a focus for scientific-related structures and the western portion of the campus would serve as the focus for Liberal Arts Studies.

2. That the administrative activities for the university should be shifted to the Main Street area. The historic structures near Old College could be renovated for this purpose and new building constructed. Portions of the administrative functions of the university could be extended east to the Academy Building. Student-related administrative functions would primarily be housed in the Student Union to be constructed along Main Street between South College Avenue and Elkton Road.

NEWARK CAMPUS - STRATEGIC DEVELOPMENT PLAN

Maintenance and warehousing activities for the university should be concentrated near the intersection of Wyoming Road and South Chapel Street.

3. That additional student housing and associated recreation facilities be concentrated near the existing Perkins Student Center area and the Cleveland Avenue and North College Street area. The block bounded by West Main Street, Hillside Road, Dallam Road and Old Oak Road should be developed for married student and graduate housing.
4. That a new Assembly/Performing Arts facility be constructed near DuPont Hall.
5. That parking garages be constructed along Elkton Road near Amstel Avenue, along East Delaware Avenue east of Sharp Hall, along Haines Street near Lovett Avenue, along North College Avenue to the north of the railroad tracks and that parking decks be constructed along South College Avenue near Morris Library.
6. That South College Avenue be diverted to Elkton Road along Amstel Avenue and Academy Street be closed to through traffic.

INITIAL STEPS FOR IMPLEMENTATION

Several steps need to be undertaken to allow for the more extended implementation of the Strategic Plan.

1. New student housing needs to be constructed to replace the Conover Apartments, housing along the

North Mall, replacement fraternity and sorority housing, and any additional general student housing.

This will allow plans to be made for a new Assembly/Performing Arts Center and expansion of non-residential uses to the north Mall area.

2. A detailed master development plan for the portion of the campus near Alison Hall should be prepared in order to maximize the development opportunities which are available until opportunities which are available until other opportunities can be created. This should include Penny Lot (Number 5) on the east side of Academy Street and the existing car pool facility.
3. A comprehensive plan for Main Street should be prepared including the Old College area. Included in the study should be a refinement of the integration of university-related administrative activities and a new parking structure.
4. Additional discussion with state and local officials should be held concerning the potential modifications to South College Avenue, Academy Street, and East Delaware Avenue.

SECTION 4.0
WILCASTLE/GOODSTAY

4.0 WILCASTLE/GOODSTAY

INTRODUCTION

The Wilcastle/Goodstay property represents an excellent opportunity to expand the presence of the University in the Wilmington area. There is a good base of existing development and available land for additional development.

SITE CHARACTERISTICS

SIZE AND CONFIGURATION

Wilcastle/Goodstay near Wilmington is located on a 34-acre rectangular tract of land along Pennsylvania and Greenhill Avenues. The Conference Center, the Life Long Learning Center, and a formal garden occupy one-third of the total land holdings.

The property divides naturally into two adjacent rectangular-shaped areas. The fourteen acres of undeveloped field lie closest to the corner of Pennsylvania and Greenhill Avenues. The remaining 20 acres front Pennsylvania Avenue. The other borders are a public golf course and the playing fields of Tower Hill School.

WILCASTLE/GOODSTAY AERIAL GOES HERE

WILCASTLE/GOODSTAY MAP OF EXISTING DEVELOPMENT AND EXTERNAL CONDITIONS GOES
HERE

The buildings form clusters at right angles to each other. The "L"-shape configuration creates a front lawn with parking lots in the middle. The formal garden is sited to the south of Goodstay Center.

TOPOGRAPHY

The land gently slopes from the west corner of the property along Pennsylvania Avenue to the southeast corner of the property along Greenhill Avenue. It rises approximately 215 feet from 160 feet -- a 3% slope.

EXISTING DEVELOPMENT

LAND USE

Manicured fields occupy nearly 50 percent of Wilcastle/Goodstay. The field closest to Greenhill Avenue is sometimes used by the neighboring school. The formal garden covers two acres. Together, parking and buildings occupy roughly ten acres.

BUILDINGS

Wilcastle and Goodstay, a former country club and estate, were acquired in 1970 and 1969. Goodstay was constructed circa 1740. The following table lists the significant structures.

Code	Building	Available Sq. Ft.	Use
WG01	Goodstay Bldg.	9,870	Instruction
WG02	Studio Bldg.	344	Instruction
WG07	Barn	4,476	Instruction
WG20	Wilcastle Bldg.	21,434	Instruction
Total Square Feet of Instructional Space		36,124	
WG06	Laundry Bldg./ Apartments	1,345	Housing
WG08	Tenant House	1,605	Housing
Total Square Feet of Housing		2,950	

There are 8 auxiliary buildings used for storage, garages, and plant operations.

PARKING

Parking fronts many of the campus buildings. There are approximately 355 spaces.

EXISTING SITE INFRASTRUCTURE

CIRCULATION

Three driveways bring traffic off of Pennsylvania Avenue into the campus. These lie perpendicular to the avenue and funnel autos into four lots. There is presently no access to the property from Greenhill Avenue.

UTILITIES

Utility trunk lines which serve the property run beneath and parallel to Pennsylvania and Greenhill Avenues.

EXTERNAL CONDITIONS

NEIGHBORING LAND USE

Neighboring land use includes a public golf course, large single family residences to the north and east and the Tower Hill School's recreational fields and tennis courts to the west. The school grounds are across Pennsylvania Avenue to the north. The area immediately surrounding the campus is zoned for single family detached houses with a 6,000 square foot minimum lot size. A condominium tower (zoned R5B, Apartment House Medium Density) stands at the northeast corner of Pennsylvania and Greenhill Avenues. At the same intersection, a church sits on the southeast corner.

ACCESS

Currently, Pennsylvania Avenue (Route 52) provides the campus' only direct access. The potential of using Greenhill Avenue exists if development occurs on the 14 acres bordering the avenue. A two-lane arterial

highway, Pennsylvania Avenue leads directly into downtown Wilmington and I-95. The heart of downtown lies approximately one-and-a-half miles from the campus. No significant changes are currently anticipated for the Pennsylvania Avenue/Kennett Pike corridor.

UTILITIES

Wilcastle/Goodstay lies both inside and outside the Wilmington city limits. Utility companies provide service depending on their jurisdiction. This does not create a problem; the entire area is serviced. The City of Wilmington attains surface water from the Brandywine Creek. Water is stored in two city reservoirs. Waste water is serviced by a treatment plant in Wilmington.

PROJECTED NEEDS

RESPONSE FROM QUESTIONNAIRES AND INTERVIEWS

Respondents widely recognized that the Wilcastle/Goodstay location was a valuable resource for the University and that the center should serve as a base for expanding the University's presence in the Wilmington area.

Ideas for developing the Wilcastle/Goodstay property included a hotel, an expanded conference center, and an alumni club for the Philadelphia/Wilmington area.

It was felt that in addition to the expansion of the Academy of Life Long Learning, the location should serve as the base for expanding educational programs geared towards economics, business, education, accounting, management, and information support which could serve the Wilmington business community.

PRELIMINARY
DEVELOPMENT
REQUIREMENTS

Several respondents expressed the concern that the land holdings of the University should be expanded.

To date, the only definitive proposal for the Wilcastle/Goodstay campus has been the constriction of a new facility for the Life Long Learning program. The facility is projected to contain approximately 30,000 square feet.

Because of the clientele being served by this program, it is assumed that the facility will be one, possibly two, stories. This would require from three-quarters to one-and-one half acres of land plus additional space for parking.

Preliminary investigations have located the facility south of the Wilcastle Center. However, the location is under review at this time.

SUMMARY OF
POTENTIAL
LAND/USE NEEDS

In summary, there are four major land uses which should be considered for the Wilcastle/Goodstay Campus.

LIFE LONG LEARNING CENTER - The Life Long Learning program has been the heart of the University offerings at this location. It is essential that adequate facilities be developed to continue the growth of this program.

CONTINUING EDUCATION FACILITIES - There appears to be an opportunity for the University to significantly expand its continuing education offerings to the Wilmington community. The extent of the facility needs require additional study.

CONFERENCE CENTER - Although the exact magnitude of the need for additional conference facilities has not been quantified, there does seem to be a strong opinion that this location could provide a unique opportunity for the further development of this type of University-related activity. In addition to conference space, consideration should be given to overnight accommodations and an alumni club.

RECREATION/OPEN SPACE - To support the aforementioned programs for the Wilcastle/Goodstay campus, it is desirable that open space and recreation facilities be incorporated into any future plans for the campus. Recreation facilities are a particular need for the growth of a conference center. part of the open space development for the campus should include the renovation of the formal garden.

DEVELOPMENT OPPORTUNITIES




OVERVIEW

There are significant development and redevelopment opportunities on the Wilcastle/Goodstay campus. In fact, most of the campus, with the exception of Goodstay Center, Wilcastle and the formal gardens, is potentially available for some form of new development. Roughly 29 acres (85% of the campus) could be developed. However, the existing facilities and the formal garden do break the site into several different development opportunities.

STRATEGIC LAND USE PLAN

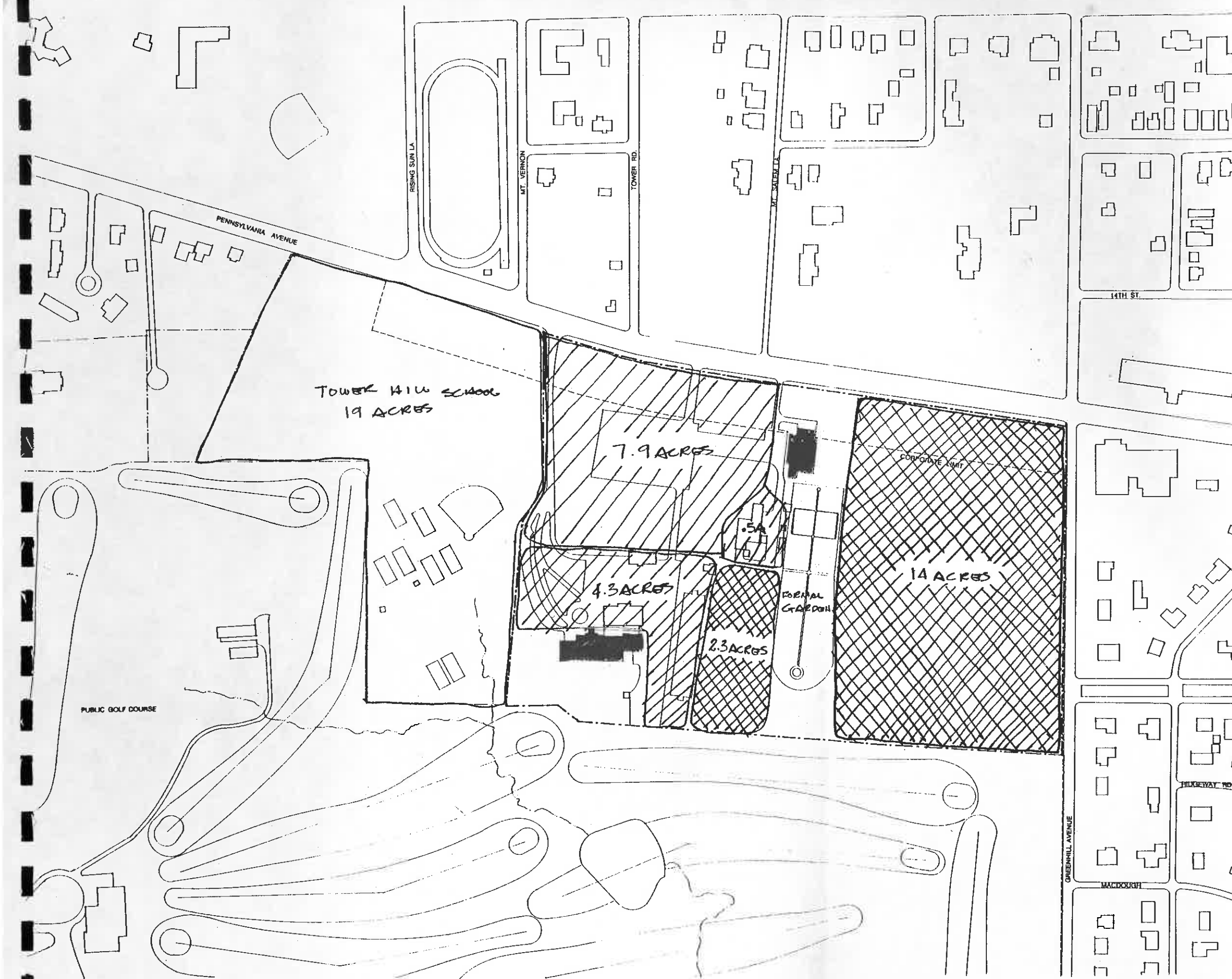
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WILCASTLE / GOODSTAY DEVELOPMENT OPPORTUNITIES

-  STRUCTURE TO BE RETAINED
-  DEVELOPMENT SITES
-  REDEVELOPMENT SITES

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DEVELOPMENT SITES

Two significant development sites are presently available. The largest of these extends east from the formal garden to Greenhill Avenue. This site contains roughly 14 acres. The site slopes gently to the southeast and could be readily developed.

To the west of the formal garden, and to the south of the Goodstay complex, there is an area containing approximately 2.3 acres which is also undeveloped. The area is essentially flat and could be easily developed.

REDEVELOPMENT SITES

The northwest quadrant of the campus, which contains parking for approximately 136 cars could easily be redeveloped for a more intensive use. This area contains approximately 7.9 acres. This redevelopment area could be expanded to the east if the existing barn structure were redeveloped and to the south if additional parking and support structures were taken for redevelopment. These areas would add .5 acre and 4.3 acres, respectively.

POTENTIAL UNIVERSITY ACTIONS

INTRODUCTION


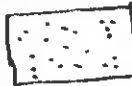


As previously indicated, the Wilcastle/Goodstay property represents a significant development opportunity for the University. The opportunity could be enhanced if part or all of the Tower Hill School property to the west of the campus becomes available. This property contains approximately 19 acres, which would expand the University's land holdings to over 53 acres. The southern portion of the Tower Hill School property, which

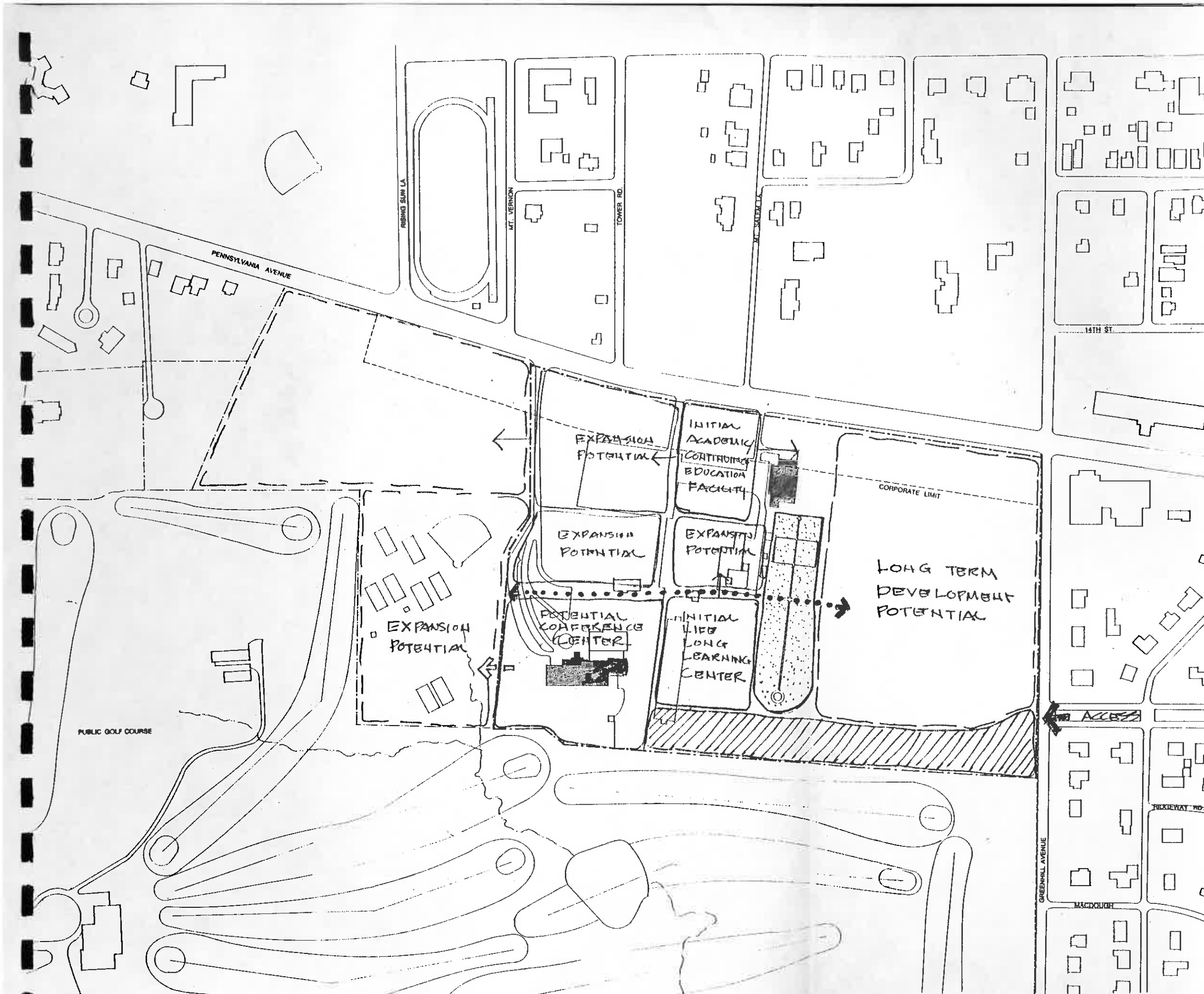
STRATEGIC LAND USE PLAN

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WILCASTLE / GOODSTAY STRATEGIC DEVELOPMENT PLAN

LEGEND

-  STRUCTURE TO BE RETAINED
-  FORMAL GARDEN TO BE RENOVATED
-  PEDESTRIAN CIRCULATION
-  OPEN SPACE AND VEHICULAR ACCESS



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primarily contains tennis courts, and athletic could be an attractive addition for a conference center/alumni club complex. The northern portion of the property, which fronts on Pennsylvania Avenue, could accommodate significant new building development.

SHORT-TERM

LIFE LONG LEARNING FACILITY - There is an immediate demand for the construction of a new facility for the Life Long Learning program. It appears that placing the facility in the undeveloped two-acre tract of land to the west of the formal garden would provide the greatest flexibility for the future expansion of this program. This location is close to the existing Life Long Learning programs. Furthermore, depending on the other site development, the facility could expand to the north or jump the formal gardens and provide additional facilities on the eastern side of the garden.

CONFERENCE CENTER - A study needs to be undertaken to refine available information concerning the potential increased demand for a conference center if new facilities were constructed. The existing Wilcastle facility seems like the logical base to expand from. This location provides a good view of the golf course to the south and would have ready access to the athletic facilities to the west, if they can be acquired from the Tower Hill School. If the Tower Hill property is acquired, expansion could occur to the west. If the property is not acquired, expansion could occur to the north.

ACADEMIC/CONTINUING EDUCATION - As previously discussed, there appears to be the potential for the University to become more actively involved in educational opportuni-

ties for the general Wilmington population and the business community in particular. The character and extent of this expanded educational role requires further analysis. In the initial phases of site development the existing facilities plus the new Life Long Learning building can probably handle the educational demand.

As the educational program expands, new facilities will be required. The central portion of the property along Pennsylvania Avenue is the logical location for the construction of a new building. This location will improve the overall campus atmosphere of the site, as well as providing expansion capability to the east and west.

CENTRAL PEDESTRIAN CORRIDOR AND VEHICULAR CIRCULATION

As the new facilities are developed on the property, a central east-west pedestrian spine should become part of the overall planning process. The spine would connect development on the eastern portion of the site with the Life Long Learning facilities and conference center on the western portion of the site. The pedestrian walkway would pass through the formal garden where the existing path occurs.

To facilitate the development of the pedestrian corridor and to provide additional access to the potential conference center and Life Long Learning facilities, an access and open space corridor should be preserved along the southern portion of the site. Access from this location could connect with Greenhill Avenue near the existing parkway which runs to the east from Greenhill.

IMPROVEMENTS TO FORMAL GARDEN - The existing "formal garden" should be rehabilitated to provide a central amenity for the property.

LONG TERM

It is desirable for the large, undeveloped eastern portion of the site to be withheld from development until a clear direction can be charted for the University's presence in the Wilmington area. If the role is expanded significantly, the property will be required for university-related functions. If the property is not needed in the future, it is a prime piece of real estate which could be available for partial or total disposition.

SECTION 5.0
POLLY DRUMMOND

5.0 POLLY DRUMMOND

INTRODUCTION

The Polly Drummond property represents a unique development opportunity in an area of increasing development pressure. Given the uncertain need for the property to accommodate University-related development, the long-term potential for disposing of the property for either public open space and/or private development needs to be carefully evaluated. However, a short-term decision does not need to be made since the value of the property should continue to increase at least until the mid-1990s.

SITE CHARACTERISTICS

SIZE AND CONFIGURATION

The University owns 508 acres of undeveloped property along Kirkwood Highway (Route 2) and Polly Drummond Hill Road. This mostly undisturbed property contrasts with residential and commercial suburban development that surrounds it. Three contiguous properties, separated by roads, form the Polly Drummond area. The central and largest tract has 309 acres. The western and eastern have 163 and 36 acres.

POLLY DRUMMOND AERIAL GOES HERE

The county road system defines the site configuration. Kirkwood Highway passes along the southern edge. Polly Drummond Hill Road, Old Coach Road and Pike Creek Road form the central region's three other boundaries. Within this area, four separate portions fronting the four defining roads belong to non-university owners. Three of these are roughly triangular in configuration. A fourth rectangular-shaped tract faces Pike Creek Road.

The western portion stretches between Polly Drummond Hill Road and Laurel Avenue. It begins north of the Roseville Park subdivision and stretches northward for nearly one-half mile. The eastern portion, located at the northeast corner of Kirkwood Highway and Pike Creek Road, forms a wedge between Pike Creek Road and Pelkin Park, a residential subdivision.

TOPOGRAPHY

One immediately recognizes Polly Drummond's natural beauty. This wooded area forms two steeply-sloped stream valleys. Pike Creek flows through this area and merges into White Clay Creek just south of Kirkwood Highway. The woods dramatize the difference between the undeveloped property and its neighbors. Slopes often exceed 15 to 25%. The difference between the highest area (250 feet) and the lowest (50 feet) indicates the changes in topography. The land rises from the southeast to the northwest.

EXISTING DEVELOPMENT

LAND USE

Wooded areas comprise roughly 68% (346 acres) of the total acreage. The rest represents clearings/tillable fields (162 acres). The areas surrounding the Provost's and Superintendent's houses account for several acres.

POLLY DRUMMOND EXISTING DEVELOPMENT/EXTERNAL CONDITIONS MAP GOES HERE.

BUILDINGS

Two University-owned houses are sited on the property. The Provost's house fronts Polly Drummond Hill Road; a superintendent's house faces Old Coach Road.

EXISTING INFRASTRUCTURE

CIRCULATION

No paved roads penetrate the property. Kirkwood Highway is a heavily-used, four-lane highway that connects Wilmington and Newark. Polly Drummond carries traffic into the residential neighborhoods north of University property. Like Old Coach Road and Pike Creek Road, Polly Drummond Hill Road is two lanes in both directions.

Both Old Coach and Pike Creek Roads are picturesque and have minimal traffic.

UTILITIES

The Polly Drummond area has little need for utility services. The two houses are served by utility mains along the streets they face. Utility mains also run parallel with Pike Creek Road.

EXTERNAL CONDITIONS

NEIGHBORING LAND USE AND ZONING

Extensive suburban development has recently occurred surrounding Polly Drummond Hill. Single family residential developments border the site's northern, eastern, southern and southwestern edges. Development in the four portions of land within the central area appears older. Mostly small, detached single family homes (zoned R-2 Agricultural and General Purpose, 1/2 acre) front Kirkwood Highway. Several small businesses operate out of converted homes. More affluent appearing homes (zoned R-2) are situated along picturesque Old Coach Road, as well as Pike Creek Road. An office park,

Drummond Plaza, forms a triangular-shaped area at the northeast corner of Kirkwood Highway and Polly Drummond Road. This occupies three low-rise office buildings.

The area between the university property west of Polly Drummond Hill Road and Middle Run Natural Area remains undeveloped. A church occupies the land directly north of the university property. Henderson Heights, a residential subdivision north of Old Coach Road is zoned for single family detached homes with a minimum lot size of 6,500 square feet. A similar zoning classification exists for the Roseville Park and Pelkin Park subdivisions.

Several types of development occurs south of Kirkwood Highway. Commercial, institutional (Shue Middle School), and townhouses all front the highway. This extensively developed area is zoned for neighborhood shopping (C-1) and roadside business (C-2).

ACCESS

Kirkwood Highway (Route 2) provides the most convenient access. The highway links Wilmington and Newark.

Polly Drummond Hill Road (Red Mill Road) and Pike Creek Road each link Route 72 with Route 4. The suburban growth along Kirkwood Highway has caused considerable traffic congestion. Although no committed projects exist for the stretch between Polly Drummond and Pike Creek Roads, New Castle County hopes that highway improvements elsewhere will alleviate demand by providing diversions and relief.

INFRASTRUCTURE

The Artesian Water Company services demand in this area. University property west of Polly Drummond, however, comes under the jurisdiction of the City of Newark. The Coastal Plain area of the County provides ground water (wells) to meet potential demand.

A treatment plant in Wilmington serves waste water for northern New Castle County. The County has determined that no capital works are needed for this part, specifically the Pike Creek area.

PROJECTED NEEDS

RESPONSE FROM QUESTIONNAIRES AND INTERVIEWS

No specific consensus regarding development of the Polly Drummond property emerged from the questionnaires and interviews. There was a general feeling that the site was too far away from the Newark Campus to be convenient and at the same time too close so as to be concerned about duplicating most Newark-based facilities. There were opinions expressed that the property should be sold. Alternatively, several respondents felt that it would be politically unwise to sell this major open space for development. The State of Delaware was identified as a possible source for acquiring the site and retaining it for open space.

Alternative uses identified for portions of the property were a golf course, a sports complex, a small conference center or guest accommodations, a multi-use fitness center, a campus for first and second year liberal arts undergraduates, or as a ecological preserve for university research.

**PRELIMINARY
DEVELOPMENT
REQUIREMENTS**

No additional preliminary programming work was undertaken for the Polly Drummond property because of the lack of any strong opinions that the property should be developed for university-related purposes.

DEVELOPMENT OPPORTUNITIES

As previously indicated, virtually all of the 508 acres of the university-owned property at Polly Drummond are undeveloped. However, roads, natural features and topography sub-divided the property.

WEST AREA

There are roughly 163 acres west of Polly Drummond Hill Road. The northern third of the site is heavily wooded with steep slopes. The central third is partially wooded with some cultivated land. The southern third is primarily cultivated. This portion of the site which adjacent to existing residential development could be readily developed. In total, approximately 60 to 100 acres could be developed easily, depending on the extent of woodland to be developed.

CENTRAL AREA





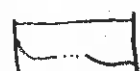
The central area, between Polly Drummond Hill Road and the Pike Creek Road contains roughly 309 acres. The northern portion of the site, containing approximately 200 acres is heavily wooded, with steep slopes and stream valleys. The remaining portions of the site, which are cultivated, could be developed. Roughly 35 acres of the cultivated land are located along Pike Creek Road. The remaining 75 acres are along Polly Drummond Hill Road. This area also has about 700 feet of frontage along Kirkwood Highway.

STRATEGIC LAND USE PLAN

UNIVERSITY
OF
DELAWARE

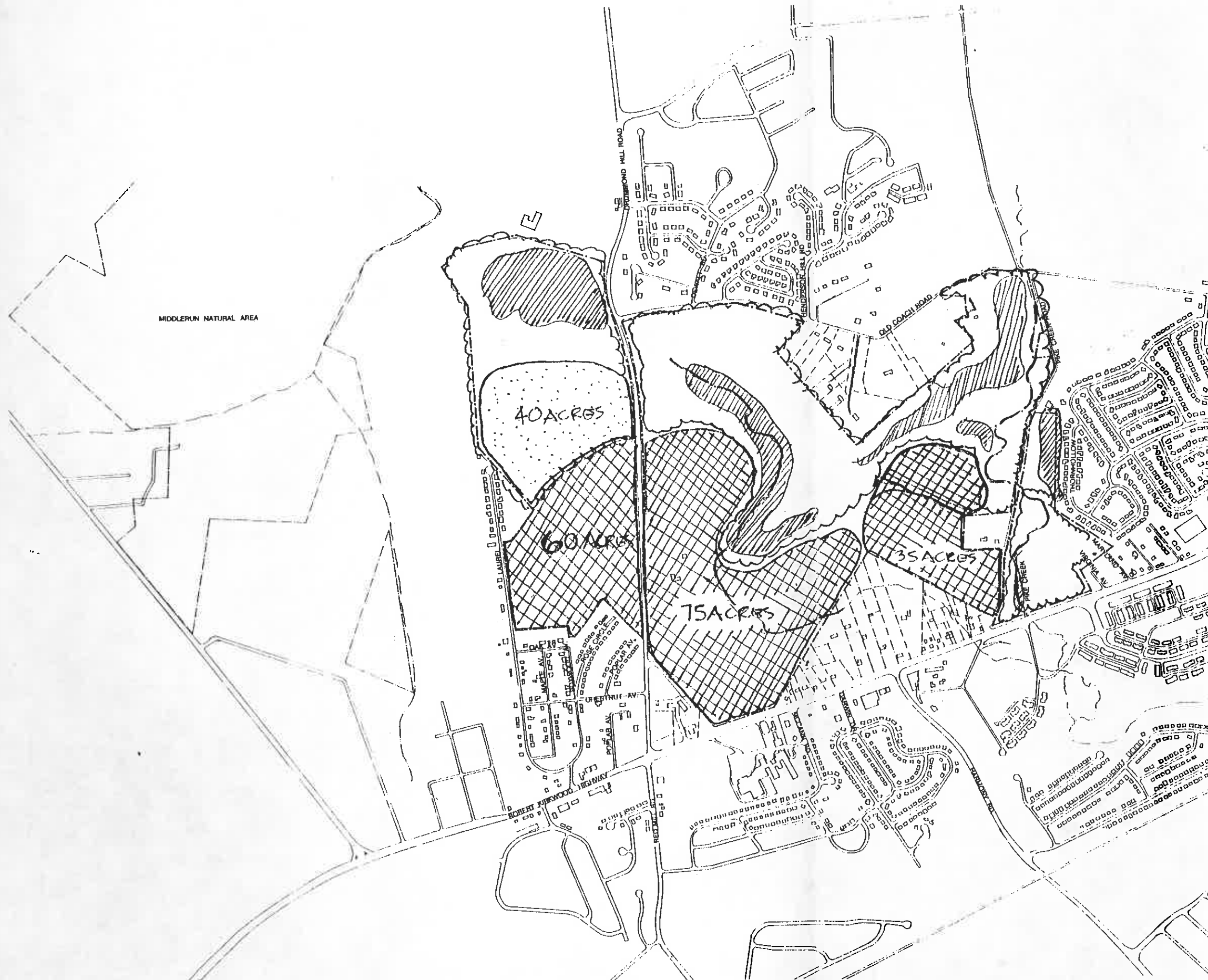
POLLY DRUMMOND DEVELOPMENT OPPORTUNITIES

LEGEND

-  POTENTIAL DEVELOPMENT AREA
-  POTENTIAL DEVELOPMENT (WOODED AREA)
-  AREA WITH STEEP SLOPES
-  HEAVILY WOODED AREA
-  STREAM

DEVELOPMENT STRATEGIES, INC.

911 Washington Avenue
St. Louis, Missouri 63101



EAST AREA

There are approximately 36 acres of land to the east of the Pike Creek Road. This site is heavily wooded, and contains a stream valley with steep slopes. The site would not be easy to develop.

SUMMARY

In summary, approximately 33% to 40% of the property could be considered developable.

TABLE 5.1
DEVELOPABLE LAND - POLLY DRUMMOND

	Developable Acres	Non- Developable Acres	Total Acres
West	60-100	103-63	163
Central	109	200	309
East	-	36	36
	169-209	339-299	508

POTENTIAL UNIVERSITY ACTIONS

SHORT TERM

There is presently no demand for university-related development of the Polly Drummond site. There is also political pressure by conservation groups to retain the wooded areas and creek valleys in their natural state. In addition, although there is development pressure in the immediate area of the Polly Drummond site, value should not be lost by retaining the Polly Drummond property for another five to ten years. Therefore, the University is in a position to retain the property until a specific university-related use can be identified or until the development pressure in the area increases even more. During this period, the University should explore opportunities to maximize the potential return on its assets.

LONG TERM

In the early to mid-1990s the University should re-evaluate the future utilization of the Polly Drummond property. If there is no new need to utilize the property for academic purposes, consideration should be given to disposing of portions of the property.

SECTION 6.0
GEORGETOWN

6.0 GEORGETOWN CAMPUS

INTRODUCTION

The existing activities carried out at the College of Agricultural Sciences Research and Educational Center are in an excellent position to respond to the agricultural needs of Southern Delaware. The Georgetown property is adequate to meet the research demand. However, acquisition of adjacent property would assure long-term flexibility in meeting new or ongoing research.

SITE CHARACTERISTICS

The College of Agricultural Sciences Research and Educational Center lies in the middle of southern Delaware. The Center epitomizes the agricultural predominance of Sussex County.

SIZE AND CONFIGURATION

Two separate tracts of land form the University's holdings. The larger tract has 310 acres. Approximately one-half mile from the tract lies 37 additional acres known as the Dill Farm.

GEORGETOWN AERIAL GOES HERE

In plan, both properties are irregular in shape. Creeks define the larger property's eastern edge. Farms and light duty roads form the property's other boundaries. An existing farmhouse and property which the University does not own splits the 37 acres into almost two distinct tracts.

NATURAL FEATURES AND TOPOGRAPHY

Fields, woods and streams are the predominant natural features. The relative flatness of the topography is evident. Approximately, a ten foot difference exists between the property's highest and lowest points.

EXISTING SITE DEVELOPMENT

LAND USE

The larger tract contains various fields for research functions along with institutional buildings. The smaller tract is entirely tillable fields. Fields and wooded areas represent the greatest share of land uses. Fields are used to produce soybeans, grains, vegetables and weeds for various agricultural research projects.

BUILDINGS

Several functions occur at the Research and Education Center. These are the Delmarva Poultry Institute, the USDA Poultry Research Lab (buildings leased by the University) and a working farm. Approximately 41 sheds contain poultry, equipment, and grain. They total 68,873 gross square feet of space. Major buildings include the following:

UNIVERSITY
OF
DELAWARE

LEGEND

RESEARCH LAND

WOODED LAND

EXISTING STRUCTURE

911 Washington Avenue
St. Louis, Missouri 63101

TABLE 6.1
LIST OF BUILDINGS - GEORGETOWN

Facility Name	Gross SF	Assignable SF	Building Use
Main Building	3,277	2,765	Housing
Servant's Quarters	630	570	Housing
Dwelling #7	1,120	952	Housing
Dwelling #1	2,233	2,055	Housing
Dwelling #6	1,302	1,240	Housing
Dwelling #4	1,457	1,355	Housing
Dwelling #3	1,105	1,045	Housing
Dwelling #8	1,232	1,159	Housing
Main Office Building	11,207	9,271	Administration
Packing House, Office & Lab	4,795	4,555	Auxiliary

The last construction occurred in 1979. Over the years, physical improvements have been made in a piecemeal manner.

PARKING

An estimated 100 parking spaces accommodate the faculty/staff and students. During the occasional large event, visitors park on the lawn.

EXISTING SITE INFRASTRUCTURE

CIRCULATION

Route 9 provides the Georgetown campus with a major transportation artery. Route 9 handles two lanes of traffic. This road splits the larger property nearly in northern and southern halves. The Delmarva Poultry Institute sits on one side of on one side of the road, the Farm and USDA Poultry Research Lab on the other. Route 446B is a light duty road that runs perpendicular to Route 9. Route 446B bisects the northern fields nearly in half. Within the University grounds are several dirt roads that connect various tracts of land.

UTILITIES

Delmarva Power Company and Delaware Electric Cooperative service the buildings. The power lines run parallel to U.S. Route 9. Wells supply water and a septic system disposes of waste.

EXTERNAL CONDITIONS

NEIGHBORING LAND USE AND ZONING

University property is surrounded by large tracts of wooded land, farms and the nearby Sussex County Vocational Technical School. These neighbors appear to coexist comfortably with the University. Five separate farms border the University. All raise crops and one farm also raises poultry. The entire area is currently zoned as AR-1 (Agricultural Residential).

ACCESS

U.S. Route 13 connects Georgetown to Dover and Wilmington in the north. Route 9 cuts across the southern portion of Delaware along a diagonal beginning in the northeast corner. Georgetown sits nearly at the midpoint of Route 9.

PROPOSED IMPROVEMENTS

The reverberations from traffic congestion during the Summer along the coastline is felt in the Georgetown area. Vacationers from Delaware and neighboring states pass through the City of Georgetown on their way to and from the beaches. Recommended improvements have been made. A report produced for the Division of Highways, Delaware Department of Transportation suggests a four-lane northern bypass of Georgetown along the Route 404/18/9 corridor. It also recommends two additional lanes between Milford and Georgetown and U.S. Route 113.

PROJECTED NEEDS

RESPONSE FROM QUESTIONNAIRES AND INTERVIEWS

The questionnaires and interviews did not produce much response regarding the Georgetown Agricultural facilities. Generally, it was felt that the experimental station was serving a useful function and that it would not be feasible to relocate the Agriculture program from Newark to Georgetown. However, there was a suggestion that before the property becomes too expensive, additional land adjacent to the Georgetown holdings should be acquired for future long-term development opportunities.

PRELIMINARY DEVELOPMENT REQUIREMENTS

No specific needs were identified for future development. Therefore, specific development requirements have not been generated.

DEVELOPMENT OPPORTUNITIES

With the exception of the approximately 55 acres of woodland, the property at Georgetown is actively being utilized for the programs of the College of Agricultural Sciences Research and Educational Centers.

POTENTIAL UNIVERSITY ACTIONS

The university-related programs are being adequately accommodated on the present Georgetown property. However, if land contiguous to the research farm becomes available, serious consideration should be given to acquiring the property to provide additional research capacity in the future. The 6-acre parcel in the center of the Dill Farm should be acquired whenever the property becomes available.

SECTION 7.0

LEWES

7.0 LEWES CAMPUS

INTRODUCTION

The Lewes property needs to be viewed from the perspective of its long-term development potential. The coastal region of Sussex County is projected to experience dynamic growth between now and the year 2010. Expansion of the Lewes Campus is difficult. Therefore, the available land needs to be carefully planned to maximize the long-term development potential.

SITE CHARACTERISTICS

SIZE AND CONFIGURATION

The property of the College of Marine Studies and associated Research Park contain approximately 424 acres. The Research Park accounts for nearly 107 acres. Fourteen additional acres are leased near Henlopen State Park and 12 acres are leased from the City of Lewes for the Bayside Lab.

In plan, the property is rather irregular in shape, its definition primarily formed by the waterways. The campus surrounds a small harbor off the Roosevelt Inlet, which empties into the Delaware Bay. The complex remains bounded on three sides by diverse waterways. The Lewes and Rehoboth Canal and Broadkill River empty into the Roosevelt Inlet. Canary Creek wraps the campus

LEWES AERIAL GOES HERE

on two sides. This creek also spills into the inlet. A residential area, New Road, and the property of Hercules, Inc. define the complex's other edges.

The canal and Broadkill River separate Beach Plum Island from the mainland. The island lies between the Bay and the campus. Access to the complex is from Pilot Town Road, which follows the canal from Lewes, and New Road, which joins the Research Park with U.S. Route 1 and Pilot Town Road.

Approximately, nine acres are sited off Sussex Drive near the center of Lewes. The Franklin C. Daiber Housing Complex occupies this area. This area is roughly a mile-and-a-half by vehicle from the college.

NATURAL FEATURES AND TOPOGRAPHY

The complex sits in an area of physical diversity and beauty. Both man-made and natural environments coexist. Fields and protected wetlands (marsh) represent the major land features with beaches and wooded areas forming less acreage.

Outside the University's borders, farms, wetlands and wooded areas predominate. The land has relatively little slope. Beginning at sea level, the land rises to 14-1/2' at its highest just outside the complex. In several areas, depressions in the earth occur.

Erosion has become a significant problem. Each year land along the harbor and Beach Plum Island is lost. Development studies ought to begin addressing this problem.

LEWES EXISTING DEVELOPMENT AND EXTERNAL CONDITIONS MAP GOES HERE

EXISTING DEVELOPMENT

LAND USE

Wetlands (132 acres/35%) compose the largest percentage of land use. The Marine Studies campus sits on approximately 90 acres. However, only 34 acres have been developed. Another 24 acres within the Research Park is wooded. The recent acquisition of a small farm has added an estimated 29 acres adjacent to the Research Park.

BUILDINGS

The campus has several operating facilities related to marine studies. They include the Henlopen Lab, Pollution Ecology Lab, the Bayside Lab, the Shellfish Lab, the Cannon and Smith Labs, and the Virden Conference Center. An area designated as a Research Park adjoins the educational campus and completes the complex.

A building program began in the mid-1970s. Cannon Lab, Smith Lab, Hooper Marine Operations Building, and the Virden Center appear in good condition. Several other laboratories functioning on campus are the Shellfish Lab, the Pollution Ecology Lab, the Henlopen Lab, and the Bayside Lab. The latter two are on property leased by the University. The following table includes major buildings on campus, their square feet and function.

STRATEGIC LAND USE PLAN

UNIVERSITY OF DELAWARE

LEWES CAMPUS DEVELOPMENT OPPORTUNITIES

LEGEND



EXISTING BUILDING
TO REMAIN



DEVELOPMENT
OPPORTUNITY



OPTIONAL REDEVELOPMENT
OPPORTUNITY



WETLANDS

DEVELOPMENT STRATEGIES, INC.

911 Washington Avenue
St. Louis, Missouri 63101



TABLE 7.1
LIST OF BUILDINGS - LEWES

Facility Name	Gross SF	Assignable SF	Building Use
Pollution Ecology Lab	7,638	1,600	Instruction
Cannon Marine Studies	42,377	25,287	Instruction
Smith Mariculture Lab	22,391	15,571	Instruction
Viriden Conference Center	4,334	3,472	Instruction
Shellfish Lab	1,600	1,360	Instruction
Bayside Lab	2,374	1,430	Instruction
Office Bungalow	680	649	Instruction
Marine-Mine Building	21,015	16,363	Instruction
Hooper Marine Ops. Bldg.	12,647	6,640	Plant Ops/SRVC
Henlopen Dorm Building	6,515	5,550	Residence Hall
Viriden Hall A	4,222	3,265	Residence Hall
Viriden Hall B	4,222	3,268	Residence Hall

Source: Office of the Provost;
University of Delaware.

In addition, there are at least seven sheds and green-houses which total 4,517 gross square feet. Housing provided on Bowman Drive and Maury Circle account for 40,961 gross square feet.

PARKING

Currently, two lots accommodate approximately 125 vehicles.

EXISTING INFRASTRUCTURE

CIRCULATION

Two roads bring traffic into the campus. Pilot Town Road runs loosely parallel to the Lewes and Rehoboth Canal. It carries one lane of traffic each way. Pilot Town Road ends just past the complex. New Road runs perpendicular to Pilot Town Road and joins State Route 1. New Road is also two lanes. Parallel to U.S. Route 9, New Road carries traffic 2-1/2 miles from Route 1 to

Lewes. Within the complex, a road connects the marine studies center with the Research Park. This artery is the primary street in the complex and provides a connection between Pilot Town Road and New Road. It crosses a small strip of marshland that separates the campus from the Research Park.

UTILITIES

Major utilities run along the street network. The complex is serviced by storm and sanitary sewers, water, gas and electric lines. The Research Park has an existing infrastructure ready for use. The sewer mains along New Road would service the Research Park. They connect with the primary main along Pilot Town Road.

EXTERNAL CONDITIONS

NEIGHBORING LAND USE AND ZONING

Existing neighborhood development appears to have little present impact on the complex. Single family residences extend along Pilot Town Road from Lewes. Residential development also extends in finger-like projections perpendicular to Pilot Town Road that end at University property. These are zoned as R-1 (Residential with a minimum lot size of 7,000 square feet) or AR-1 (Agricultural, Residential) depending whether the property lies in Lewes or the County. Residential development also occurs across the canal. Hercules, Inc. owns approximately 86 acres of vacant property that adjoins the University inland from the bay. Roughly 17 acres are potentially available for Research Park development. Wetlands form the rest of Hercules' property.

Other neighbors along Pilot Town Road are St. Peters Cemetery, Lewes Dairy, the U.S. Coast Guard and the International Science and Technology Institute. The dairy and the technology institute require an I-1 or I-2 zoning for industrial use. The land on Beach Plum Island and the property between Pilot Town Road and the canal are zoned for open space. No construction (except boat landings) occurs in this classification. The Bayside Lab, however, qualifies as an exception.

ACCESS

The University of Delaware's College of Marine Studies and Research Park lies two and a half miles northeast of Route 1. The city limits of Lewis extend along the Delaware Bay and crosses through University property on the northeastern edge of Sussex County. The campus lies a short distance between an active summer recreational area, Rehoboth Beach, and the Primehook National Wildlife Refuge. The Delaware and Maryland coastline attracts Summer vacationers from Washington, D.C.; Baltimore, Maryland; Philadelphia, Pennsylvania; and Wilmington, all within 125 miles.

PROPOSED IMPROVEMENTS

The growing popularity of the coastal area has created numerous transportation problems. Both U.S. and state highways in Sussex County inadequately accommodate the larger resort season demand. The Department of Transportation is acutely aware of the situation. A report prepared for the Division of Highways (Sussex 2005: A Program for the Future) proposes needed improvements. Among these are the following -- an additional six lanes for Route 1 between Route 16 and Rehoboth and two additional lanes between Milford and Georgetown.

While the College of Marine Studies and Research Park hardly contributes to the transportation demand in Sussex County, the users of the facilities suffer from the overall traffic congestion. No major improvements of roads or utilities are presently planned for the vicinity directly surrounding the campus.

PROJECTED NEEDS

RESPONSE FROM QUESTIONNAIRES AND INTERVIEWS

Future development of the Lewes campus evoked a variety of responses. Limited interest was shown in the development of additional major education facilities, although one respondent felt that the campus would make a good down state campus location.

Most suggestions focused on the expansion of summer programs and activities and the expanded utilization of the campus as a conference center and continuing education center, with a potential emphasis on elderly users.

With respect to the existing educational facilities at Lewes, it was felt that additional housing was needed for graduate students, additional food service, additional accommodations for visiting faculty, and expanded conference center capacity.

PRELIMINARY PROGRAM REQUIREMENTS

VIRDEN CENTER EXPANSION - Plans have been developed for an addition to the Virden Conference Center and the construction of a third residential building. However, the plans have been placed on hold pending additional evaluation of the future for the Lewes campus.

1980 MASTER PLAN - In addition to expansion of the conference facilities, a 1980 master plan proposed the addition of a Marine Biochemistry building, a Library, and a Physical Ocean Sciences Laboratory.

SUMMARY OF POTENTIAL LAND/USE NEEDS

In summary, there are three major land uses which should be considered for the Lewes campus.

EXPANSION OF COLLEGE OF MARINE STUDIES FACILITIES - This program which has been the focus of development on the Lewes campus will need space to expand in the future.

CONFERENCE CENTER - The existing conference facilities are inadequate. They need to be expanded or totally new facilities developed at a different location on the Lewes campus.

CONTINUING EDUCATION FACILITIES - The projected growth of population in the coastal portion of Sussex County and the doubling of the population in the Summer indicates an increased demand for Summer programs and cultural events. As the population increases in the region, a demand for year-round programs could be anticipated.

DEVELOPMENT OPPORTUNITIES

OVERVIEW

Although the university owns approximately 42 acres of land at Lewes, a significant portion of the property is wetlands and therefore not developable. It is estimated that roughly 167 acres are easily developable. The developable property is divided into two large areas by wetlands.

MARINE STUDIES CAMPUS

The large parcel of land occupied by the existing College of Marine Studies campus contains approximately 89 acres which are not in wetlands. However, approximately 34 acres are presently developed (Cannon Laboratory, Smith Laboratory, Virden Center, Marine Operations, Shellfish Laboratory, Pollution Ecology Laboratory, and parking). The undeveloped land is located primarily southwest of the existing development.

RESEARCH PARK PROPERTY

The proposed research park contains a total of 107 acres. Approximately 84 acres are not part of the wetlands and therefore readily developable. Recently, the University purchased the property to the south of the proposed research park along New Road. This property contains roughly 28 developable acres which could be added to the land of the research park.

POTENTIAL UNIVERSITY ACTIONS

SHORT TERM

There appears to be no demand for acquisition of additional property to accommodate the facilities which could conceivably be constructed in the next five to ten years.

One of the more immediate needs is to evaluate the size and character of the demand for improved conference facilities on the Lewes campus. Until the demand is identified, the university property adjacent to the north and south side of Pilotown Road should be reserved for a new conference center complex. This location allows the best views of the bay and would provide the greatest amenity for the conference center.

LEWES STRATEGIC DEVELOPMENT PLAN GOES HERE

Depending on the findings of the conference center study, Virden Center could be improved or converted to a housing resource.

Any new academic facilities for the College of Marine Studies should be developed to the southwest of the existing facility to provide a campus environment.

Any development in the Research Park should be kept to the east side of the entry road from New Road. This will allow the western portion of the Research Park property to be developed for an alternate use if the park has difficulty being occupied. The eastern portion of the park area could be utilized for educational or cultural facilities which are not directly associated with the College of Marine Studies and/or utilized for residential construction. Education oriented, non-residential development should begin in the portion of the site closest to the College of Marine Studies campus.

LONG TERM

In general, the University should be open to acquiring any contiguous property to the west of Pilotown Road and north of New Road. It should also be a goal to acquire the Hercules property to the north of the Research Park property.

Long-term expansion of the College of Marine Studies should continue to occur in a southwestern direction.

If the research park development cannot be marketed in the long run, the portion of the property not required for additional educational or cultural facilities could be developed for residential use. However, the Univer-

sity should carefully evaluate the academic facility requirements for non-marine studies before developing the land for residential purposes, since it appears that there will be increasing population growth in this portion of the state and a related increased demand for expanded local educational opportunities.

APPENDICES

APPENDIX A POPULATION TRENDS IN SELECTED AREAS OF DELAWARE

3.1 Total Population by County

Table 3a summarizes the growth of Delaware and its three counties--New Castle, Kent, and Sussex--between 1960 and the year 2010. The estimated and projected populations since 1980 were provided by the Delaware Population Consortium through the University of Delaware's College of Urban Affairs and Public Policy. The 1960, 1970, and 1980 figures are actual U. S. Census Bureau counts.

Between 1960 and 2010, the State of Delaware is projected to increase its population by 75.4%, from 446,300 to 811,990 (365,690 people). New Castle County's growth rate over this 50-year period is projected to be approximately 62.3% while Kent and Sussex Counties would each about double in size.

Between 1980 and 2010, Delaware would increase in size by about 36.7%, indicating that about 60% of the 50-year growth projection took place in the first 20 years. Again, New Castle County's growth rate from 1980 to 2010 would be somewhat less than the state's. Kent County's growth rate is projected at slightly higher than the state while Sussex County would increase by nearly two-thirds between 1980 and 2010.

These projections show that New Castle County's growth will cause it to gradually decline as a proportion of the state, yet still maintain nearly two-thirds of all Delaware's residents. Both Kent