UNIVERSITY of ARKANSAS
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Campus Master Plan

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Introduction

For the past year, the University of Arkansas, led by the University's Master Planning Committee, has been engaged in the process of developing a strategic vision for the campus. The multi-phased effort provided an opportunity for a wide range of constituent groups to think strategically about the long-term vision for growth and change at the University.

From the outset of the master planning process, the Master Plan Committee recognized that the institution faces many short- and long-term planning decisions in accommodating a projected enrollment of 20,000 students by the year 2010. As the University of Arkansas positions itself to become a leading undergraduate and research institution, the administration will need an effective planning tool to guide physical planning and decision making. This master plan is intended to provide a logical framework for growth that reflects the institution's educational mission, enhances the character of the campus and preserves the heritage of the University.

The University of Arkansas will encounter a myriad of unpredictable cycles of growth, change and stability in the development of the campus in the years to come. To that end, the master plan offers a degree of flexibility even as it provides a structured, overall framework for efficient, high-quality development of Arkansas' flagship institution. The plan needs to be a dynamic tool that will be refined and updated from time to time. The master plan includes a set of policy guidelines for design and development that will enable the University to undertake a disciplined overview of projects to ensure that they will contribute to a unified, quality campus environment.

The continuing growth of the northwest Arkansas region will place increasing pressure on finite land resources both within the built-up area of Fayetteville as well as the surrounding rural environment. The need to conserve land resources and manage growth will be critical as the University encounters unforeseen changes in the 21st century. The University has reached a point where it must be diligent in managing physical growth and change if the integrity of its own land and environmental resources is to be sustained.

The Campus Today

2.1 Land Use

The current organization of land and building uses reflects the early planning for the University and subsequent expansion to the west and south.

General administrative functions are concentrated predominantly in two buildings on campus: the Administration Building on the south side of Maple Street just west of the academic core area; the Administrative Services Building on the west side of Razorback Road, across from the Bud Walton Arena.

Academic functions (other than research) are located mainly in the core of the campus between Maple Street and Dickson Street. Almost all are contained within two groups, one north and one south of the original linear core now containing Old Main, Vol Walker Hall, Mullins Library and the Arkansas Union. Expansion of the University since World War II, however, has pushed a few academic functions to the south side of Dickson Street (Business Administration, Mechanical Engineering) as well as to the area north of Maple Street and west of Garland Avenue (Animal Science, Poultry Science).

Research facilities are associated with the colleges of Agriculture, Engineering, and Arts and Sciences. Those associated with Agriculture are located in the northern section of the academic core (Alternative Pest Control), northwest of the core (Animal Science, Poultry Science) and at the Arkansas Agricultural Research and Extension Center located along Garland Avenue, a mile north of campus. Engineering and Science research facilities are located among the southern group of academic buildings both north and south of Dickson Street.

Athletic and recreational functions are all located in the low, flat area west of the academic core between Razorback Road and Stadium Drive. The major facilities are separated from the rest of the campus by the 75- to 100-foot grade change east of Stadium Drive, and are separated from one another by large surface parking lots.

University residential functions are concentrated in five identifiable clusters, four of which are served by individual dining facilities; the fifth cluster is comprised of apartment-style married student housing. The most central and populous cluster is that around the intersection of Dickson Street and Garland Avenue, surrounding Brough Commons. The others are in the northwest of campus and in the far southwest, immediately north and south of Bud Walton Arena.

Fraternity and sorority houses are located primarily along the north side of Maple Street, on the east side of Arkansas Avenue, and on the hill along the east side of Stadium Drive.

University-related student service functions are concentrated at the western end of the academic core (Arkansas Union, Hunt Hall) while religious centers serving students are scattered throughout the neighborhood north of Maple Street.

2.2 Open Space Character and Pedestrian Circulation

General Campus Organization

The University of Arkansas campus is situated on the crest of a hill. The campus is inwardly focused, with very few distant views from the campus grounds. The topography of the hilltop location is not reflected in the layout of the buildings or pedestrian walks within the campus core. The major walks run east/west along the edges of buildings forming the major campus axis. A major north/south pedestrian plaza is located between Vol Walker Hall and Old Main along the former Campus Drive.

There is no apparent hierarchy or attempt to influence pedestrian flows by organizing walks by size or material, or by definition with tree plantings or lighting placement. Rather, walks other than those on the grid tend to be reflections of use patterns, which have changed over the years with the construction of buildings and parking lots. The east/west walks in the campus core are "Senior Walks," a tradition on the campus which will require additional walk surface in the future. Existing Senior Walks are considered "sacred" and will not be considered for relocation without strong justification.

The major topographic obstruction to campus access is the hillside that runs from the south end of the Business Building, past the west side of the Student Union and Administration Building, ending in the area of the Poultry Science Building and Student Health Center. This slope acts as a division between the Athletic Fields and the Academic Campus. It also creates an obstacle to pedestrian and vehicular circulation between the academic campus and the fraternities, some dorms and the parking area at the north end of Razorback Stadium.

The overall appearance of the campus landscape is a naturalistic planting of large, deciduous trees. Several of the tree varieties on campus, including pin oaks, bald cypress, and spruce, have descending branching patterns, making them effective as screen plantings, but not lending themselves to development of vistas within spaces. Shrub plantings are generally confined to building foundation and entry plantings. Many of those entry plantings are evergreen junipers, and most are old and have become overgrown. This has created a situation where building entries have become constrained, rather than framed. The potential security problem of these becoming hiding places also exists. All shrub plantings should be reviewed for effectiveness, with consideration given to removing unnecessary shrub plantings.

Although the academic area, and several of the residential areas of the campus are along the ridge of a hill, the building placement has occurred in such a way as to block the views from the campus core. The majority of views, with few exceptions, are limited to the immediate area of the campus. Because the campus has developed with an inward focus, the spaces created by the placement of the buildings become very important. Many complaints were voiced about the appearance of the campus architecture in preliminary master plan meetings. Because the architecture is an existing constraint, and buildings cannot be

replaced, the development of a consistency in the quality of outdoor spaces and site amenities should be stressed.

Major Campus Open Spaces

Front Lawn of Old Main

The lawn area on the east side of Old Main is the most recognizable open space on campus. Because of the reorientation of campus over time, the space is no longer heavily used. This area contains some of the largest trees on campus, and a large open lawn area. Walkways hint at the beginning of the axis through campus. The mature trees provide a beautiful base for distant views of the Old Main towers, looking toward campus. They do, however, limit the on-campus vistas to Old Main and other buildings.

Union Plaza

The plaza area located between the Student Union and the Library is the most visible landscaped open space on campus. The space is divided into the upper Library entrance, a raised area of white aggregate paving, and the lower brick paved area with turf and pine-covered berms. The Library entry is difficult to access because of the steps located on three sides of the plaza. The planters along the face of the Library contain a row of Crabapples, which drop fruit and do not do well in the reflected heat of the west-facing plaza. The pine planting on the berms in the center of the plaza is a non-conforming plant selection. An oak planting along the north and south sides of the lower plaza is effective in enclosing the space, while the Library, and the Student Union on the east and west ends, respectively, contain the space. Openings to the southwest and northwest corners of the plaza allow the space to extend into Garland Avenue.

Old Main Memorial Plaza

This space located behind Old Main and in front of Vol Walker Hall provides a major north/south pedestrian link through campus. The space was mentioned several times in preliminary meetings as being one of the nicest spaces on campus. Its comprehensive design of planting, lighting, and paving, provides a space which is well defined and uniquely complete on the campus.

The smaller spaces along the sides of Vol Walker and the future site of the Fulbright Fountain in front of Vol Walker function to a lesser degree for circulation, and are among the most heavily used passive areas on campus.

Greek Theater

The Greek Theater is one of the early outdoor spaces on the campus with a designed use. The amphitheater is located in a natural bowl-shaped area at the upper end of a valley running from the south central portion of campus. A row of large, deciduous trees has been planted along the south side of the site aligning with Dickson Street. Other deciduous trees are placed in a naturalistic arrangement throughout the site. The most noticeable feature of the planting in the Theater area is the formal row of large evergreen trees planted along a radius forming the north and west backdrops to the seating area.

North of Razorback Stadium

The hillside to the north of Razorback Stadium was mentioned several times in preliminary campus meetings as the proposed site of a campus Arboretum. A natural drainage swale has been improved with the installation of large boulders, providing the base for the future development of a planting scheme, circulation and installation of site furnishings. Although no direct circulation is provided into this space, it is easily accessible from the area of the Poultry Science Center, the Student Health Center, or from the Razorback Stadium parking lot. This site, which has a medium slope to the south, provides beautiful views of the hills beyond Razorback Stadium.

Carlson Terrace
This open space currently has a semi-private appearance in serving residents of the facility. The space has recently changed with the addition of Bud Walton Arena and the large parking lot to the south. The open space surrounded by buildings is now bisected by a major walk that is heavily used by both football and basketball crowds. This has compromised the semi-private nature of the space for residents of these apartments. A natural stream flows from northwest to southeast through the site enhancing the natural beauty of the area.

Lighting
The campus lighting appears to have developed in a building-by-building manner. There is one predominant fixture type that is used in the campus core pedestrian area. There are also six other types of pedestrian level fixtures, and at least three types of parking lot fixtures. This does not include fixtures attached directly to buildings.

The lighting is generally effective, adequately illuminating building entries, parking lots, and pathways across campus. However, the dominant method of lighting the campus is not directly related to walkway placement. With inconsistent vegetation size, lighting patterns are constantly changing, providing a sense that the light levels along some of the paths are low, as users emerge from more brightly lit areas. If the lights were placed for the purpose of lighting the walks, a more consistent and comfortable light level could be maintained. Portions of the campus are uncomfortably dark, however they are not areas that would require evening use.

2.3 Building Assessment

Educational and General Purpose Buildings
The University has 5 million square feet of educational and general purpose space in some 87 buildings with an average age of a square foot of 34 years per the 1997 Campus Space Use Inventory from the Physical Plant Department. Adjusted for major renovation, the age averages 25 years. The historical peak in construction of educational and general buildings was in the 1960s, followed by the 1950s, whether measured in number of buildings or square footage. Beyond quantity and age, most of these buildings remain solid structures and many have historic or cultural value important to the character and heritage of the University of Arkansas.

This existing inventory will continue to serve the bulk of University programs, although the time when much of this building stock requires major investment to continue effective service is either past or fast approaching. The University's 1996 Facilities Audit Program and needs identified through the capital funding request process confirm this. Additionally, advances in technology and learning approaches require almost every building to be outfitted to meet today's expectations.

During the course of this master plan, ten educational and general purpose structures were identified for a general assessment of conditions as determinants of the plan. These were buildings identified as candidates for action because of condition, site utilization or questions of potential reuse. This summarizes assessments for these ten buildings. It is important to point out that recommendations for action are separate from this summary of assessments. Many other buildings were studied in less detail through observation and using available data.

- Agricultural Annex. (Built 1905, 14,375 sf) A small, historic building in poor condition is located on a site that would be better suited for future expansion. The building is not ADA accessible and fire egress is inadequate. The building is heated by steam radiator; offices are cooled by window units; while the computer lab is cooled by chilled water and fan-coil units

- Animal Science. (Built 1956, 1964, 75,375 sf) Needs major renovation but this will be accomplished in the near term. Detailed assessment not relevant.

- Army ROTC. (Built 1924, 13,496 sf) This is a small building that occupies important street frontage with architecture that fails to contribute to desired campus image. While there are steam radiators and unit heaters, there is no cooling except individual units in offices. The top floor of Army ROTC is not ADA accessible.

- Carnall Hall. (Built 1905, 37,147 sf) Historically and culturally, this building is important but its physical condition is seriously deteriorated. Moreover, the site on which the building is located is highly visible and important for the overall image of the campus. The north facade of Carnall Hall is unattractive.

- Chemistry Building. (Built 1934, 72,696 sf) This building is important architecturally in defining the historic axis on the south side of Vol Walker. However, the building is in need of a major renovation. Access for disabled is provided via bridges from Chemistry Research, however the top floor is not accessible. There are a number of fire egress deficiencies due to open stair shafts. While there are chilled water lines in the corridors, they are not connected to each room. The fume hood exhaust ducting is inadequate.

- Geology. (Built 1942, 6,203 sf) This is a small building of no particular merit except that it appears to serve the custodial services function (its new use) reasonably well.

- Leflar Law Center/Waterman Hall. (Built 1951, 1974, 1980, 1984, 73,876 sf) This building is made up of a series of additions which have been made over the life of its use. No structural problems exist, however, there are serious problems associated with heating and cooling in the building.

- Peabody Hall. (Built 1913, 26,971 sf) This building has many historic attributes, however, it is in need of a major upgrade. Most significant concerns include fire safety egress, ADA accessibility, energy conservation, mechanical, plumbing and electrical improvements, open stair shafts and through-floor air transfer grilles.

- Student Development. (Built 1905, 12,369 sf) A small-footprint building on important site has some historic value but little architectural merit. The overall building condition is poor and it will be difficult to adapt for future uses. The mechanical, electrical and plumbing systems are antiquated and structural movement is visible.

- University Museum. (Built 1936, renovated 1986, 40,587 sf) Not a proper home for a university museum due to lack of parking, shortage of space, and absence of cooling or humidity control. There are steam air handlers for large spaces with radiators in basement and a tunnel system brings chilled water through the building; however, the chilled water is not connected to a cooling system in this building.

Residence Halls/Dining Halls

There are also a million square feet of residential space plus the fraternity and sorority houses. The average age of a square foot of University residence hall is 39 years, or adjusted for major renovation, 29 years. Three of the oldest residence halls with ideal central locations have been or are being renovated with the result being well received by students even though privacy is still not provided. The configuration and type of construction of most of the remaining dorms also precludes cost-effective conversion to suite-style privacy, but they are generally suitable to remain as dorms.

Because of the early recognition that the quality and quantity of on-campus housing would be a critical master plan element, an assessment was made of each different residence hall design. Two dining halls or commons were also assessed as was a vacant sorority house. Occupancy indicated is for fall 1997.

- Brough Commons (Probably built in 1964, 38,800 sf) In reasonably good condition except roof. Scheduled for major renovation 1998. Good location.

- Delta Gamma House, a.k.a. Phi Mu (Built in two phases of unknown date, vacant sorority house) Significant life safety issues to be addressed but has

two rated fire stairs. Needs electrical and plumbing upgrade. No cooling. Kitchen has been gutted. Older front section has had structural movement.

- Gregson Hall (Built 1948, renovated 1992, 102 br - 200 beds - 87% occupancy) Good condition with 2-pipe HVAC, data connections in rooms. No privacy but popular due to ideal location and historic appeal.

- Holcombe Hall (Built 1948, renovated 1992, 86 br-144 beds - 88% occupancy) Good condition, 2-pipe HVAC, data connections in rooms. No privacy but popular due to location and historic appeal.

- Fulbright Dining Hall (Probably built early 1960's, approx. 38,000 sf) Cooling is being added. Large single pane glass makes it energy inefficient. Remote from campus core.

- Fulbright Hall (Built 1959, vacant) Poor condition. No cooling. Plans developed to renovate for privacy, but cost appears comparable to developing new housing with greater appeal to the market. Remote from campus core.

- Futrall Hall (Built 1962, 110 br - 110 beds-91% occupancy) Needs major renovation. Has 2-pipe HVAC; mildew problems. Has computer lab. Lacks elevator. No particular architectural character but in demand. Could not convert to suite-type privacy easily. Kitchen is abandoned.

- Gibson Hall (Built 1936, to be renovated 1998) 55 br - 94 beds - 99% occupancy) Assessment ranking based on current condition. Already very popular; expect it to be exceptional after renovation due to historic character, great location, HVAC and data connections in rooms.

- Gladson-Ripley Hall (Built 1954, 51 br-100 beds-76% occupancy) Poor condition with no cooling. Impractical to upgrade and unattractive building. Buchanan-Droke (built 1954, 47 br - 92 beds - 78% occupancy) is analogous.

- Humphrey's Hall (Built 1961, 224 br - 440 beds, 91% occupancy) No air conditioning. Very high demand apparently based on being the hall for women who wish to be pledged. Overly prominent on skyline and difficult to develop a sense of community due to number of beds and high rise configuration. Could be adapted to somewhat greater privacy with a loss of beds. Good location. Yocum Hall (built 1963, 273 br-536 beds-83%) is analogous except it has HVAC and male occupants.

- Pomfret Hall (Built 1967, 415 br - 809 beds - 85% occupancy) Fair condition but suffers from vandalism. Has its own cooling plant with 2-pipe fan-coil units in each room. Location remote from campus community. Includes its own dining hall, fitness center and computer resource area.

- Reid Hall (Built 1966, 235 br - 455 beds - 78% occupancy) Assessment was actually done on Hotz Hall, now being converted to offices, but Reid is analogous. Has 2-pipe HVAC with unit ventilators in each room. Needs new roof. Remote from campus core. Not cost effective to convert to greater privacy. Conversion to offices in Hotz appears reasonably successful.

- Walton Hall (Built 1956, 138 br-128 beds - 98% occupancy) Room layout allows for privacy. Each room has 4-pipe HVAC fan/coil units. Has mildew problems. Interior reveals vandalism. Has tutoring and computer resource areas. Kitchen is abandoned.

2.4 Circulation and Parking

Regional and Local Vehicular Access
The campus is integrated into the Fayetteville network of arterial, collector and local streets. As a result, a significant portion of traffic passing through or adjacent to the campus is not University-related. This, coupled with poor intersection signalization, generates problematic pedestrian/vehicle conflict near the core of the campus, especially near the intersection of Dickson Street and Ozark Avenue and during class-change times. This concern is sufficiently serious to have prompted the University to examine the possibility of constructing an elevated pedestrian walkway over Dickson Street in this area.

Maple Street and Dickson Street are principal local roadways that connect the University to downtown Fayetteville, and are the traditional gateway routes into the University from the east. Both streets provide one travel lane in each direction. Average daily traffic volumes for Maple Street, taken in 1996 at points just east of Arkansas Avenue and west of Garland Avenue, were 5,900 and 11,000, respectively. The 1996 count for Dickson Street taken just east of Arkansas Avenue was 11,000 (source: Arkansas Highway and Transportation Department).

Garland Avenue passes through the entire campus, and links it north to residential areas, the Agricultural Research and Extension Center, and two different access points to US 71: one via Garland Avenue to the north, and another via Weddington Drive to the west. North of Dickson Street, Garland Avenue provides one travel lane in each direction, with left-turn lanes at Maple Street, plus a southbound bus loading area alongside the section beneath the plaza by the Arkansas Union. South of Dickson Street, Garland becomes a narrow one-way (southbound) drive connecting parking lots and service areas south to Stadium Drive. Average daily traffic counts for Garland Avenue at points north of campus are 12,000 and 13,000 (source: Arkansas Highway and Transportation Department 1996 figures). Currently, however, due to the construction of the Intermodal Transit Facility, Garland Avenue between Dickson and Maple Streets is closed to through-traffic.

Arkansas Avenue forms the eastern edge of campus and is an important connection between Dickson Street and Maple Street for cars avoiding the

campus interior. The avenue is divided by a planted median, providing a driving lane and a parking lane in each direction.

Forming the western edge of central campus, Razorback Road runs alongside the major athletic facilities providing one travel lane in each direction. From the northern areas of campus, Razorback Road, coupled with West 6th Street, provides the most direct access to US 71. Average daily traffic counts at points just north of West 6th Street and just north of Maple Street were 9,500 and 4,200, respectively.

The southernmost edge of campus is bound by West 6th Street which links US 71 and US 62 to the west, the University, and Arkansas State Route 16 to the east.

Area Transportation Projects

The 2020 Constrained Regional Transportation Plan for Metropolitan Northwest Arkansas identifies several potential transportation improvements in the immediate area.

- Relocation of US Highway 412 to a bypass route north of Springdale. The new alignment, north of the current route, would include a spur to the new regional airport now under construction.
- The widening of North Street between Gregg Avenue and Mission Boulevard from two to four lanes.
- The widening of Arkansas Highway 16 between US 71 and North Double Springs Road from two to four lanes.
- The widening of Garland Avenue and Arkansas Highway 112 between North Street and US 71 from two to four lanes.

The Arkansas State Highway Department has identified the following improvements for roadways around the campus:

- Completion of construction of four-lane Razorback Road Extension (Arkansas Highway 112) between 15th Street and Cato Springs Road.
- Potential but currently unplanned improvement of Razorback Road (Arkansas Highway 112) between 15th Street and 6th Street from two lanes to four. This would complete a principal arterial link between the southern edge of the University to US Highway 71.
- Currently under construction, a four-lane section of Weddington Drive (Arkansas Highway 112 Spur) between US 71 and Garland Avenue.
- Potential but currently unprogrammed widening of Garland Avenue (Arkansas Highway 112) between North Street and Maple Avenue. This would complete a principal arterial link via Garland Avenue and Weddington Drive between US 71 and the northern edge of the University.

Project identified by the City of Fayetteville:

- Planned and programmed upgrade of Cleveland Street between Garland Avenue and Gregg Avenue to a collector street.

Internal Campus Circulation

Vehicular circulation within the campus is accommodated by major city streets and a network of smaller city streets and university driveways and alleys.

As discussed above, Dickson, Garland and, to some degree, Maple, all pass through campus, creating significant vehicle/pedestrian conflict. Garland passes through the entire length of the campus as a major street from the north, passing under the Arkansas Union, and continuing south of Dickson Street as a narrow one-way (southbound) drive connecting parking lots and service areas south to Stadium Drive.

Between Dickson and Maple Streets, vehicular access is limited to service drives, driveways to a small number of reserved parking spaces, and a short extension of Ozark Avenue that terminates at the Chemistry Laboratory Building.

Parking

The University of Arkansas campus currently contains 8,897 parking spaces for its students, employees, and visitors. In 1999, the completion of the Intermodal Transit Facility will add another 600 spaces. Of these, approximately 350 will be metered and 250 permitted for both students and faculty. Existing spaces are divided into several categories by type of user as well as by level of convenience. A variety of permits issued by the University entitles holders to park in overlapping selections of lots. The campus's parking spaces are divided into the following categories:

- Reserved Faculty/Staff Spaces: Available only to holders of Reserved Faculty/Staff permits matched by zone. There are 753 Reserved Faculty/Staff spaces, most of them adjacent to campus buildings.

- Resident Reserved Spaces: Available only to holders of Resident Reserved Permits matched by zone. There are 1,278 Resident Reserved spaces located in lots near and adjacent to residence halls.

- Faculty/Staff Spaces: Available to holders of all Reserved and unreserved Faculty/Staff permits. There are 1,505 Faculty/Staff spaces in lots located throughout the periphery of the campus

- On Campus Spaces: Available to holders of all Reserved and unreserved Faculty/Staff permits, Resident Reserved permits, and On Campus Student permits. There are 713 On-Campus spaces located primarily just east of the Business Administration Building and east of Hotz Hall.

- Off-Campus Spaces: Available to holders of Reserved and unreserved Faculty/Staff, Resident Reserved, On-Campus Student and Off-Campus Student permits. There are 2,210 Off-Campus spaces located in lots west of Razorback Road, north of Maple Street, and in the lot just north of Razorback Stadium.

- Commuter Spaces: Available to holders of Commuter permits and all other permits. These are located in a 219-space lot south of the softball stadium along Meadow Street (lot 67) and in a 1,413-space lot south of Carlson Terrace (lot 56), served by the Green Line bus of Razorback Transit. Lot 56,

the largest and most remote on-campus, only fills to 40% of capacity during normal operation.

- One-hundred fifty-four (154) spaces reserved for the disabled are distributed throughout the campus in both Reserved and Unreserved lots. Disabled Faculty/Staff pay $215 for Reserved Permits, and Disabled Students pay $48.

- Two-hundred eighty-eight (288) parking meters are located along Maple Street and in a few parking lots. 14 of the metered spaces are reserved for visitors.

Visitors must either park and pay the posted fee in a metered space or obtain a Temporary Parking permit from the Transit and Parking Department. A Temporary permit substitutes for payment at all meters and is valid in lots designated as Faculty/Staff (unreserved), On-Campus, Off-Campus, or Commuter.

Transit

The University of Arkansas is well served by Razorback Transit, a free shuttle bus system provided for the University community and the general public. Razorback Transit is maintained by the state (using federal transit authority grants) as the principal public transit provider for the City of Fayetteville. Seven routes connect residence halls, commuter parking lots, off-campus housing, and area retail destinations to the center of campus. All ridership data was provided by the UA Transit and Parking Department.

- The "Red Route" links the campus center to downtown Fayetteville to the east, the Northwest Arkansas Mall to the north, and major institutions, and retail centers in between. The bus travels the hour-and 7-minute-long round trip seven times each regular-service day. Annual ridership measured over the 1996-97 school year and the preceding summer was just over 40,000.

- The "Orange Route" is a loop through the adjacent residential area to the southeast along Locust Street, Center Street, Hill Avenue, Stone Street and Duncan Street, passing through campus on Dickson Street. Scheduled headway is 12 minutes. Annual ridership (measured over the 1996-97 school year and the preceding summer) was almost 58,000.

- The "Tan Route" connects the Arkansas Union north via Garland Avenue to a loop using Weddington Drive, (past US 71), Porter Road, Deane Street and Mount Comfort Road, passing several apartment complexes. The bus travels the 30-minute route twice an hour. Ridership last year was just over 67,000

- The "Gray Route" is a clockwise loop running every twelve minutes around the western half of the campus. The route uses Garland Avenue, Meadow Street, Razorback Road and Cleveland Street. Last year's ridership was 141,478.

- The “Green Route” also loops around the western portion of campus, but reaches as far south as parking lot 56 and Carlson Terrace and does not go north of Maple Street. With a scheduled headway of 6 minutes, ridership for the Green Route was the highest of the seven routes at 446,391.

- The “Brown Route” is a loop around the eastern half of the campus using Dickson Street, Garland Avenue, Maple, Street, and West Avenue. Scheduled headway is 7 minutes during peak periods, 15 minutes otherwise. Total ridership last year was 202,489.

- The “Blue Route” connects central campus to the residential corridors of Garland Avenue and Leverett Street, looping north to Mel-Mar Drive and the Arkansas Agricultural Research and Extension Center, every 7 minutes. Last year’s ridership was 396,253.

Total ridership for Razorback Transit for the year July, 1996 through June 1997 was 1,372,589, negligibly less than that for the previous year. From month to month, September and October showed the highest ridership each of the last two years, at between 190,000 and 202,000, while the summer months showed the lowest ridership at between 15,000 and 46,000 each month. The Regional Transportation Plan for Metropolitan Northwest Arkansas projects that annual ridership on Razorback Transit will increase to over 1,670,000 in the year 2000.

Currently under construction, the Intermodal Facility will have a significant impact on the transit system by providing an identifiable hub to area transit and improving the environment for transit users. The new facility will consist of a 600-space parking structure built into the hill alongside the Arkansas Union, topped by a large bus-staging area at grade with Garland Avenue. The facility will be equipped with a passenger waiting area and related services, and is expected to attract carriers other than Razorback Transit to the UA campus.

2.5 Community Context

The character of the community surrounding the University of Arkansas is defined in part by its diversity. Some of the most identifiable neighborhoods that surround the campus include:

Dickson Street, an area where students have celebrated and hung out for decades. It is also where a partnership of the city, University and private interests created the Walton Arts Center in the early 90s, a project that not only has enriched the cultural life of the region, but brought a new clientele to the shops and restaurants along the street. Although much has been accomplished in the last few years along Dickson Street, the potential for public space improvement, further renovation and infill of vacant spaces is considerable.

The neighborhood west of University Avenue was, for many years, a neighborhood of single-family residences defined in part by the beautiful grounds of Evergreen Cemetery, now on the National Register of Historic Places. The

character of the neighborhood today, however, is defined more by high-occupancy housing in generally poor condition. Several students may rent one house, have more vehicles than will fit in the drive, and have little regard for upkeep of the property.

Immediately south of the campus is a residential neighborhood of varying quality but made visually interesting by the rolling topography. President and Mrs. Clinton's first home is here on California Street. Several of the residences near Bud Walton Arena invite event parking in their yards, which has damaged the landscape. The topography and curving streets also yield dangerous intersections, although Center Street is an important east/west connector.

Sixth Street west of Razorback Road is uncontrolled visual chaos of strip commercial with numerous fast food establishments. South of Sixth is primarily industrial use.

University Heights lies west of campus beyond a ragged campus edge. It includes very attractive homes with great views and undeveloped sloping hillsides. Although the neighborhood is blocked from easy campus access by the athletic and recreational campus development and steep topography, portions do suffer from traffic coming to campus from the north and west along Sang Avenue and connecting streets.

No other neighborhood in Fayetteville has been affected so directly and indirectly by the University as that north of Maple Street between Garland Avenue and the railroad tracks. This neighborhood has been seriously impacted by the University's land acquisitions. While these acquisitions may prove farsighted, they have negatively affected both the land ownership and land use pattern in the neighborhood, attracting developers and landlords who are not interested in the long-term viability and character of the neighborhood.

Wilson Park is an attractive older neighborhood with an enjoyable park at its core. The railroad and a creek tend to separate it from the campus, but the neighborhood is affected by through-traffic.

Campus Gateways

Historical Arrival

Prior to the bypass days, those coming to Fayetteville would generally arrive by the original US 71, now US 71 Business, whether coming from north or south. From either direction, it was obvious when one reached the downtown because of the prominent hilltop with its County Courthouse and the view of other historic structures. In those days, Dickson Street was the primary route to the campus, especially in the early years when the train depot was active. Gradually, the campus arrival has shifted west to either Garland Avenue from the north or Razorback Road from the south.

New Influences

Three events further influence future arrival to the campus and to Fayetteville. First, the extension of Razorback Road south to connect to AR 265 at the US 71 opens a new direct route to the west side of the campus. Second, when US 540

opens in 1999, it will provide freeway access south from IH 40, and the AR 265 exit is the first opportunity to reach campus and the city. Third, when the new Northwest Arkansas Regional Airport opens by 1999, it is expected to significantly reduce commercial air traffic at the Fayetteville Municipal Airport. This will shift many arrivals currently using routes from the south to US 71 from the north. It is unclear which exit visitors will select to reach the University, but their choices may be influenced by signage or some form of University identification. The best choices are either AR 112/Garland Avenue through the Arkansas Agricultural Research and Extension Center or Weddington Drive to Garland Avenue.

Visual Quality

Many find it a challenge to identify a reasonably attractive route when bringing a visitor either to campus or to Fayetteville. This is not an issue to be taken lightly when one hopes to give the visitor, potential student or potential faculty member, a positive first impression of the community and the campus. Few who are sensitive to such would elect US 71 Business or Sixth Street. From the south, the Razorback Road extension to the US 71 is relatively attractive, with surrounding green space and views of Old Main. Unfortunately, this roadway was built as five lanes, inviting strip commercial development on adjoining land. Both of the north connections to US 71 are visually satisfactory today. The widening of Weddington Drive to four lanes is proceeding and quality residences and associated landscape and topography add appeal to this route. The AR 112/Garland interchange is confusing, but the drive through the Agriculture Research and Extension Center has potential to be even more attractive than it is now. Existing development between this campus and the main campus consists primarily of small houses and apartments until the Weddington Road intersection commercial development. There are plans by the State eventually to widen Garland Avenue to five lanes, the section between Weddington and Maple Street already in design.

2.6 Steam, Chilled Water, Electricity, Natural Gas and Communications Systems

Steam System

The University operates a central steam generator plant near the intersection of Dickson Street and Harmon Avenue. Steam is used throughout campus to heat the buildings and provide power for the steamed turbine chiller in the north part of the campus. Steam is delivered from the plant at 120 psig and is delivered throughout campus through a series of utility tunnels and pipe conduits. It serves buildings from Pomfret Hall at the southwest, to Reid Hall to the northwest, to Carnall Hall at the northeast, and to the Physics Building at the southeast corner of the core campus. The steam generator plant consists of five (5) boilers operating into a 16-inch 120 psig manifold with condensate return lines from all over campus. The combined peak capacity of all boilers is 300,000 pounds per hour (PPH). Boilers 1, 2 and 3 have peak capacity of 40,000 PPH with 30,000 PPH sustained operation. These boilers were installed in 1965 but are still in good

condition and are tested every few days in a preventative maintenance program. They are used for stand-by operation since their efficiency is not as good as the other two newer boilers. Boiler 4 has a peak capacity of 80,000 PPH with 60, 000 PPH sustained and was installed in 1970. It has heat recovery from the exhaust gas to pre-heat the combustion air. Boiler 5 has a peak capacity of 100,000 PPH with 80,000 PPH sustained and was installed in 1975. It, too, has combustion air pre-heat. Boilers 4 or 5 or both, if necessary, are the primary steam generators. The maximum load measured to date has been 100,000 PPH leaving substantial capacity for future growth.

The distribution piping, which is schedule 40 steel for steam and schedule 80 steel for condensate return piping, is in good condition and the preventive maintenance program on the steam distribution accessories has maintained overall plant efficiency very well. There are no plans at this time to upgrade the steam equipment nor distribution.

Chilled Water

The University operates two chilled water plants for use by buildings throughout the core campus from Frank Broyles Athletic Complex on the southwest, to Reid Hall on the northwest, to the Graduate Education Building on the northeast, to the Physics Building on the southeast. Several campus buildings along the west side of campus have their own remote chilled water machines. Those buildings are the Administrative Services Building with a 125-ton chiller, Barnhill Arena with a 250-ton chiller, HPER Building with two 250-ton chillers, and Pomfret Hall with a 350-ton chiller. All five of these machines are R-11 refrigerant types and will need to be phased out in the near future. Bud Walton Arena has two 800-ton chillers operating on refrigerant R-22. One of these chillers is for stand-by since the measured load on the arena has never exceeded 600 tons. There may be some opportunities to utilize this excess capacity or to feed all of these remote loads from the central chilled water plant in the future.

The south chiller plant, located just south of the heating plant, contains three chiller machines. Chiller 1 is a recent retrofit using refrigerant 134A and is a 1300-ton electric drive machine. Chiller 2 operates with refrigerant 134A and is a 2,000-ton machine operating with a variable frequency drive. Chiller 3 is a 3,000-ton machine operating on refrigerant R-22 and is an electric drive machine. Although this plant has a peak capacity of approximately 6,300 tons, it can only deliver approximately 4,000-tons due to distribution system and pumping limitations. The 20-inch chilled water supply and return lines leaving the plant are limited to 9,000 GPM. Future upgrades will need to consider improving the distribution system from this chiller plant. The plant has a variable flow primary secondary piping system that delivers 40°F chilled water supply and receives a 50°F chilled water return with the variable flow. At least one of these machines must operate continuously since there are chilled water demands even in the wintertime in some buildings.

The north chilled water plant was recently constructed on Maple Street near the Animal Science Building. The chilled water generator is a 4,000-ton steam turbine machine operating off of the campus steam system. This plant also

experiences distribution limitations with 16-inch supply and return lines extending to Garland Street. This system presently can deliver 5,300 GPM with 40°F supply temperature and 52°F return temperature, limiting its distribution capacity to 2,800 tons.

The highest chilled water demand measured to date has been approximately 5,000 tons with over 10,000 tons generating capacity. The north chiller plant (Chiller 4) is only run during the warm months from June to October to reduce electrical kilowatt demand charges, but is still more expensive to operate than the electric drive machines. There appears to be adequate chilled water generation capacity for substantial future load if the distribution limitations can be properly addressed.

The chilled water distribution piping consists mostly of schedule 40 steel pipe that is in good condition throughout campus. The chilled water pipe is distributed exclusively through the utility tunnel system except for some building runouts. Most of the utility tunnels are routed under sidewalks and have frequent access hatches for maintenance.

Natural Gas

There is limited natural gas distribution throughout campus, most of which is metered at the steam generating plant. Gas is also used in science and chemistry laboratories and for remote building stand-by electric generator systems. Gas is a desirable fuel for such generators.. There are multiple metering points by Arkansas Western Gas Company throughout campus. From these points, campus-owned distribution is extended to the buildings. The core campus metering point is just north of the new Environmental Health and Safety Building. From there, the original low-pressure line (4oz./square inch) feeds thirteen buildings which are Science “D”, Bell Engineering, Engineering, Ozark Hall, Chemistry Lab, Old Main, Home Economics, Agriculture, Agriculture Annex, Plant Science, Memorial Hall, Graduate Education and Peabody Hall. A new medium-pressure line (10psig) was installed recently to relieve some of the load from the low-pressure line. This system provides a low-pressure regulator at each of six buildings: Environmental Health and Safety, Science Engineering, Chemistry, Music, Vol Walker and Mullins Library. The new Science Tower also will be fed from the new medium-pressure line.

Electricity

The University receives a central feed from Southwestern Electric Power Company (SWEPCO) and operates with a Large Power and Light Rate contract. The utility sub-station feeding the campus is located south of Dickson Street and east of University Avenue. The medium-voltage system delivered to campus is a 12,470/7200 volt, 3-phase, Wye-grounded system. The electrical distribution system for the campus recently was upgraded and has a central powerhouse located immediately to the west of the south chiller plant. The campus electrical system serves essentially the same buildings on campus that the chilled water system serves, leaving many of the western facilities served and metered directly by SWEPCO. The new powerhouse has an ultimate connected capacity of 43

MVA with draw-out switchgear and a 2,000-amp 15 KV main bus system. Room for growth was allowed to add a future stand-by feed into the powerhouse and to add additional campus circuits as the need develops. Distribution is with medium-voltage cable through underground duct banks and in conduit or with armored cable throughout the tunnel system. The campus wiring is almost exclusively 2/0 gauge copper and is fed from 225-amp circuit breakers for the six general purpose campus circuits. There are numerous electrical vaults underground throughout campus containing switches to create multiple loops from the campus circuits, which increases the flexibility and reliability of the distribution system.

To further the reliability, the recent upgrade increased the stand-by utility capacity into the northwest part of the campus near the University Health Center south of Reid Hall. This stand-by source can be separately metered during emergencies but is limited to a 600-amp bus arrangement. This entrance could support three of the five campus circuits, and with the flexibility of loop feed and vault switches, could support most of the campus load should it be required. There is an additional utility stand-by service at Walton Arena. Walton Arena is currently fed and metered directly from SWEPCO, but there is a spare circuit switch which could be utilized during an emergency to back-feed one of the southwest campus circuits. The capability of feeding the entire campus system from these two stand-by sources may be limited by the utility capacity depending on the time of year.

A recent extension from the sixth spare campus circuit has completed a loop to serve the new Donald Reynolds Center at the Business School and some other loads. Some preliminary studies have been done to investigate the feasibility of adding more of the western campus loads to the central electrical system so that the lower utility rate from the central point could be expanded. Some of this work will be necessary in order to remove the overhead power lines from Razorback Road.

Communications Systems

Planning for future high-bandwidth networks at the University of Arkansas is currently under way. The University has established the Computing Activities Council (CAC), the campus committee charged with oversight on information technology issues, reporting directly to the Chancellor. A new Network Advisory Committee (NAC) has been charged by the Chancellor to formulate a recommendation and plan for a campus network upgrade.

Generally, all of the buildings on campus are connected to the campus backbone over fiber-optic cable. There are six main routers on campus. Each building is fed with a 12-filament fiber cable. Current plans are to upgrade the system to an ATM network with 622 Mbps capability. Funding of this system has been made a high priority and work is expected to begin soon.

The telephone system for the campus is a Northern Telecom SL1-XT PBX with software release 17.64. The system, originally installed in 1981 as an SL1-XL,

received major upgrades in 1989 and 1992, taking it to its current configuration. The demarcation point for the campus is in the basement of the Band Building located on Garland Avenue, where local and long-distance service by various carriers are terminated with T1 circuits. The campus system has a total capacity of 8,500 stations with approximately 7,000 now in use. Plans are to replace the system with one of greater capacity and added features within the next year. The voice mail system installed in 1993 was upgraded in 1997 to an Octel 300 XL with Serenade 2.0 software. This system provides expandable capacity to 10,000 mail boxes and 128 ports. Approximately 4,200 mail boxes and 48 ports are currently installed, with approximately 4,000 presently in use. Distribution to the individual stations is via copper cable routed primarily through the utility tunnels from the PBX in the Band Building. Remote extensions from the PBX are supported at the Engineering Research Center, the Agricultural Research and Extension Center and the Center for Continuing Education.

Cable television is available on campus directly from TCA, the local cable T.V. company. End-users are contracted and billed directly from TCA. The cable is routed through the utility tunnels to the individual buildings where possible.

2.7 Potable Water, Sanitary Sewer and Storm Sewer Systems

Potable Water

The University is served by the City of Fayetteville water utility. The city is supplied by the Beaver Water District from an 80-million-gallon-per-day (MGD) treatment facility through parallel 36-inch and 42-inch diameter transmission lines capable of furnishing approximately 46 MGD. The 1997 average and maximum day usage (based on 9 months data) is approximately 12.5 MGD and 20.5 MGD, respectively.

The campus is fed from the east by a 10 inch line on Whitham Avenue and a 12-inch line on Dickson Street, from the north by a 10-inch line on Garland Avenue and a 12 inch line on Razorback Road, and from the south by a 12-inch line on Razorback Road.

The campus is looped on the periphery by water lines connecting the major feed lines as follows:

- Ten-inch line on Arkansas Avenue connecting the 10-inch feed on Whitham to the 12-inch feed on Dickson Street
- Twelve-inch line on Maple Street between the 12-inch feed on Razorback Road and the 10-inch feed on Garland Avenue. 6 inch line along Maple between Garland and Arkansas Avenue.
- Twelve-inch line on Le Roy Pond Drive between the 12-inch line on Razorback Road and a 12-inch line on California Drive (which

is an extension of the 12-inch line from Dickson Street south on Garland Avenue).

Service lines to buildings and service areas vary in size from 8 inches to less than 2 inches in size.

The City of Fayetteville's primary pressure plane (system hydraulic gradient) for the campus area is elevation 1,578 msl. System storage serving the campus is from a 1 million gallon elevated tank on Markham Hill located just west of the University, and from two new 6-million gallon ground storage tanks on Kessler mountain southwest of Fayetteville.

Ground elevations on campus vary from a low of around 1,260 msl in the southwest area near Carlson terrace to a high of around 1,460 near the Alternative Pest Control Research Center on Maple Street south of the intersection with Oakland Avenue. This results in static pressures on campus ranging from 50 to 135 psi.

However, many of the campus buildings are multistory, and require domestic water booster pumps to provide adequate operating pressures and fire flows. Domestic water booster stations are required for multistory buildings listed below:

- Business Administration
- Hotz Hall
- Humphrey Hall
- Yocum Hall
- Reid Hall
- Rosen Alternative Pest Control Center

The water supply test results, as furnished by the University's insurance carrier, show only fair supply (as opposed to good) at the following locations:

- Old Main
- Ozark Hall
- Plant Sciences Building
- Business Administration

Also, based on the insurance report, fire pumps located at Old Main, the Plant Sciences Building and the Business Administration Building are too large for their available water supply, potentially damaging to supply mains if used in a fire emergency. At the Plant Sciences Building and the Business Administration Building, the 6-inch city supply lines appear inadequate.

Interviews with the Physical Plant staff identified low flows and pressures in two areas: Stadium Drive (served by a 6-inch line) supplying the HPER Building, Barnhill Arena and several fraternity houses including Wilson Sharp on the north end, and an area around the center of campus near Old Main (served by 6- and 8-

inch lines). Because of the existing line sizes, water supply for fire protection in these areas is considered poor.

According to the Physical Plant Department, there is no existing utility master plan. The work done by the staff is primarily maintenance, not capital improvements.

Proposed system improvements by the City of Fayetteville (as identified in the Water Master Planning Study dated October, 1996) include constructing a 12-inch line along Maple Street between Garland Avenue and Whitham Avenue.

Sanitary Sewer System

The wastewater collection system for the campus was started in the late 1800s and early 1900s. As the University expanded, necessary sewer lines were constructed to transport the additional flows to City of Fayetteville sewer pumping stations, and ultimately to the city-owned wastewater treatment plant (Noland WWTP) located on the White River east of town.

The Noland wastewater treatment plant was designed to treat an average daily flow of 11.4 MGD and 17 MGD on a maximum month (wet weather) basis. A review of the Fayetteville Wastewater Facility Plan dated February 1997 reveals that the treatment plant is in need of expansion, both for the existing demands as well as anticipated growth. The city officials recognize the need for expansion and have embarked on a process to achieve that goal.

Infiltration and inflow that enters the University sewer collection system contributes to surcharging and overloading of the city's collection system and treatment facility. In order to reduce these loadings, the University entered into a joint study with the City to identify and correct problems in the existing system. In June 1997, a sewer system infiltration and inflow (I/I) study was completed for the University campus in which recommendations were included to eliminate 200 infiltration sources and 360 inflow sources for an estimated capital cost of approximately $400,000. This work includes replacement of 11 sewer segments (1,698 linear feet) and point repairs at 9 locations. The study estimates that correction of these defects will result in the elimination of approximately 0.838 mgd of I/I from the study area.

According to the I/I study, the existing wastewater collection system for the campus consists of approximately 33,765 linear feet of gravity lines, ranging in size from 4-inch to 18-inch, with the majority being 6-and 8-inch in size. The western portion of campus between Garland Avenue and Razorback Road flows to the south through a series of 8-, 10-, 12- and 15-inch sewers eventually discharging into a 24-inch diameter line crossing under 6th Street. The central and southern portions of campus flow southeasterly through 6-, 8-, 10- and 12- inch sewers to a main interceptor line near the intersection of Center Street and University Avenue. The area along Maple Street between Garland Avenue and Arkansas Avenue flows to the northeast through 6- and 8-inch sewers.

The sewer lines are mainly constructed of vitrified clay pipe, some concrete, ductile iron and PVC pipe. The I/I study identified 202 manholes. There are no sewage lift stations located on University property.

According to the Physical Plant staff, there are no planned improvements to the existing sewer system other than the rehabilitation project mentioned above. The I/I study did not reveal any known capacity problems.

Campus Storm Water Management System

A review of topographic maps of the area shows that the center of campus is located on a relatively high knoll that is bisected by a major watershed divide. South of the divide is the White River watershed and north of the divide is the Illinois River watershed.

Since much of the campus is at or near the divide, storm drainage is not a significant issue. With the exception of two areas, the majority of the campus drains south to the Town Branch which then flows into the West Fork of the White River. The two exceptions are the area generally north of Old Main between Campus Drive and Arkansas Avenue, and the area north of Maple Street and east of Garland, which flow northeast to Skull Creek then to Mud Creek and ultimately to the Illinois River to the west.

The areas draining to the south are divided into two separate stormwater collection systems.

Beginning at Mullins Library, a complex of storm drainage pipes collect stormwater from buildings, streets, parking lots, etc., that flow southeasterly and discharge into a 36- and 42-inch storm drain south of the Heating Plant on Dickson Street and west of Duncan Avenue. From this point, the two pipelines flow southeasterly to near the intersection of Duncan Avenue and Williams Street where they discharge into an open drainageway.

The area west of Mullins Library drains generally west and south through a series of storm drainage pipes varying is size from 6 to 30 inches and then through a 39-inch by 39-inch box culvert to a 4-by-4 foot underground box culvert south of Razorback Stadium.

The area south of Wilson Sharp along Stadium Drive up to Ozark Avenue drains south and west through a series of storm drainage pipes varying in size from 6-inches to 36-inches and then through a 42-inch pipe to a 5-by-7 foot underground box culvert under the outdoor track facility.

The major storm drainage system on the west side of campus drains an area south of Cleveland Street all the way to 6th Street. The area between Fulbright Dining Hall and the north end of Razorback Stadium drains through a 3-by-3 foot underground box culvert. The size increases to 4-by-4 foot under Razorback Stadium south to the northwest

corner of Barnhill Arena. At this point it enlarges to a 6-by -5 foot box for a short distance and then to a 5-by-7 foot box under George Cole Field and a 5-by-8 foot box under the Outdoor Track Facility then finally to a 5-by-15 foot box down to Le Roy Pond Drive.
This box empties into an open ditch through Carlson Terrace Apartment Complex and around the east side before flowing south across 6th Street (Hwy 62).

The other major drainage system in this area consists of twin 60-inch pipes that originate at Razorback Road at the west side of Parking Lot #56 and extend east across the lot to discharge into the open drainage way north of 6th Street (Hwy 62).

Interviews with the Physical Plant staff revealed that there is no existing stormwater master plan, however no known capacity problems exist with the major components of the existing stormwater system. There are no current or planned construction projects for improvements to the existing storm drainage system.

Strategic Objectives of the Master Plan

The master plan for the University of Arkansas was shaped in part by the goals and objectives defined by the Master Planning Committee very early in the process. However, it was also influenced directly by the issues and objectives raised by constituent groups from around the campus and in the community during the initial inventory and reconnaissance phase of the project. The following is a summary of the broad goals for the master plan as well as the primary issues raised by students, faculty, staff, neighbors and community leaders.

3.1 Overall Goals for the Master Plan

1. To establish a vision for the University's physical development and redevelopment that encompasses both the campus and community needs.

The vision for the University is that it become one of the prominent academic institutions in the nation, that it serve as the economic engine of the State of Arkansas through outreach and partnering with businesses, and that it achieve Carnegie Foundation Research I Classification.

The corresponding vision for physical development is that the campus have a coherent, prestigious image where its academic, service and research missions can thrive. Although community needs and interests are multifaceted, the core need is for the University to be successful.

2. To build consensus and opportunities for collaboration between the campus and surrounding community.

The campus needs to have a better-defined edge both to make its boundaries clear and attractive and to minimize disruption of adjacent neighborhoods. At the same time, the City of Fayetteville and neighborhoods around the campus should identify a long-term vision for the community that includes strategies for future land use, circulation and economic development for underutilized areas. Accomplishing such objectives demands heightened communication and collaboration on a continued basis between the city and the University long after completion of this master plan.

3. To assess the campus' ability to serve the mission of the University and the State of Arkansas.

Through this planning process, the consultant team, in collaboration with the Master Planning Committee, has assessed the facilities and infrastructure needs of the campus and identified improvements that will enable the campus to fulfill its role as Arkansas' flagship university and its mission as a land grant institution.

4. To plan for campus growth by developing a program for future facility needs and development.

The master plan for the University of Arkansas is based in large part on aggressive growth of research-related functions on the campus to meet the future space needs of new doctoral students and faculty. While some level of expansion is projected in undergraduate enrollment, resulting additional space needs can largely be accommodated through increased utilization of existing facilities.

5. To provide guidelines to direct the physical and environmental growth of the campus, ensuring cohesive land use and provisions for open space, new building locations, support facility locations and compatibility with the City of Fayetteville.

The master plan describes a strategy for accommodating future growth and expansion on the campus that will reinforce current land use patterns and enhance the civic relationship between the campus and City of Fayetteville.

6. To provide design guidelines for new campus buildings, building additions and renovations, as well as hardscape and landscape development.

The guidelines include recommendations for a vocabulary of building and site material, scale and relationships that strive to ameliorate current visual discord and make the future campus more coherent and beautiful. The objective is not to dictate style or overly regulate design, but to influence development to consider broader purposes than the single project.

7. To provide functional, phasing and budgetary implementation strategies for future campus development.

Guided by priorities decided by the University, the planning team has identified a phased sequence of capital improvements for the next 13 years.

3.2 Issues and Objectives

Sense of Community

There is a real need to improve the quality of campus life for students, faculty and staff. This issue bridges a number of related factors including the amount and type of student housing on the core campus, the perception that the student union does not support student activity on campus, the lack of activities able to keep and bring people on campus, and the lack of indoor and outdoor places that encourage informal exchange among students and faculty.

It is imperative to provide more student housing in order to attract and retain students in and around the core of the campus. This housing will activate the campus, blend academic and residential life, and enrich the campus experience by reinforcing the sense of connection to the institution. The ability to offer good-quality student residences on campus also supports the strategic objective to recruit students of higher academic caliber. To diversify the maturity levels of students living on campus, as well as to foster student leadership and mentoring, it

will be necessary to provide more diverse housing stock, such as apartment-type units, to accommodate juniors, seniors and graduate students.

In addition, there is a need to improve the quality of campus life by creating a student union that more adequately meets student needs: more flexible dining options, and more "life" on the campus on nights and weekends.

Most of the individuals engaged in the master plan process agree that there is a need to enhance the sense of place and memorability of the campus. The legacy of elements such as the lawn east of Old Main, the space between Old Main and Vol Walker, Senior Walk and the amphitheater is an important component of the feeling of pride and meaning the University community feels for the campus. However, there is a sense that the University needs not only to preserve and enhance these historical elements of the campus, but must create new meaningful places as part of the campus master plan.

Traffic

Vehicular congestion in and around the campus is a serious concern. However, the inherent conflict between the desire to increase capacity and vehicular movement and the desire to improve the quality of the pedestrian and spatial setting, which is so important to the coherence of the campus, must be balanced as part of the master planning effort. The plan identifies a strategy for circulation that will reduce the amount of traffic cutting through the core of the campus while, at the same time, allowing campus-bound vehicles access and parking within reasonable proximity to the heart of campus.

Parking

Parking is a concern from both a functional and esthetic standpoint. Functionally, the issue is principally one of distribution. Parking supply is not necessarily located in concert with demand locations. The largest single component, the lot located at Razorback Road and W. 6th Street, is on a site far removed from the main core campus. The situation is complicated by a relatively complex array of interstitial surface lots that are closer to the core campus and building destinations, but which create numerous conflict points between pedestrians and vehicles and have negative esthetic consequences. Surface parking lots north of Maple Street and south of Dickson Street not only create a negative visual impression of the campus, but also impact residential neighborhoods.

Visitor Accommodation

There is a general sense within both the University community and the community at large that improvements could be made in the manner that visitors access the campus. Frequent references have been made about the lack of signage/wayfinding and a visitor center. The traditional front door of the University on Dickson Street, with its familiar image of the front lawn and Old Main, has been supplemented by a new entrance from the west along Razorback Road. The multiple entries confuse visitors and make it unclear which is the front door. This situation is compounded by the requirement that visitors proceed first

to the difficult-to-find Administrative Services building, to obtain a parking permit.

Gateways

The traditional gateway to the University developed historically from downtown along Dickson Street to the great lawn in front of Old Main. While this image is the icon of the University, it is much less of a functional front door today. Many visitors arrive via Razorback Road and are greeted by large-scale recreation buildings and an automobile-oriented suburban pattern of roads and parking. It is likely that the University will have at least three front doors in the future: a traditional entry from the east and Downtown Fayetteville along Dickson Street and Maple Street, an entry from the north along Garland Road, and the third from the west and south along Razorback Road. While each of these entries is different in character, there should be consistency in signage, lighting and landscape treatment of these gateways in order to create a formal sense of arrival at each major entry point.

Carnall Hall

The status of Carnall Hall has been the object of considerable debate and controversy over the last several years. While several studies have indicated that it is not cost effective to renovate the structure given its poor condition, for many, Carnall Hall is a symbol of the University's early history and, specifically, the role of women in its development. Carnall Hall currently sits vacant and fenced off on what is one of the most significant sites on campus.

Neighborhood Environment

The campus is surrounded by neighborhoods on all sides, each with a different character and relationship to the University. Traffic and parking in the neighborhoods and other forms of University encroachment were common concerns expressed at the open community forum. Neighborhoods to the north and south are concerned about continued University encroachment, demolition of residential dwellings and construction of surface parking lots which have eroded the neighborhood fabric. The Wilson Park neighborhood has expressed concern about traffic diverted through the neighborhood as a result of congestion around the University.

The Dickson Street commercial district between the University and Downtown Fayetteville has undergone measurable decline in recent years. The city and the University have undertaken planning initiatives intended to reverse this decline and create a positive climate for commercial revitalization. The combination of public and private investment has begun to have a positive impact on this district with substantial renovation and new construction planned or in progress.

Image and Identity

The recurrent theme of "quality of place" manifested itself in a variety of ways. Comments pointed to the lack of a coherent landscape and building fabric of the institution, as well as the intrusion of streets and parking. Concerns about the

visual image of the campus included consistency of landscape, lighting, signage and general level of maintenance. The inconsistent architectural vocabulary and the perception of uneven architectural design quality were identified. These concerns reinforced the need to focus on the "quality of the place" in order to attract and retain high-quality students, to ensure that the campus is welcoming to the outside community, and to make the campus a more memorable place for its alumni and supporters.

Space Organization and Utilization

In general, there is a sense on the campus that space is not used as efficiently as possible and that some building space is not optimally organized. This is not unexpected for an established institution where a variety of space accommodation has been made over an extended duration to fit growth and changes in functions, curriculum, and technology.

Decision Making Process for Projects

The current design review for new projects on the campus is ad-hoc. Projects originate from a variety of constituents, with little overview of how they fit into the long-range strategic plan of the University or how they will affect funding priorities. There is a clear need to formalize the project review and approval process to ensure that each new building represent significant contribution to the campus.

Communication and Coordination with the City of Fayetteville

The University and the City of Fayetteville have a number of areas of common interest. Clearly, solving traffic and transportation problems will require the joint efforts of the University, city, Metropolitan Planning Organization and the Arkansas Department of Transportation. Coordination of infrastructure needs and facilities, including waste water, water and storm drainage, requires dialogue and coordination. A current effort to jointly plan for the revitalization of the Dickson Street corridor is a positive example of the potential of collaborative effort. The University and city need to establish a common vision for both the city and the campus.

Framework for the Master Plan

4.1 Existing Campus Structure

A central theme of the master plan is to build upon the successful elements of the existing campus form. The historic core of the University of Arkansas campus has a clear and recognizable structure developed out of the early campus plan by Jamieson and Spearl. This structure includes the Great Lawn at the eastern edge of the campus, the two major east/west pedestrian corridors (the "Senior Walks"), and the western quadrangle defined by the Library and Union. In recent years, the addition of the mall between Old Main and Vol Walker has established an important open space and pedestrian connection extending in a north/south direction through the center of the campus. While this early plan is relatively intact, as the University has grown beyond the original core campus, the development of new buildings has not significantly contributed to this structure. The master plan utilizes the framework of open spaces and building edges within the historic core as the basis for defining the pattern for new development and open space enhancement both within the core campus area and underdeveloped sites on the edges of the campus. This pattern of new buildings will reinforce the existing framework to establish a visual connection with future development.

4.2 Core Development Zone

The steep topography of portions of the University of Arkansas campus has had a profound impact on its development and the perception of its boundaries. Even today, there is a clear distinction between the character and sense of connection between residents living at the lower elevations of the campus along Stadium Drive and residents of dormitories along Garland Avenue. This is also true, to some extent, of academic functions which occur "off the hill." The slope that defines the upper campus from the lower campus makes pedestrian connections between buildings south of Dickson Street and west of Garland Avenue with buildings located in the center of the campus. To maximize the sense of collegiality and level of pedestrian activity on the campus, it will be imperative that future campus growth be concentrated to the maximum extent possible within the campus core area.

In looking at new development opportunities within the campus core, it is useful to identify existing buildings on the campus that are most effective in reinforcing the overall framework of the campus. The framework buildings are considered to be of significant value in terms of the way in which they create appropriately-scaled pedestrian spaces and reinforce the collegiate image of the campus. Other buildings shaded in gray are considered to be less functional, in poor condition or not meeting the needs of the current use. In most cases, these buildings constitute an under-utilization of prime core-campus sites.

4.3 Open Space Framework

Significant existing open spaces and street corridors are illustrated in the existing open space framework and pedestrian seams plan. Many of these existing or potential open spaces are currently ill-defined. This plan also illustrates where strong building or landscape edges are required to better define and articulate these important open spaces.

4.4 Future Open Space and Building Framework

The master plan identifies the future framework for the campus in its identification of building sites and major new open space and pedestrian corridors. Within this framework, there are a number of alternatives for accomplishing the program needs identified in the master plan. The diagram titled "Open Spaces and Civic Structure Opportunities" illustrates the master plan framework showing potential future building sites, open spaces and existing and proposed major pedestrian corridors. The three major elements of this framework are as follows:

1. The establishment of a north/south pedestrian spine along Garland Avenue, which would connect the northwest development quadrant with an expanded residential village at the south end of Garland Avenue. New residential development along Garland Avenue north of Maple Street provides an opportunity to increase the population of students living on the campus within campus core area. Existing student residences located at Garland Avenue and Dickson Street will be enhanced by the addition of new housing and replacement of some parking with a major new quadrangle. At the center of this axis will be the Arkansas Union.
2. Connections between the core campus and the northwest quadrant of the campus will be enhanced by streetscape improvements along Maple Street, a boulevard treatment along Garland Avenue between Cleveland Avenue and Maple Street, and new interior pedestrian open spaces framed by new buildings in the northwest quadrant.
3. The district of the campus south of Dickson Street is already relatively densely developed with buildings and parking. The construction of parking structures will allow additional programs to be accommodated in this area, including the business school, sciences and engineering. A new open space is proposed to be located north of the Don Reynolds Center extending to Dickson Street, creating an open space corridor connecting to the Greek Theater. This new open space corridor will not only provide needed informal recreation space for the residences nearby, but also will reconnect the southwest district to the core campus. Other building sites identified in the Open Space and Civic Structure plan illustrate how infill buildings can be used to define open space and pedestrian corridors and to occupy the core of the campus with greater efficiency.

Elements of the Master Plan

5.1 Land Use

The Land Use Pattern illustrated in the master plan is intended to concentrate academic activity and essential student life functions in the core area of the campus. By concentrating these uses within close proximity to one another, the plan maximizes opportunities for interaction among students, faculty and staff within an attractive pedestrian environment, promoting a more collegial environment.

There are several opportunities to expand research functions in two off-campus areas: the Arkansas Agricultural Research and Extension Center and the University Research Center. These more remote locations may be appropriate for certain types of research that cannot be accommodated in a typical lab environment, may generate undesirable fumes, or have extensive service requirements. However, it has been determined that there is sufficient land within the main campus area to accommodate all of the projected growth of research facilities. Moreover, it is desirable to keep as much of the research activity within close proximity to the core campus to encourage interaction between faculty, doctoral students and other members of the University community.

Three areas have been designated in the plan as possible locations for new research facilities: within the northwest quadrant of the campus at the intersection of Cleveland Road and Garland Avenue, the area south of Dickson Street in close proximity to the Science Engineering building and Bell Engineering, and along Maple Street adjacent to the Plant Sciences Building

Athletics and recreation fields will continue to occupy the majority of the land between the Stadium and Walton Arena with some expansion further south toward 6th Avenue. Furthermore, it may be necessary to utilize land in the vicinity of the baseball complex for additional athletic and recreation expansion.

Expansion of on-campus residences is an important element of the plan. It is critical that any new residences be situated within close proximity to the core area to enhance pedestrian activity within the campus. Most of the growth in new student residences will be accommodated in the area north of Maple Street, both east and west of Garland Avenue. Other new residences have been sited west of Garland Avenue near Humpreys Hall and Yocum Hall. A third group of new residences planned in the blocks east of Arkansas Avenue represents only a small proportion of the future supply.

Future academic expansion, while not specifically identified in the near-or long-term program, may be needed as individual programs expand or buildings become obsolete. The south side of Dickson Street between Duncan Avenue and Arkansas Avenue is a site ideally suited for one or more new academic buildings. This area is both proximate to the center of the campus and close to downtown

Fayetteville. A new academic building in this area would be a much needed addition to the effort to link the University to the local community.

5.2 Projected Space Needs

The next 13 years will be a very dynamic period for the University of Arkansas. Today, the institution serves a range of students including full-time undergraduates, part-time students interested in expanding career skills, to graduate and doctoral students with focused research interests. During the planning process, Chancellor White and the Master Planning Steering Committee established enrollment goals of approximately 38 percent growth from 14,575 students to 20,122 students by the year 2010, and that the University will grow from a Carnegie Foundation Research II-level institution to a Research I-level institution. It is likely that the goals for enrollment in this report will be adjusted in the future as the University and individual schools refine their strategic and academic plans. The master plan is sufficiently flexible in terms of its phasing to accommodate unanticipated enrollment changes; however, it will be important for the University to periodically evaluate the impact of revised enrollment projections on the near- and long-term space needs of the University. While the Master Plan is based a 13-year planning horizon, the plan should be viewed as establishing thresholds that can be achieved in a more accelerated schedule or extended out over a longer period of time.

A second goal identified by the University which has a profound impact on future space needs is the objective of increasing the population of undergraduates living on-campus. Presently, fewer than twenty-seven percent of students live on campus. Recognizing the value of on-campus housing to the overall quality of the undergraduate education, the University identified a goal of increasing the percent of undergraduate students living on-campus to forty percent. It was determined that over the long term (Phase II), this goal would be difficult to achieve within the current land constraints of the campus, and as a result, a target of approximately thirty-six percent of students living on-campus was projected for Phase II.

Enrollment Growth Goals

	1998 Enrollment	2003 Enrollment (Phase I)	2010 Enrollment (Phase II)
Undergraduate	12,000	12,938	14,500
Masters	1,321	1,764	2,500
Doctoral	632	1,333	2,500
Non-Degree	172	172	172
Law	450	450	450
Overall	14,575	16,657	20,122

The space needs for the master plan were evaluated in relation to space deficiencies with current enrollment and anticipated needs resulting from projected enrollment increases. This evaluation is based on an analysis using generally accepted national space standards for research institutions with similar enrollment characteristics.

Future Space Needs: assignable square feet (asf)

	Existing Space (asf)	*Current Space (Shortfall)/Surplus*	*2003 Projection*	*2010 Projection*
Classroom	250,000	48,050	18,902	(29,608)
Teaching Labs	230,000	42,475	15,409	(29,636)
Research Labs	250,000	430	(105,230)	(281,000)
Office	616,000	154,700	31,300	(184,000)
Library	130,000	(47,906)	(53,014)	(59,944)
Activities/Student Union	305,000	67,799	24,381	(34,524)
Rec /Athletic Fac.	410,000	89,081	30,339	(49,356)
Housing	3,275 beds	(35) Beds	(1325) beds	(2000) beds

note 1: a space shortfall is indicated in parentheses: and a space surplus is indicated as a positive number.

note 2. projected space needs shown for Phase II-2010 are cumulative with space needs indicated in Phase I.

Accommodation of Future Growth

- There is sufficient land within the existing boundaries of the campus to site all of the new facilities needed to accommodate the projected enrollment growth assuming that future parking needs are served by structured parking. However, some land acquisition will be desirable to accommodate the projected increase in on-campus student residences within the core area of the campus.

- New research facilities to support the projected increase in masters and doctoral enrollment will be accommodated in three locations: north and west of the intersection of Garland and Maple in the area presently occupied by Fulbright Hall and Fulbright Dining; on the south side of Maple Street Adjacent to the Plant Sciences Building, and south of Dickson Street along Buchanan Avenue. The plan does not recommend expansion of "clean" research facilities in either the Engineering South complex or the Agricultural Research and Extension Center.

- Office space needed to support growth of doctoral and masters enrollment as well as growth in faculty and administrative populations will be accommodated in part by converting Reid Hall to office space. Other future office space needs can be accommodated in conjunction with construction of new research facilities and through reuse of existing facilities made available from other space moves (i.e., if Architecture is relocated from Vol Walker, this building will become a possible site for relocation or expansion of certain administrative offices).

- While expansion of the existing library facility could accommodate the projected library/study space needs, it may be appropriate to consider creating one or more new satellite libraries that could serve the more specialized needs of masters and doctoral level research.

- Future classroom and teaching lab space will be accommodated in new facilities within the core area of the campus. Possible sites include the area south of Dickson Street near Engineering Hall, and the area along Buchanan Avenue south of Dickson Street.

- Future student activity space needs will largely be accommodated by the planned addition to the Arkansas Union.

- Expansion of recreation and athletic facilities is envisioned to be accommodated by the renovation and reuse of the University Museum for student, faculty and staff recreation facilities. Expansion of athletic and intercollegiate facilities will occur in the area west of Garland Avenue around the Stadium and HPER Building.

- New on-campus student residences will be created in the area north and west of the intersection of Maple and Garland, with additional expansion possibilities on several infill sites along Douglas Street. The plan also envisions replacement of Buchanan-Droke and Gladson-Ripley with at least two new suite-style residence halls that are designed to provide a more effective pedestrian connection with the surrounding student residences. Buchanan-Droke and Gladson-Ripley are in poor physical condition and will be very difficult to renovate as suite-style living units.

- Future parking needs will be accommodated in five new structured parking facilities proximately located to the core of the campus. One of these facilities, the 600 space Intermodal Transportation Facility, is presently under construction. Other facilities are proposed for the area near the Poultry Research Facility north of Maple Street, near Leverett Street and south of Dickson Street between University Avenue and Duncan Avenue, and on the existing surface parking lot east of the College of Business. The total capacity of these new facilities exceeds 4,000 spaces and will accommodate future parking demand as well as expected displacement of existing surface parking spaces.

- Expanded Child Care, both to serve the existing campus community better and meet the demands of future enrollment, is an important consideration in future facilities planning. This will be especially important as upper-level degree programs attract a larger number of older students with children. Child care also offers a great opportunity for learning and research in related academic programs.

5.3 Site Improvements

Gateways and Entries

Equally important as the new building construction program, open space site projects offer great opportunity for improvement of the campus environment. Of specific importance are the design and condition of the principal gateways into campus which carry the University's image to the surrounding community and offer the initial vision of the University to first-time visitors. Though campus traffic enters the campus from all sides, the approaches can be classified by their primary importance as follows:

- Garland Avenue has become the principal entrance for traffic coming from north of the campus. The planned improvements to Garland Avenue by the State Highway Department will require careful design consideration to ensure that they reinforce the character of the campus. The plan envisions that Garland Avenue, rebuilt as a boulevard, will serve as the main entry to the campus for daily academic functions. The plan recommends that the University encourage the Highway Department to establish a signage system that will direct visitors from US-71 to North Street and Garland Avenue.
- 6^{Th} Street to Razorback Road is a less desirable entrance for visitors because of the unattractive land use pattern along this roadway. However, this is the preferred route for visitors attending football and basketball games. The extension of Razorback Road to Route 265 and the new Route 540 (US-71) will augment this entry.
- Dickson Street approaching the campus from the east will continue to be the historic entry to the campus. All improvements to this corridor need to reinforce the collegiate character present today.
- West Lafayette and Maple Streets approaching the campus from downtown Fayetteville are also important historic gateways to the campus. The master

plan does not envision any changes in traffic patterns or directional signage along these corridors.

Other roadway and site improvements recommended in the plan are outlined in the Circulation and Parking section of this chapter.

Phase I Site Improvements

- Maple Street streetscape improvement. Maple street will become an increasingly important division and link between the academic campus core to the south and the growing student residential community to the north. An upgrade to meet the standards outlined in the design guidelines would include the planting of additional street trees and sidewalk repair and construction. To further improve pedestrian safety and comfort, key crosswalks should be rebuilt with unit pavers.
- Visitor entrance roadway expansion. To accommodate adequate convenient visitor parking for a new visitor reception area, the small loop immediately west of Memorial Hall should be extended south 100 feet. A small, clearly identified visitor kiosk should be built in the landscaped median.
- Vol Walker Hall plaza improvements. To improve pedestrian circulation and the general quality of what is one of the most historic and beautiful open spaces on campus, the plaza surrounding Vol Walker should be rebuilt with realigned walkways, replanted lawn and new furniture and light fixtures as described in the Design Guidelines.
- Razorback Road streetscape improvements. To improve the quality of this major entry corridor, the street edges need to be greatly improved through the planting of a consistent line of street-trees and targeted use of decorative fencing along the current and proposed recreation and athletic fields. Other improvements would include an upgrade and installation of sidewalks and crosswalks to enhance pedestrian routes along the campus edge and into the neighborhood to the west.

Phase II Site Improvements

- Dickson Street pedestrian plaza. A major component of the proposed vehicular circulation changes is the closure of Dickson Street between Garland Avenue and Buchanan Avenue. This segment should be redesigned as a pedestrian space that ties together the open space on either side. This would create a continuous space between Brough Commons and Gibson Hall that could become the primary outdoor living area for the large surrounding residential cluster, including two proposed new residences just south of Gregson Hall. The plaza would also tie the Greek Theater to the new open space proposed to the east of Kimpel Hall.
- New Recreation fields along Razorback Road. To address the shortage of recreation space, the westernmost five buildings of Carlson Terrace should be removed with new housing built on alternative sites. This will allow for the accommodation of new recreation fields.

5.4 Building Improvements

Existing Building Recommendations

Based on assessments and other information, and consistent with the objectives of this master plan, recommendations are presented for four "R's" for educational buildings, general purpose buildings, residence halls and associated commons:

- Renovation: Buildings which need significant investment to continue serving their current purpose.
- Reuse: Buildings for which new uses are proposed, requiring renovation and space provision for any functions displaced.
- RFP: Buildings which are appropriate for a Request for Proposal to offer as opportunities for private investment and operation, either under a lease or sale arrangement.
- Removal: Buildings which should be removed at some point in a phased sequence with replacement space.

Additionally, it is recommended that policy be set concerning historic structures and specific buildings be identified for Phase II preservation.

Educational and General Purpose Buildings

Renovation

Subject to review and refinement by University personnel who are well acquainted with building conditions and priorities, the planning team is of the opinion that the following fifteen buildings should be scheduled for renovation over a number of years. Totaling almost 1 million square feet, total renovation costs in 1998 dollars could be on the order of $100 million.

- Animal Science (Built 1956, 1964, 75,375 sf)
- Agriculture (Built 1927, 52,457 sf)
- Business Administration (Built 1977, 142,694 sf)
- Chi Omega Greek Theater (Built 1927, 58,100 sf)
- Fine Arts Center (Built 1949, 81,350 sf)
- Graduate Education (Built 1968, 65,106 sf)
- Home Economics (Built 1939, 32,845 sf)
- HPER (Part of Basement) (Built 1984, 9000 sf to be renovated)
- Kimpel Hall (Built 1973, 126,641 sf)
- Music Building (Built 1976, 30,848 sf)
- Ozark Hall (Built 1939, 66,613 sf)
- Science D (Built 1968, 61,985 sf)
- Science Engineering (Built 1964, 101,179 sf)
- Student Health Clinic (Built 1965, 19,709 sf)

Reuse

Seven buildings are identified for at least partial conversion to new functions. The total area adapted is approximately 375,000 square feet, for a budget need in 1998 dollars of $40 million. As for renovation projects, this work would need to be sequenced over a number of years with new construction and renovation projects. Examples of buildings that have the potential to be converted to new functions include:

- Chemistry. (Built 1934, 72,696 sf) The consultants were asked to look at this building to recommend potential reuse. It is an important historic structure that remains sound but is in need of major renovation. Rather than a drastic change of use, it is recommended to remain in service to the sciences. It should continue to serve as offices, teaching labs, other science labs which are not "hood intensive," classrooms and for storage of non-hazardous or flammable items.
- Hotz Hall. (Built 1964, 100,000 sf) Portions of Hotz have been adapted with reasonable success for offices. Functions not needing convenient access for students or faculty/staff should remain here as well as providing office space for faculty and graduate students involved with proposed adjacent research facilities. Assume half of the building remains to be adapted for these purposes.
- Memorial Hall. (Built 1939, 45,717 sf) This is a significant architectural work located near the heart of the campus. If a new building for the College of Architecture is realized, Landscape Architecture would be relocated. A new visitors center should be located on the ground floor near the entry facing the expanded parking loop (as described in the site improvements). Academic use of the vacated space could include large classrooms and, at least temporarily, functions dislocated by other renovation or demolition projects. Assume half of building is adapted to new use for these purposes.
- Peabody Hall. (Built 1913, 26,971 sf) There is an opportunity to tie this historic structure to a proposed new Health Professions, Outreach and Technology building, providing it with accessibility and improved fire safety. Once a school to prepare students for the University, this would make an appropriate symbol for the College of Education, providing faculty offices and student advisory services. Instruction would be in the Graduate Education and the proposed Health Professions building.
- Reid Hall. (Built 1966, 95,235 sf) Similar to Hotz Hall, it is recommended for conversion to office use. This structure would not be economical to adapt to provide more privacy if it were to remain residential. As a dorm, its location does not contribute to goals for bringing activity to the heart of the campus.
- University Museum. (Built 1936, 40,587 sf) The Museum, if transformed into the Arkansas Science Center, needs to have considerably more space and much better public access. If a new facility is built, the Museum's current home could be returned to recreational use. It would be ideal, for example, for faculty/staff exercise located conveniently next to the Arkansas Union. It could also serve for student recreation. There is also the potential to remove the failing addition on the west side and to replace it with larger functional space, although not calculated in this category of cost. This type of activity is needed to achieve a greater sense of community in the heart of the campus

but the added cost to operate a recreational center remote from HPER needs to be budgeted.

- Vol Walker. (Built 1934, 66,950 sf) At the heart of the campus, this significant structure would serve well as offices for the Chancellor and other high-level administrators. The original reading room of the former library should provide an exhibit and gathering place. Space vacated in the Administration Building would provide the opportunity to evaluate administrative services, now in several locations, to determine where they are best located in the interest of service to customers and visitors and overall efficiency.

RFP

- Carnall Hall (Built 1905, 37,147 sf) This corner of the campus needs an active and attractive anchor. With restoration and addition, Carnall Hall could meet this requirement. Recognizing the role of the building in the history of the University and its importance in the community, the consultant recommends that the University develop a Request for Proposals, defining criteria consistent with this master plan and community concerns, to solicit private investment and operation. A low-cost, long-term lease should be offered. If no suitable offers are submitted within 24 months of the RFPs issue, the structure should be removed to allow for new residential or academic development. If within six months from the date the RFP is issued, it appears that no private or university reuse of the building will occur, concerned groups should be given adequate notice so that alternative sources of funding can be explored within the 24-month time frame.
- West Avenue Annex. (Built 1928, 25,369 sf) After current University occupants are relocated to new spaces, this building should be offered for lease or sale for private redevelopment consistent with goals of the Downtown/Dickson Enhancement Project.

Removal

- Agricultural Annex. (Built 1905, 14,375 sf) Not feasible to meet life safety and accessibility requirements and modern functional needs. Remove when Agricultural expansion in this area is necessary.
- Army ROTC. (Built 1924, 13,496 sf) Remove this unattractive building to allow for Health Professions or other academic use after constructing or adapting a new facility for ROTC.
- Dickson Street Annex. (Built 1975, 8,898 sf) Remove when more significant academic or research use of Dickson Street frontage begins construction.
- Speech Clinic. (Built 1927, 7,954 sf) Only if not adaptable for quality townhouse apartments, remove to allow new housing after Health Professions has new home.
- Student Development. (Built 1905, 12,369 sf) This building would be quite expensive to renovate to meet life safety and accessibility criteria. Remove to provide a site for Health Professions Outreach and Technology.

Residence Halls

Renovation

The decisions made to date on which residence halls to renovate have been wise. Two of those projects listed below are already set for renovation as well. The remaining three residence halls, totaling 260,000 square feet, could require a budget of as much as $20 million if significant changes are made to achieve greater privacy, or perhaps half this amount for upgrading with the current configuration.

- Brough Commons. (Built 1964, 38,800 sf +/-) Scheduled for renovation 1998.
- Futrall Hall. (Built 1962, 51,015 sf)
- Gibson Hall. (Built 1936, 31,488 sf) Scheduled for renovation 1998.
- Humphrey's Hall. (Built 1961, 101,086 sf)
- Yocum Hall. (Built 1963, 107,014 sf)

Remove

- Buchanan/Droke & Gladson/Ripley. Not practical to renovate or adapt to decent residential space. Use footprint for new residential development stepping down the steep slope or expanded parking.
- Carlson Terrace (partial). Remove portion on west to allow recreational field expansion. Reconstruction in this area to replace lost housing units is also recommended.
- Fulbright Hall. Although there is a design to convert this to residential with greater privacy, it is the consultant's opinion that funds would be invested more wisely in new construction to fit the market demand in a location more convenient to the heart of the campus.
- Fulbright Dining. As residential uses in this quadrant are relocated nearer the core of the campus, any food service offered should be at the Arkansas Union or Brough Commons.
- Terrace Manor. Remove to allow green space to link academic elements south of Dickson with the green space of Chi Omega Amphitheater.

Historic Structures

As part of adopting this master plan, the University should document the high value it places on its heritage and its historic architecture. Using a minimum age of 50 years, there are nine major historic campus educational and general purpose buildings for which long-term commitment to preservation and active use is strongly recommended:

- Old Main,
- Vol Walker Hall,
- Memorial Hall,
- Agriculture,
- Chemistry,
- Ozark Hall,
- Engineering,
- Home Economics,

- Chi Omega Greek Theater.

These define the basic framework of the historic campus and each is significant in its own right. The Campus Master Plan advocates adding the Fine Arts Center to this list although it is a year short of the suggested criteria. There are other important historic educational and general purpose buildings which should be well maintained and actively used as long as other critical University requirements do not dictate their removal:

- University Museum,
- Peabody Hall,
- Gibson Annex.

There are also three historic residence halls to which a long-term commitment is urged:

- Gibson Hall,
- Gregson Hall,
- Holcomb Hall.

The plan also recommends that creative options be explored for the reuse and renovation of Carnall Hall and the West Avenue Annex including, as described earlier, requesting proposals for private investment. Smaller structures of a scale not addressed by the master plan may also have historical importance and should be protected accordingly.

5.5 Circulation and Parking

Traffic and Circulation

Traffic and circulation improvements are designed to make the street system safer, more efficient, easier to navigate, less intrusive to the pedestrian environment, and more consistent with the urban design goals of the master plan. As part of the latter two goals, the recommendations below greatly improve two of the key gateways to the campus: Garland Avenue from the north and Harmon Avenue from the south.

Regional Traffic Improvements

- Improvement of the intersection of North and Leverett Streets. Currently, Garland Avenue carries close to 70% more traffic than Leverett Avenue just north of Maple Street (1996 Average Daily traffic Counts). To relieve this load from Garland Avenue, especially as it becomes a center of recommended University residential development, Leverett Avenue must carry a greater share of the traffic between Maple and North Streets.

- Improve wayfinding and signage directing traffic to the campus from US 71. As the regional road network is increasingly connected to US 71 (especially with new access at Razorback Road to the south), wayfinding must

adequately guide visitors and new students to the campus from all significant entry routes.

- Extend Arkansas Avenue to Douglas Street. To improve north/south traffic flow along the eastern edge of campus, Arkansas Avenue should be extended north to a new intersection with Douglas Street that expedites this east/west connection.

- Create a new direct route along the east edge of campus between North Gregg Avenue/North Street and the Dickson Street area. To divert the relatively heavy traffic flow between the downtown area and the area north of the University away from campus roads and the Wilson Park neighborhood, a viable bypass route should be selected and built. Three alternative alignments have been identified:
  1. Extending Whitman Avenue north to North Street.
  2. Extending North Gregg Avenue south to Maple Street.
  3. Extending Frisco Avenue north to North Street and south to Maple Avenue along the west side of the railroad tracks.

Campus Traffic Improvements

- Transform Garland Avenue into a boulevard that reinforces the gateway image of this entry to the campus. A reconstruction of Garland Avenue north of Maple Street should include pedestrian-friendly streetscape and a planted median.

- Targeted implementation of improvements to Maple Street between Garland Avenue and Arkansas Avenue recommended by the 1992 WALKER Traffic Study. Specific measures to increase the capacity and safety of Maple Street include the provision of additional left turn storage space and a west-bound left turn lane at Arkansas Avenue through restriping, the elimination of about 17 parallel parking spaces along the south side of the street and limited widening just to the east of Arkansas Avenue. It is **not** recommended that Maple Street be widened immediately west of Arkansas Avenue (by Carnall Hall) to provide an east-bound right turn lane. To protect the pedestrian environment along this important street, as much parallel parking should be retained as possible and street-trees and sidewalks should be maintained and improved.

- Closure of Dickson Street between Garland Avenue and Ozark Avenue. When the entire through route of Dickson Street to Garland Avenue is open to traffic, Dickson Street in the vicinity of Ozark Avenue is the site of the campus's most severe vehicle/pedestrian conflict. To sever this route, reducing traffic volume and speed, the westernmost block of Dickson Street (between Garland Avenue and Ozark Avenue) should be landscaped and completely closed to all traffic other than emergency and University service vehicles. The section of Dickson Street between Ozark Avenue and Buchanan Avenue and service areas adjacent to the Fine Arts Center will remain open to traffic, however, access to this street will be restricted by key

card gates. While Garland Avenue will remain as a street, the major campus section between Maple Street and Brough Commons should be restricted to buses and service personnel with control gates. The section of Garland Avenue south of Dickson Street, passing through the parking areas behind Yocum and Humphreys Halls, should be rebuilt as a two-way road way as far south as Fairview Street. Bus routes would have to be altered to incorporate the resulting detour (probably using Buchanan Avenue and Fairview Street to reach the Garland Avenue) but in doing so would provide more convenient service to the current and proposed residential populations south of Dickson Street.

- A traffic signal should be installed at the intersection of Buchanan Avenue and Dickson Street to address pedestrian/vehicular conflicts caused by sight distances at this location.

- Improve the intersection of Center Street and Harmon Avenue. This southern gateway carries an increasing portion of campus traffic and stands to be the major access point to the 980-space garage proposed for the site east of the School of Business Administration. To address grade-related visibility problems, Harmon Avenue and California Boulevard should be reconfigured to align at a four-way intersection with a reconfigured Fairview Street-Center Street alignment.

- A new road connecting Stadium Drive to Fairview Street running parallel to California Boulevard will provide an alternative route for through traffic traveling east/west from downtown Fayetteville along Dickson Street and Buchanan Avenue to the western edge of the campus.

Parking

Parking Displacement

The proposed building program of the master plan stands to displace a large portion of the existing campus parking supply because most prime available sites are currently used as surface parking. Phase I construction will displace 1,372 spaces, including the large lots north of maple Street, west of Garland Avenue, a portion of the large commuter lot south of Carlson Terrace, and two lots north of Maple Street between Leverett Street and Whitham Avenue. Phase II construction will displace another 1,100 spaces, primarily from the lots located north of Hotz Hall, west of Yocum Hall, north of the new Don Reynolds Business Administration Building, and south of Dickson Street across from the historic lawn.

New Parking
New parking will be built both to replace displaced lots and to serve the needs associated with new construction. Most of the new spaces will be in four large structures as follows:
Phase I:

- 740 spaces in a garage north of Maple Street between Leverett Street and Whitham Avenues to replace the surface spaces lost to residential construction.
- 960 spaces in a new garage immediately north of the Poultry Center for Excellence to replace lost surface lots and to serve new research and office space.

Phase II:

- 987 spaces in a structure just east of the additions to the School of Business Administration between Bachannan and Harmon Avenues.
- 874 spaces in a new structure south of Dickson Street, between Duncan and University Avenues, behind two proposed academic buildings.

Some surface lots should also be built to provide parking spaces for new student residents at a ratio of one space for every two beds. New lots, almost all in the neighborhood north of Maple Street, will meet the design guidelines for size and landscaping to minimize their impact on the community. Most would be located on available land behind buildings. Total surface space construction: Phase I=529, Phase II =297.

5.6 Utility & Infrastructure Improvements

Careful consideration of the utility infrastructure is necessary for any planning process for campus expansion. Although a master plan of the utility system is beyond the scope of this document, a framework should be established to further develop master planning of individual systems as the campus expands. Utilities such as chilled water, steam and electricity are sometimes taken for granted and are expected to always be available. Reliability of these systems is paramount to life safety, occupant comfort and educational and administrative activity. It is also paramount for academic research activities where interruption of one of these services can be devastating. The campus electrical distribution system includes several loops and multiple circuits for redundancy or back up, but the chilled water and steam distribution systems do not. Most of the existing utility tunnels do not have room for redundant chilled water and steam lines. In fact, some of the tunnels in the campus core area, especially through the plaza between Vol Walker Hall and Old Main, are overloaded with their present utility lines and cannot support further expansion in areas served by this utility tunnel. Other restrictions in the utility distribution concerns the chilled water flow capability out of both chilled water plants to the system. There appears to be substantial chilled water generating capacity for campus expansion if that chilled water can be delivered to the load.

Growth Areas

The northwest zone is presently served by the utility tunnel system. It is also the location of the back up electrical utility entrance to the campus. If this area is

going to be developed for academic research activities, upgrade of the chilled water distribution lines will be necessary. Steam supply and electricity to the area seem to be adequate for the current plan. To improve the reliability of the chilled water and steam utilities, a north tunnel loop may be necessary. This proposed loop could run along the north side of Maple Street and go south along the east side of Old Main to Dickson Street where it could run west to tie into the existing tunnel system just north of the heating plant. The cost of such a tunnel loop equipped with all pertinent utilities could run up to $ 12,000,000, depending on the route selected. The cost to upgrade the chilled water piping north of Maple and Garland Street to serve the northwest zone could cost approximately $700,000.

Expansion and upgrade toward the southwest will require an upgrade of the utility tunnel system south along Stadium Drive and eventually to Pomfret Hall. Completion of this utility infrastructure section will allow Barnhill, HPER, and Pomfret to be connected to the central chilled water plant in the future as their individual chiller machines are phased out. These machines use refrigerant R-11 which is no longer in production. Completion of the utility tunnel loop around the south of the campus may be necessary to serve new building expansions near the Business Administration Building as well as improving the reliability by creating a loop feed system. The completion of this tunnel loop complete with utility lines could cost approximately $9,000,000 depending on the route selected. This work could also tie into the south chiller plant from the south which could ease the restriction of chilled water flow to the system.

In order to remove the exposed overhead power lines along Razorback Road, it will be necessary to transfer the existing loads served directly from the electric utility to the campus system. These loads include Razorback Stadium, softball field, track complex and other auxiliary athletic facilities east of Razorback Road. It will also be necessary for the electric company to move the overhead power lines to the west along Oliver Street to serve the existing residential loads on the west side of Razorback Road. The campus electrical feeder to serve these complexes does not necessarily need to run in a utility tunnel. Campus electrical feeders can be conveniently run in underground duct banks. The cost of this work including the electric utility charges is estimated at $1,500,000.

To improve the standby reliability for optional utility entrances, a south electrical feed from the utility entrance near Walton Arena is recommended. Campus circuit #6 presently ends at the new Reynolds Business Building but could be extended through several existing duct banks to new switchgear near Walton Arena. This work would improve the redundant backup for electrical reliability by providing two standby circuits from this south station as well as the three existing standby circuits near the Health Center in the northwest corner of campus. This would allow backup electrical power to essentially all the campus provided the electric utility company can supply it in the event that the main campus sub-station powerhouse failed. In this scenario, the south chilled water plant would not be able to operate, but with steam available, the north chilled water plant could remain operational. The cost of extending this circuit and providing the additional standby service could be approximately $250,000.

Since all three chillers in the south chiller plant are electric drive, they cannot be served from the stand-by utility entrances other than the main powerhouse near the chiller plant. In the event of a major failure in the powerhouse, the chilled water capacity for the campus would be limited to the approximately 4,000 tons generated at the north chiller plant. If additional backup chilled water capacity is desired, some form of co-generation near the south chiller plant may be feasible. An auxiliary generator with sufficient capacity to operate one or more of the chillers may be feasible considering kilowatt demand charges that may be reduced during summertime peak usage. A detailed feasibility study is suggested to see if the economics are justifiable.

Recommendations

The priority of upgrading the present utility infrastructure is dependent on the sequence of development in the various areas of campus. If expansion for research activity in the northwest area of the campus is forthcoming, then a high priority would be to upgrade the chilled water piping north of Maple Street and west of Garland Street. If academic buildings to the east of Business Administration are built soon, then upgrade of the chilled water piping out of the south plant will be necessary in order to serve those new buildings. If a main goal is to qualify as a Carnegie Research I Institution, which may require at least a first level of backup for all utilities, then the northeast tunnel loop, and perhaps the southwest tunnel loops, should gain additional priority for development. It is highly recommended that a detailed master plan for the utility infrastructure be developed for the chosen scenarios. This plan should set forth specific phases that will anticipate the growth patterns of the campus and establish realistic budgets and timelines to make the utilities available when needed. Specific questions should be answered to establish criteria for planning these utilities. The University must first decide what levels of service interruptions are acceptable and what interruptions are unacceptable with the available resources.

The University Physical Plant already has high standards of quality for new construction on campus. These levels of quality should be maintained with considerations to the extended life cycle costs of institutional buildings. Additional recommendations are as follows:

1. Continue progress on upgrading the campus high-speed data systems. Periodic reviews of the campus system and the available technology should be routine so that the Fayetteville campus can reach and maintain a position of leadership in communication technology. New buildings or major renovations should require the latest standard in building backbone requirements.
2. The telephone system is scheduled for upgrade since it is reaching its capacity. Upgrades should consider the expansion goals of the campus and how these systems may be affected with other data transmissions systems.
3. New buildings added on campus should be served from the central chilled water and steam plants where possible. Criteria establishing isolation valve arrangement for new building take-offs of the chilled water and steam would be highly desirable to allow for loop

feeds in the future. Proper placement of valves in these piping systems will allow isolation of certain sections and still allow buildings to be fed from either direction if required.

4. New building electrical vaults should provide for loop feed switches for the primary electrical distribution whether or not the loop is extended at that time.
5. Electrical improvements at the electrical utility company's standby entrance near Walton Arena should be considered. The extension of campus circuit #6 from this area to the system would greatly improve the stand-by capability in the event of a failure of the campus sub-station powerhouse or the utility company's sub-station feeding the main entrance.
6. It may be desirable to transfer the electrical load of Razorback Stadium and other athletic facilities east of Razorback Road except Walton Arena to the campus electrical system. This work would allow the removal of the unsightly overhead power lines along Razorback Road. Reliability of this loop could be further enhanced by connecting to new switchgear near Walton Arena.
7. A plan should be developed to phase out the individual building chillers at Barnhill, HPER and Pomfret Hall. There are many advantages to operating off the central chilled water plant in lieu of replacing the individual building chillers as their refrigerant is phased out or those machines begin to wear out.
8. Since the natural gas utility company has a distribution system in place across campus, separate or area metering points seem most appropriate. For new multi-building development, a single meter serving a campus-owned medium pressure distribution system to the separate buildings should have some economic advantage over individual building metering.

Water System

Analysis of the water system has revealed that certain portions of the infrastructure need to be reinforced and upgraded to meet the current fire flow demands at the following locations: 1) to the Business Administration building at the intersection of Ozark Avenue and Fairview Street, 2) along Stadium Drive between California Avenue and Maple Street, and 3) Old Main and the Plant Sciences buildings. These improvements are needed regardless of any future building expansions and other campus improvements recommended in the master plan study.

The recommendations for water system improvements have been separated into two categories; ***Phase I*** and ***Phase II***.

The ***Phase I improvements*** recommended to upgrade fire flow capabilities are:

- Construction of a 12-inch water line from the existing 12-inch line in the service road south of Yocum Hall east to connect to the existing 6-inch line

at the southwest corner of the Business Administration Building. Estimated cost: $50,000.

- Construction of a 12-inch water line along Stadium Drive from California Drive to Maple Street. Estimated cost: $250,000.
- Construction of a 12-inch water line on Douglas Street from Whitham Avenue to Garland. This line could replace the 12-inch line proposed along Maple Street from Whitham to Garland by the City of Fayetteville. Estimated cost: $200,000.
- Construction of a 12-inch water line from Douglas Street south along Storer Avenue crossing Maple along the west side of Campus Drive to the southeast corner of the Agriculture Building to tie into the existing 6- and 8-inch lines. Estimated cost: $100,000.

The total estimated cost of the ***Phase I improvements*** is $600,000.

The recommended ***Phase II improvements*** include completion of a master water plan for the campus including updating water line maps in computer aided drawings (CAD), as well as developing a hydraulic model of the campus water system. This will allow the Physical Plant staff to model future water system improvements with respect to new facilities being planned or constructed.

In addition, other Phase II water system improvements necessary to implement the proposed master plan include the following:

- Construction of a 12-inch water line along Cleveland Street from Garland Avenue to Razorback Road to provide service to additional buildings along Cleveland Street. Estimated cost: $150,000.
- Construction of a 12-inch water line beginning at the intersection of Ozark Avenue and Fairview Street (tied to the proposed 12-inch line recommended in Phase I improvements) extending east on Fairview Street to Buchanan Avenue, then north on Buchanan Avenue to Dickson Street to provide service to new building and to upgrade fire protection in the immediate vicinity. Estimated cost: $150,000.
- Construction of a 8-inch water line immediately south of the Carlson Terrace complex between Razorback Road and Garland Avenue to provide service and to upgrade fire protection in the immediate vicinity. Estimated cost: $100,000.

- The total estimated cost of the ***Phase II improvements*** is $450,000.

Sanitary Sewer System

Based on an analysis of the existing sewer system, there are no deficiencies in the service to the present campus facilities. The recent I/I study and subsequent construction program to correct identified problems (200 infiltration sources and 360 inflow sources) for approximately $400,000 should address necessary rehabilitation within the system. However, given the age of many of the components, dating back to the late 1800s and early 1900s, maintenance and periodic line replacement will be ongoing. As with the water system, no master

utility plan has been developed, and little CAD information exists on the sewer facilities.

Completion of a master sanitary sewer plan is recommended. The plan should include an overall sewer map in CAD, along with estimated capacities of the various components of the system to be used in analyzing various development sites for the campus building program.

The recommended improvements to facilitate completion of the campus master plan building program is as follows:

- Construction of 8- and 10-inch sanitary sewer lines to provide service to new buildings proposed along the west side of Garland Avenue north of Maple Street. Estimated cost: $100,000.
- Construction of an 8-inch sanitary sewer line in Williams Street west of Duncan Avenue to provide service to new buildings proposed east of the Business Administration complex. Estimated cost: $50,000.
- Reroute the existing 18-inch sanitary sewer line to allow expansion of Carlson Terrace complex. Estimated cost: $50,000.

The total estimated cost of the recommended improvements is $250,000.

Storm Sewer System

Based on an analysis of existing storm sewer system, there are no significant service deficiencies for present campus facilities. As with the water and sewer system, no master utility plan has been developed, and little CAD information exists on the storm sewer facilities.

A master storm water plan is recommended, consisting of an overall storm sewer map in CAD, along with estimated capacities of the various components of the system to be used in analyzing various development sites for the campus building program.

The recommended improvements to facilitate completion of the campus master plan building program is as follows:

- Extension of an existing 24-inch storm sewer just west of the Poultry Science Center north to near the present location of the Fulbright Dining Hall, to provide for surface run-off for new buildings in this area. Estimated cost: $35,000.
- Construction of an 18-inch storm sewer west along Douglas Street from Gregg Street to the proposed parking garage site near Leverett Street. Estimated cost: $75,000.
- Construction of an 18-inch storm sewer east of the intersection of Williams Street and Duncan Avenue to the proposed parking garage site south of Dickson Street. Estimated cost: $65,000.

The total estimated cost of the recommended improvements is $225,000.

5.7 Phasing and Implementation

Projects identified in the master plan have been broken into two phases over a thirteen-year period. The projects identified below are intended to meet the projected growth of the University, address site improvement needs including circulation and parking, as well as meet identified utility and infrastructure needs of the campus. The recommended phasing for new development is organized to allow for maximum flexibility for implementation and to avoid premature displacement or demolition.

The cost estimates are based upon calculations of quantities and unit cost estimates. Additional contingencies for items including site work associated with new buildings, architectural and engineering fees, movable furnishings and equipment in new buildings have been included. More refined cost estimates will be required as the program and design for individual projects is advanced.

Phasing Summary

Phase I

Project Type	*Size*	*Cost*
New Research Buildings	126,000 s.f.	$25,326,000
Other New Buildings	180,000 s.f.	$26,760,000
New Student Residences	1270 beds	$74,720,000
Structured Parking	1,700 Spaces	$20,400,000
Site Improvements		$2,094,000
Infrastructure Improvements		$24,725,000
Total		$174,025,000

Phase II

Project Type	*Size*	*Cost*
New Research Buildings	217,000 s.f.	$43,617,000
Other Building Projects	217,000 s.f.	$32,720,000
New Student Residences	1,147 beds	$54,079,000
Structured Parking	1866 spaces	$22,392,000
Site Improvements		$4,797,000
Infrastructure Improvements		$450,000
Total		$158,055,000

Phase I Research							
Project ID	*Location/ Description*	*Size (gsf)*	*New Parking Need*	*Parking Displaced*	*Other Use Displaced*	*Cost Estimate*	*Rationale*
1	Research Building on Cleveland and Garland	78,000	78	230		$15,678,000	Demand for new research labs generated by increased enrollment
9	Research Building on Dickson Street	48,000	48	0	Botany Greenhouses	$9,648,000	Demand for new research labs generated by increased enrollment
	Total	126,000	126	230		$25,326,000	
Phase I Other Building Projects							
Project ID	*Location/ Description*	*Size (gsf)*	*New Parking Need*	*Parking Displaced*	*Other Use Displaced*	*Cost Estimate*	*Rationale*
8	Unspecified Academic Building on Buchanan	80,000	80			$11,760,000	New building to accommodate unspecified academic program such as School of Architecture
10	New University Museum	100,000	225	200		$28,500,000	Need facility to accommodate planned expansion of University Museum
	Total	180,000	305	200	0	$40,260,000	

Phase I Student Residences								
Project ID	*Location/ Description*	*# of Buildings*	*Size (gsf)*	*New Parking Need*	*Beds Created*	*Parking Displaced*	*Other Use Displaced*	*Cost Estimate*
2	Student Apartments along west side of Garland	5	275,400	306	612	443		$33,048,000
2	Student Apartments along east side of Garland	1	79,000	88	176	26	3 residenc-es along Garland	$9,480,000
6	Student Apartments along north side of Maple Street	1	68,000	76	151	79	Apartment building along Whitman Ave.	$8,160,000
7	Reuse of Carnall Hall as Student Apartments	1	53,000	53	106			$8,215,000
7	Student Residences Addition to Carnall Hall	1	50,000	58	117	15		$6,000,000
5	Townhouse Apartments along Leverett Street and Douglas Street	12	97,200	48	108		parking spaces behind Kappa Kappa Gamma	$9,817,200
	Total	21	622,600	629	1,270	563		$74,720,200

Phase I Site Improvements						
Project ID	*Location/Description*	*Parking Spaces Created*	*Parking Displaced*	*Other Use Displaced*	*Cost Estimate*	*Rationale*
1	Maple Street Streetscape Improvements	0	12		$200,000	Need to improve sense of place and pedestrian quality of corridor and improve traffic safety between Garland and Arkansas Ave.
2	Memorial Hall Visitor entrance		0		$85,000	Improve entrance, expansion of visitor/short-term parking and construction of visitor information Kiosk
3	Site improvements around Vol Walker	0	0		$800,000	Need to improve quality of landscape and pedestrian environment around for this central location
4	Razorback Road Streetscape improvements	0	0		$480,000	Additional street trees necessary to improve campus entry along Razorback Road.
5	Garland Avenue Boulevard					State Highway Department improvement project
	New Surface Parking Lots	529			$529,000	
	Total	529	12		$2,094,000	

Phase I Structured Parking							
Project ID	*Location/ Description*	*Size (gsf)*	*Parking Spaces Created*	*Parking Displaced*	*Other Use Displaced*	*Cost Estimates*	*Rationale*
3	Northwest Quadrant Parking Garage	336,000	960*	9	Fulbright Hall (97,000 s.f.) and Fulbright Dining (24,000 s.f.)	$11,520,000	Need to replace parking displaced by new residences, research, and meet the parking demand for these new uses.
4	Maple Street Parking Garage	259,000	740*	358	Infant Development Center, and two residences on Leverett Street	$8,880,000	Increase the supply of parking in close proximity to the core area of the campus.
	Total	595,000	0	367		$20,400,000	

* cost based on $12,000 per space.

Phase I Infrastructure Improvements	
Location/Description	*Cost Est.*
Water System Improvements	$600,000
Sanitary Sewer System Improvements	$450,000
Storm Sewer Improvements	$225,000
Steam Tunnels to the Northwest Quadrant	$12,000,000
Chilled Water Extension to the Northwest Quadrant	$700,000
Utility Tunnel to the southwest edge of campus	$9,000,000
Razorback Road Electrical Upgrade	$1,500,000
Walton Arena/Camus Circuit 6 Electrical Improvements	$250,000
Total	$24,725,000

Phase II Research Buildings							
Project ID	*Location/ Description*	*Size (gsf)*	*New Parking Need*	*Parking Displaced*	*Other Use Displaced*	*Cost Estimate*	*Rationale*
11	Research Lab building along Cleveland Street	105,000	106	142		$21,105,000	Demand for new research labs generated by increased enrollment
17	Research Lab building adjacent to Plant Sciences Building	61,000	61	0		$12,261,000	Demand for new research labs generated by increased enrollment
21	Research Lab building south of Mechanical Engineering building	51,000	51	76		$10,251,000	Demand for new research labs generated by increased enrollment
	Total	217,000	218	218		$43,617,000	
Other Phase II Building Projects							
Project ID	*Location/ Description*	*Size (gsf)*	*New Parking Need*	*Parking Displaced*	*Other Use Displaced*	*Cost Estimate*	*Rationale*
24	Conversion of Reid Hall for Research Office Space	100,000	150	0	Existing student residences (455 beds)	$10,600,000	Layout of existing building is not desirable for use as student residences, need for additional office space to support research growth.
14	Allied Health Professions Building on Student Development Center Site	40,000	40	0	Removal of Student Development Center	$5,880,000	Need to consolidate Nursing and other health profession programs in a single building
15	Renovation of Memorial Hall for Student Development Center and other Administrative Uses	34,000	0	0	School of Architecture uses relocated in Phase I	$4,250,000	Need to relocate uses displaced by removal of Student Development Center
16	Renovation of Vol Walker for Administrative uses relocated from Administration Building	49,000	50	0	School of Architecture uses relocated in Phase I	$6,566,000	Relocation of key administrative functions to central location.
19	Renovation of University Museum and addition for recreation space.	48,000	0	0	University Museum relocated to new building in phase I.	$5,424,000	Need for additional recreation space to support enrollment growth.
	Total	271,000	240	0		$32,720,000	

Phase II Student Residences								
Project ID	*Location/ Description*	*# of Buildings*	*Size (gsf)*	*New Parking Need*	*Beds Created*	*Parking Displaced*	*Other Use Displaced*	*Cost Estimates*
12	New Student Residences north of Maple Street	14	254,000	282	564	0	8 existing residences	$25,654,000
13	New Student Residences East of Arkansas Avenue	3	18,000	20	39			$1,818,000
18	New Student Residence south of Leflar Law Center	1	52,500	0	150	0		$6,300,000
20	New student residences west of Humphreys Hall	2	96,000	0	274	120	Buchanan-Droke and Gladson-Ripley (192 beds)	$11,520,000
22	New student residence south of SAE Fraternity	1	27,000	30	60	0		$2,727,000
23	New apartments at Carlson Terrace	4	60,000	0	60	0		$6,060,000
	Total	25	507,500	332	1,147	120		$54,079,000

Phase II Site Improvements						
Project ID	*Location/Description*	*Parking Spaces Created*	*Parking Displaced*	*Other Use Displaced*	*Cost Estimates*	*Rationale*
6	Dickson Street Pedestrian Plaza	0		Closure of a 675 foot segment of Dickson Street	$1,080,000	Pedestrian improvements associated with the closure of Dickson Street between Ozark Ave. and Garland Ave.
7	Garland Street improvements south of Dickson Street	70	188	surface parking	$495,000	Pedestrian and vehicular circulation improvements associated with creation of residential village
8	New recreation fields along Razorback Road	0	0	Carlson Terrace apartments (100 units)	$3,000,000	Additional recreation fields needed to address current shortage as well as space needed by enrollment growth
9	Intersection and Road Improvements at California and Center Street and Fairview Street	0	0	2 existing residences	$675,000	Intersection improvements needed to improve access to the campus from Center street and circulation south of Yocum Hall
10	Arkansas Avenue extension to Douglas Street	0	0		$225,000	New roadway will provide an alternative route for through traffic to move around the campus.
	New Surface Parking	227	0		$227,000	
	Total	297	188		$5,702,000	

Phase II Structured Parking							
Project ID	*Location/ Description*	*Size (gsf)*	*Parking Spaces Created*	*Parking Displaced*	*Other Use Displaced*	*Cost Estimates*	*Rationale*
25	Parking structure east of Business Administration Building	345,450	987	188		$11,844,000	Increase the supply of parking in close proximity to the core area of the campus.
26	Parking structure south of Dickson Street	307,650	879	386	Dickson Street Annex	$10,548,000	Increase the supply of parking in close proximity to the core area of the campus.
		653,100	1,866	574		$22,392,000	

Phase II Infrastructure Improvements	
Location/Description	*Cost Estimates*
Water System Improvements	$450,000
Total	$450,000

Draft Policies, Design Principles, and Review Procedures

6.1 The Campus Master Plan as a "Working" Tool

The Campus Master Plan is a dynamic "working" tool that shapes campus development, monitors change, and ensures the quality of project siting, design, and implementation. To fulfill the charge, this chapter outlines recommendations for Campus Master Plan policies, design principles, and the design review process intended to make the Campus Master Plan a continuing, renewable process. The following sections describe the recommended policies, principles, and procedures by category.

Campus Master Plan Policies describe the primary land use and open space recommendations of the Campus Master Plan and the procedures for carrying out and updating the Campus Master Plan, and reviewing individual projects. The policies give tangible authority to the provisions of the Campus Master Plan.

- **Design Principles** describe the fundamental design concepts of the Campus Master Plan and establish the civic structure that is the underpinning of all future development on the campus. These principles are the primary framework for directing and evaluating any campus development.
- **Design Guidelines** set forth specific policies and recommendations necessary in the site-level execution of the master plan. These guidelines are the basic tools that designers will use to ensure that projects conform to the master plan goals as articulated in the Design Principles.
- **Design Review Procedures** set forth a process for review under a Design Review Board and describe goals and objectives, project review criteria, composition of the Board, and administrative procedures. The Board and the review process should become part of the existing University administrative procedures in order to ensure that the recommendations of the Campus Master Plan are carried out faithfully.

Reference is made in this chapter to the Campus Master Plan as the enabling framework for the polices, principles, and procedures as set forth. Such reference is made in any instance where a component Campus Master Plan element provides a descriptive base for a policy or procedure.

Relationship of the Campus Master Plan to the University Planning Process

The process is conceived to integrate academic, fiscal, and physical planning as a means of making sound decisions on the development of campus facilities and improvements. The policies, principles, and procedures set forth in this chapter define the terms by which the Campus Master Plan is a contributing resource to the University-wide planning process. In summary, the relationship is as follows:

- For **Space and Facility Management**, which is the University's needs assessment phase, the Campus Master Plan provides a framework for assessing space and facility needs in a comprehensive sense. Plan elements

defining land use, development capacity, and organization of the campus can, for example, influence the determination of priorities and sequencing in the identification of needs.

- For **Conceptual Feasibility**, which is primarily the project planning phase, the Campus Master Plan provides data and contextual information that contributes to objective analysis of locational and impact factors to be considered in determining conceptual feasibility. Such factors include land use suitability and compatibility with other uses, program capacity and density, access characteristics, utility characteristics, and other locational circumstances particular to given areas of the campus.

- For **Project Feasibility**, which is typically the design phase, the Campus Master Plan provides information at a more detailed level with respect to specific site factors such as building placement, massing, services access, pedestrian and open space relationships, and other particular circumstances that bear on site planning and design alternatives undertaken to determine project feasibility. Design Guidelines inform the investigation of site and design alternatives. Early dialogue with the proposed Design Review Board (purpose and composition outlined on pages 6-37 through 6-40) may be useful in strengthening the feasibility assessment of projects likely to have a significant impact on (or contribution to) the campus as a whole. Such review may also define the "civic domain" to be encompassed in the project, which will bear on its feasibility.

- For **Project Implementation**, the Design Guidelines set forth in the master plan provide practical guidance as to the form, massing, and site relationships to be incorporated in the specific design of the project. The formal procedure of review by the Design Review Board applies to both the monitoring process and the requisite dialogue to ensure design quality and civic contribution to the campus environment through the project implementation phase.

6.2 Master Campus Policies

The following policy statements set the terms by which the University adopts the main elements of the Campus Master Plan, in particular the framework for the Campus Master Plan and the procedures for ongoing decision-making relative to the Campus Master Plan. The Campus Master Plan policies address the following:

- Land use and density provisions of the Campus Master Plan

- Open space provisions of the Campus Master Plan

- Procedures for implementing the Campus Master Plan and design review of individual projects.

Land Use and Density

Policy 1: When locating facilities, the University will abide by the land use and density provisions described and illustrated in the Campus Master Plan in order to maintain compatibility of uses and to maintain efficient use of the land resource. Further, the adoption of land use and density provisions will ensure the concentration of residential, academic, research, and academic support facilities within and near the current campus core.

Open Space

Policy 2: The University will protect and maintain existing open areas of significance to the campus:

- Resources such as the lawn in front of Old Main, and other linking open spaces are reserved as critical open areas except in instances in which careful in-fill construction further defines and enhances an important open space.

- Continued preservation, planting, and reclamation of native and cultivated landscapes will be undertaken in order to maintain visual and biological diversity.

- Significant vistas and visual linkages will be maintained as illustrated.

Policy 3: The University will preserve the Arkansas Agricultural Research and Extension Center for agricultural field uses (with such supporting structures as are necessary to serve the field uses) and exclude the area from other non-agricultural development in order to preserve the land resource for unforeseen and evolving long range needs that require undeveloped, tillable land.

Administrative Procedures

Campus Master Plan Review and Updates

Policy 4: The University will delegate to its Design Review Board the authority to periodically review the status of land use and facilities program development on the campus. The administration of such review will be through the Physical Plant office. The charge will be to identify trends or the need to change use patterns, density, program affinities or relationships to open space, circulation and utility patterns that might affect the land use plan, and to determine whether such circumstances should be corrected to maintain the integrity of the land use plan, or cause the plan to be altered or amended to reflect valid needs.

Policy 5: The University will delegate to its Design Review Board the authority to undertake an annual review of the schedule of capital improvements to ensure that the capital improvements are consistent with the land use, density, and development factors as described in the Campus Master Plan, and that such improvements are acknowledged in the periodic review of the Campus Master Plan. The administration of such review will be through the Physical Plant office.

The review may also identify opportunities to meet University facilities needs more effectively by:

- Identifying ways that a project can serve multiple needs.
- Combining proposed projects.
- Coordinating activities relative to leasing, acquisition, disposition, and project development.

Policy 6: The University will delegate to its Design Review Board the authority to coordinate the Campus Master Plan with plans and studies for acquisition, disposition, and leasing of property within and contiguous to the campus. Such coordination will include:

- An assessment of how such acquisitions, dispositions, or leases affect or are affected by the Campus Master Plan with respect to land use, density, open space, traffic, utilities, and other factors bearing on the resources, quality, and organization of the campus.
- An assessment of whether such measures may cause the Campus Master Plan to be altered or amended.
- The application, in the case of leases or subleases of campus land to non-University entities, of land use, density, open space and circulation provisions, design guidelines and design review procedures set forth in the Campus Master Plan

Project Review

Policy 7: The University will delegate to its Design Review Board the authority to undertake a design review process for proposed projects as described more fully on pages 6-38 through 6-40 of this chapter. Members of the Design Review Board will be appointed by the Chancellor of the University and will serve terms of three years.

Policy 8: Through the design review process, the University will assess proposed projects by comparing them with the land uses, densities, and open space provisions of the Campus Master Plan. Upon the determination of appropriate location and consistency with use and

density guidelines, the University will review the proposed improvements in light of the Design Principles and make recommendations as necessary to ensure the project's consistency with the design intent of the Campus Master Plan.

Policy 9: The University will assess proposed projects in a comprehensive manner that takes into account the suitability of the site and the cumulative consequences of development in regards to on-campus and off-campus development constraints, conflicts, or limits vis-à-vis traffic, infrastructure, and drainage. Site suitability will address topography, soils conditions, drainage, utilities and infrastructure, vehicular and service access, and program affinities.

Intergovernmental Relations

Development of a planned intergovernmental relations program will be vital to the success of the master plan. The University is dependent on the infrastructure of the City of Fayetteville and the Arkansas Highway and Transportation Department (AHTD). Infrastructure such as access and perimeter streets, drainage and water and sewer services are, to one degree or another, fully or partially provided by the City of Fayetteville.

The planning and building inspection policies of the city control development and/or redevelopment of property and buildings that are undertaken by private landowners. This master plan has identified a long term growth boundary so that the University does not migrate into nearby neighborhoods by purchasing property and converting the land to University uses such as parking lots, etc., which are markedly different from the standard for the remainder of the City. Coordination with the City of Fayetteville, is essential if the campus zone concept is successful.

An integral part of the campus transportation system includes Arkansas State Highway No. 112 which traverses the campus along Razorback Road; Maple Street between Garland and Razorback Road; and Garland Street from Maple Street north. Improvements and maintenance of these roadways are of vital importance to the implementation of the master plan. Therefore, coordination with the AHTD is also essential.

Policy 10: The University shall appoint a subcommittee of the Design Review Board to form the "Intergovernmental Relations Subcommittee." The subcommittee shall consist of at least three members but not more than five. The committee shall meet quarterly with the Technical Review Committee of the City of Fayetteville, plus a representative of the AHTD as designated by the District Engineer. The subcommittee shall keep the city and AHTD apprised of projects that are being considered, at the earliest stages of the planning process. The subcommittee shall report back to the Design Review Board comments received from the city and AHTD.

6.3 Design Principles

The following general Design Principles are to direct the planning of future building and site improvements for the purpose of improving the quality of life on campus and the quality of the environment and character of the campus. The Design Principles describe minimum conditions, indicate a direction, and convey a certain ideal of campus form. More specific recommendations concerning landscape and architectural projects are described in the next section as Design Guidelines.

Open Space and Site Design

Principle 1: The organizing system of interconnected corridors, plazas, and quadrangles should be preserved, reinforced, and extended with any new development in the Academic Core area. As outdoor public halls and rooms, they create memorable images and perform a vital civic role.

- Pedestrian corridors must provide primary access to campus facilities and quads to maintain their importance as the principal interior circulation and spatial organization system.
- Plazas should be ordered and inhabitable.
- Quadrangles should be improved and created with clear boundaries and cohesive landscaping and pedestrian circulation schemes.

Principle 2: Romantic or naturalistic landscapes are special places on campus and also serve as important public rooms within the civic structure. These landscapes should be preserved and reinforced whenever possible. Since it is difficult to provide a precise set of prescriptive rules for their design, new romantic landscapes should be created only with great attention to detail and a high level of design quality.

Circulation and Parking

Principle 3: Vehicular access from the regional road system to the campus should be improved for both visitors, and commuters through improved signage and graphic wayfinding systems, entry and gateway improvements and operational improvements such as signalization, directional changes, and intersection geometry.

Principle 4: The primary circulation system on the campus will be comprised of internal campus streets and adjacent city streets. The character of the internal streets and the

relevant city streets should serve to unify the constituent areas within the campus.

- City streets will no longer provide direct access through the core of the campus, but will be restricted to the edges of an enlarged contiguous core.

- The internal streets will be an interconnected series of road segments (many severed from the existing city street network) whose width and "character" are compatible with the grid and pedestrian scale of the central campus and the surrounding neighborhoods.

Principle 5: Streets on the campus should function as both circulation routes from one destination to another and as linear spaces that relate to the buildings fronting onto them and connect campus to neighborhood. The most successful streets are both connectors and places in their own right.

Principle 6: Streets should have well-defined edges and provide visually interesting linear view corridors. The planting, paths, and treatment of the ground plane must emphasize the longitudinal nature of the street. Where appropriate, visually significant landmark buildings should provide a terminus to view corridors along important streets.

Principle 7: Street corridors should serve not just as vehicular routes but also as primary pedestrian routes.

Principle 8: Pedestrian and, to a lesser extent, bicycle paths are important forms of transportation and should connect both to destinations off campus and to key destinations within the campus boundaries. To encourage greater use, these pedestrian and bicycle connections should be improved and redefined.

- If bicycle traffic increases, bicycle paths should be created to alleviate bicycle use on pedestrian paths and minimize pedestrian/bicycle conflicts.

Principle 9: Surface parking in the campus core area that is displaced by new facilities and site improvements should be replaced in strategically located, well-designed parking structures.

Community Interface

Principle 10: The edges and entries that define the University as a major regional destination within the larger urban fabric should be clarified.

- Campus edges should be distinguished by gateways, landscape, and design character that is consistent with the character of the campus but compatible with the diversity of the adjacent neighborhoods.

Principle 11: The campus and the adjacent community should be connected by open spaces, pedestrian and bicycle ways, and streets.

- Pedestrian routes that connect the campus with the off-campus population should be identified and enhanced in order to encourage more walking and bicycle traffic in lieu of automobile commuting.

Principle 12: On-campus land uses should be developed to be compatible with adjacent urban neighborhoods and should minimize adverse effects. Densities and design quality should also be compatible.

Character of Buildings in the Campus Setting

Principle 13: New development should be primarily urban in character. Urban buildings are those which create, reinforce, and define the public open spaces of the campus by delineating the boundaries of these spaces.

- Their facades and spatial form places emphasis on the public outdoor space which the building fronts, rather than on particular parts of the building's program.

Principle 14: Development should balance individual expressiveness with contextual responsibility. Buildings should enhance and elaborate the civic qualities of the public outdoor spaces of the campus.

- While every building ought to have its own identity and personality, buildings should also express a general consensus about architectural design and about the spatial structure and architectural character of their district. By their agreement with each other about the general parameters and intentions of architectural design, these buildings establish the architectural character of their district as a whole.

Principle 15: Landmark buildings are exceptional and should be judiciously located at crucial nodes in the plan of the campus. This special status should be considered for buildings with a program that is public in character.

Principle 16: In the design of University buildings and associated outdoor spaces, opportunities should be sought to express the housed activity or mission.

- Site sculpture, graphics, site composition, and surface finishes of outdoor entry courts can be used to symbolize the academic endeavor.

Principle 17: Development of buildings in dispersed arrangements where building have no compositional relationship to one another should be avoided. Such "suburban" buildings do not contribute positively to the campus environment or their surroundings.

- Suburban buildings are typically irregular on the exterior and do not address the adjoining street or open space with facades and/or identifiable entrances. These buildings generally derive their form almost entirely from the expression of private internal programmatic components rather than from an understanding of the ideals and purpose of their surrounding environment.

- Existing suburban buildings should either be replaced as time goes by or be modified to enable them to perform a larger civic role. Candidates include the Alpha Gamma Rho Fraternity, The Administrative Services Building, and the Physical Plant Complex.

Urban Design and Architecture

Principle 18: Buildings should have a civic role that strengthens the civic structure of the campus by defining its spaces.

- Campus buildings must provide definition and enclosure for outdoor public spaces and help give them their distinctive memorable qualities.
- Buildings must define, reinforce, enhance, and articulate these spaces by their siting and massing and by the materials and design of their facades.
- Campus buildings are to be primarily space-defining buildings, rather than space-occupying buildings.

Principle 19: There should be a reciprocity between landscape and building, and an integral relationship between them.

- Buildings and landscape should be designed in conjunction, so that each refers to the other and emphasizes the importance of the other. Neither is neutral; they both actively condition each other.

Principle 20: Serious consideration should be given to maintaining and preserving "contributing buildings," which include any building or property (regardless of age or of current level of maintenance) that positively contributes to the overall quality of the physical environment.

- Many of the pre-1950 buildings of the core campus exemplify desirable principles of architectural and urban design, are worth preserving and warrant close study, both for their specific design solutions and campus contribution.

- Conversely, equally serious consideration should be given to replacing or modifying "non-contributing buildings," which include any buildings (regardless of age) that do not make a positive contribution to the overall quality of the physical environment.

6.4 Design Guidelines

Design guidelines establish more specific criteria to be used in directing future building and site design efforts as the Campus Master Plan is implemented. While each new project will present its own set of unique opportunities and constraints, having design guidelines as a reference ensures that all projects developed over time can exhibit consistency in materials, form and character, while simultaneously allowing flexibility for positive innovation. The goal is to achieve an integrated, coherent campus environment of high quality, the parts of which relate to one another as prescribed in the Design Principals, regardless of when they are built.

For the purpose of this document, separate design guidelines have been developed for landscape and architecture, despite their obvious inter-relatedness. The landscape guidelines are followed by descriptions of design solutions for identified project areas in the master plan. The Architectural Guidelines are followed by specific siting recommendations for proposed new buildings in the master plan. Together with the Design Principals, these guidelines are intended to provide a comprehensive document which can both inform decision-making in the short term and guide long-term goal-setting.

Landscape Guidelines

The spatial organization of the campus landscape is primarily determined by three major components: space between buildings, topographic form, and woody plants consisting of trees and shrubs. Paths and roads also contribute an important organizing function, but their role is subordinate to the three-dimensional strength of buildings, land form, and woody vegetation. The limits, emphasis, and character of spaces within and around the campus are defined largely by these latter elements.

Trees and shrubs should not be understood as superficial, decorative objects to be arbitrarily set out on the campus grounds, but rather as design elements that define basic spatial order and can, in turn, significantly influence the quality of campus

life. Indeed, design elements like trees and land forms assume broader meanings only by virtue of the way they are arranged and the order of the positive spaces they define. All design elements should be purposefully used to achieve desired functions and spatial effects such as:

- Limiting or directing views;
- Establishing an ecologically responsible, fiscally prudent landscape;
- Creating microclimates;
- Framing spaces to create compositional enclosure;
- Creating desired mood such as intimacy or expansiveness;
- Reinforcing campus image;
- Defining major open spaces, circulation corridors, and entrances.

Open Space

The existing and proposed open spaces of the campus should rely on the use of large shade trees, a sweeping ground plane, and simple furnishings and paving to establish or perpetuate their character. Properly handled, these spaces can be perceived both individually, as unique places, and, when taken together, as a system that forms the backbone of the campus landscape, stitching the disparate elements of campus life together. The vitality of these spaces depends on their flexibility to accommodate a nearly unlimited number of ever-changing uses and interactions over time from large assemblies and impromptu frisbee games to April sunbathing and quiet reading under a tree. Every effort should be made to encourage and preserve diversity of use in these important spaces.

Plazas/Courtyards/Terraces

Because these are the places where people are most likely to congregate regularly, architecturally-defined open spaces such as plazas, courtyards and terraces provide opportunities for more highly detailed, civic, design solutions where walls, steps, lighting, seating and paving are more dominant. Simplicity of expression should be observed, however, with design elements responding to the vocabulary of materials, forms and environmental conditions of their context. For example, site sculpture, graphics, site composition, and surface finishes of outdoor entry courts can be used to symbolize the activity housed in the associate building.

The composition of elements should also adhere to the principles of design for defensible space: clear visibility should be maintained at the ground plane; site-lines into the space from adjacent buildings and spaces should be preserved; and traffic patterns that avoid dead or isolated zones should be established

Edges and Gateways

Creating boundaries and entries which successfully signal arrival and a sense of place are important to perceptions of a strong campus identity. The arrangement of streets, building facades, lighting, fences, landmarks and signature buildings, and plant materials all help to define edges and gateways within the campus as well as between it and the larger community. Creating a hierarchical system of entrances and edges helps people understand the landscape, navigate through it in comfort, and remember it. The quality and character of boundaries and entry

points at the University are uneven. Clarification and/or reconfiguration are required to make strong edges and gateways into the campus.

Planting

Scale

The size of trees, shrubs and plant beds should be considered carefully with respect to their proportional relationship to campus buildings, roads, pathways, topographic conditions and nearby spaces. Large buildings and the often expansive spaces between them typically found in a campus setting dictate the use of tall, stately trees in rows or large clumps, and sweeping masses of small trees and shrubbery when planting at the campus-wide scale. However, small trees, shrubs, perennials and annuals are more appropriate choices at the human or garden scale, in small plazas or at building entrances where people congregate. Overly intricate plantings which are out of character and scale with their setting should be avoided.

The University of Arkansas's topographic variety dramatizes the scale issue and should be carefully handled to avoid turning this asset into a liability by failing to take steep slopes into consideration when making plant selections.

Scale is also important to campus image and should be exploited through thoughtful design to strengthen a sense of place across the campus. For example, mature trees lend a sense of history, permanence and strength to an institution's image.

Pattern

The general pattern of existing tree groups on the campus is largely informal and non-geometric. As a rule, this practice should continue. Not only is it appropriate to the regional and local context of the campus, but an informal planting pattern has the added advantage of accepting losses and additions while maintaining compositional integrity. The proper opportunities to use geometrically arranged plants are along streets, along major axial walkways, and in courtyards and plaza spaces regularly defined by architecture.
Appropriate use of this style of planting would be along the east/west pedestrian corridors of central campus and the north-south corridor just west of Old Main.

Any tendency toward residential-scale gardening with fussy combinations of plants should be avoided. Single foundation plantings, dotted across the face of a building in an effort to mimic the repetitive pattern of walls and windows, invariably fail to capture interest or hold their own against the scale of the architecture. The preferred approach to foundation plantings is to employ large masses of native plants which require low maintenance and create a unified composition properly scaled to the size of the building.

In most instances, such planting is not justified. In the area around Brough Commons, many of the plants are overgrown or have passed their peak as an aesthetic treatment. The raised planter at the intersection of Dickson Street and Ozark Avenue, commemorating the donation of the land for the University of Arkansas by the McIlory Family, contains small areas of seasonal color, native

stone borders, and detailed shrub plantings. It would have a cleaner appearance if it were simply planted with a more massed planting of shrubs, ground covers, and seasonal color.

Form

Large deciduous trees are the dominant tree form on the campus. These trees are supplemented with a limited number of evergreen coniferous trees, a very limited number of broadleaf evergreen trees, and several varieties of small flowering trees. The planting ratios are generally reflective of what would be expected in the natural wooded areas of northwest Arkansas.

Composition of Species/Diversity

The most successful group plantings on the campus are those composed of single species or multiple species which share a high degree of visual similarity and reflect the natural associations found in the Northwest Arkansas landscape. Plantings of single species or multiple species with sympathetic forms are encouraged both in naturalistic and geometric designs.

However, by relying on too limited a plant palette in an effort to create visual unity, there is a danger that the landscape can become both monotonous and ecologically unstable. To avoid this problem, a balanced selection of recommended trees, shrubs and ground covers has been identified that:

- Exploits seasonal color, flower and fruit, with a particular emphasis on the academic calendar year;
- Harmonizes with each other as well as the regional landscape in terms of form, silhouette and branching pattern;
- Is diverse in both species and longevity so that resilience is maintained even in the event of unforeseen environmental events;
- Is well adapted to the climatic conditions of the region and microclimates across the campus.

Native Plants

To the practical extent possible, tree and shrub plantings should consist of species that are native to the Ozarks region. The use of native plants not only enhances the possibility for successful plant adaptation to the campus environment, but also creates a visual setting that harmonizes with the characteristic beauty of northwest Arkansas. The use of non-native plant material should be the exception, not the rule, and in no case should non-native, invasive plant material be selected. There is great intrinsic beauty in the native flora, and its use should be a guiding principle in planting design to capitalize. Over time, the use of indigenous plants will create a distinctive, dignified, and sustainable campus landscape. With this in mind, the limited introduction of non-native specimen plants, such as bald cypress, cedar of lebanon, and mock orange, has been appropriate primarily because of its educational value.

Maintenance and Pruning

Because trees and large shrubs are so critical to the quality of life on campus for students and faculty, as well as to the image projected by the University to the

public, they are too valuable to neglect. A campus-wide inventory and assessment should be undertaken by a certified arborist to determine the extent of the work--limb removals, thinning, bracing, cabling, fertilizing and removals--required to ensure the long-term health and safety of existing campus trees and large shrubs.

The inventory would serve as a basis for the development of a long-term maintenance program which should include planned new planting and maintenance of mixed-age plantings. The plan should be proactive rather than reactive so that pests and diseases cannot take hold.

A tree protection policy should be adopted and enforced, and should include tree preservation guidelines such as maintaining a setback of at least 30 feet for buildings, roadways and paved areas from the dripline of trees slated for preservation.

The natural forms of plantings should be retained through proper pruning. Heavy shearing to limit shrub size usually results from misjudgments at the time of planting, either from improper plant selection or failure to provide adequate growing space. There are a number of examples of this condition evident in foundation plantings, such as the yew planting at the east end of the Chemistry Building, several shrub plantings adjacent to Ozark Hall, and other locations across the campus. It is recommended that labor intensive plantings of this kind be phased out over time. Careful plant selection ensures a healthier, more attractive and less expensive landscape in the long run. The native plant material recommended herein should require only simple, periodic thinning and/or renewal pruning of dead branches.

Tree pruning should be started early in the life of campus trees to ensure that a proper form is established, that the canopy is established sufficiently high to provide clear visibility beneath branches, and to allow sunlight to penetrate to vegetation below.

Slopes exceeding 33 percent are very difficult to mow and are a safety concern for those who must maintain them with weed eaters and riding lawn mowers. The majority of slopes on the campus are treated by planting Bermuda grass sod. This treatment is effective for unshaded slopes, and those not susceptible to the wearing effects of foot traffic. However, as the slopes become steeper, the maintenance of these turf areas becomes more difficult. All shaded slopes, slopes where erosion has begun, and slopes exceeding 33 percent, should be planted with groundcovers at 4 to 6 inches on center (i.e., euonymus, vinca, honeysuckle, etc.) in mass with jute mesh erosion control mat and wood mulch. These beds need to be mulched and weeded until the ground cover is established, but the long-term maintenance savings will offset the initial installation cost. The area to the east of the Greek Theater should be considered a candidate for reforestation/revegetation.

Alternative bank treatments might include low-maintenance native grasses, hemerocallis species, spreading junipers, meidiland, groundcover and flower

carpet roses, rosa rugosa, forsythia, cotoneaster and low growth wildflower mixes.

The majority of the slope problems occur in the area around the edge of the plateau of the campus core. Steep slopes occur adjacent to the Greek Theater and Science Building, in the residential area to the west of Humphreys and Yocum Halls, and to the west of the Arkansas Union. The proper design of the proposed buildings in the new residential area south of Gregson Hall will assist in the correction of the related slope problems. If these projects are delayed or planned as a later phase, it is recommended that the steeper slopes in these areas be treated with ground cover planting as described above.

No recent development has taken place on the slopes around campus, so retaining walls have been previously placed as required. No sites were observed where new retaining walls are recommended.

Generally, management of the landscape should be flexible and opportunistic, taking advantage of natural processes. Specific plant choices should be determined by soils, exposure, use and available space. However, planting and management plans for larger areas or ecosystems may allow for the long-term succession of initial plantings to quite different ones.

Lawns

The role of turf in campus life is substantial. Few spaces on campus have more potential for accommodating a broad range of activities as an inviting green lawn. Beyond providing grass fields for active recreation purposes (organized athletics), it is highly desirable to create areas for passive recreation and relaxation incorporated into an overarching open space system. Turf is the ground plane that typically defines these gathering places just as it often stitches these areas to one another.

Deteriorating lawns are more than unattractive; they seriously detract from otherwise inviting spaces, making a substantial portion of valuable campus real estate unusable. They also negatively impact campus image. Whether due to compaction or poor soil, grading or slope conditions, declining turf areas should be re-graded, drainage structures added where necessary, and the soil reconditioned and re-seeded to establish a healthy turf. Slopes too steep to mow should be planted out. Areas expected to absorb salt from winter plowing should not be turfed or alternatives to salt should be investigated. Regular mowing and annual maintenance is necessarily required but can be highly cost effective when quality of life and public image issues are factored in.

Streets and Walkways

The planting objective for streets and walkways is to help make them clearly recognizable as continuous spatial corridors. When this is achieved, the motorist, cyclist or pedestrian automatically comprehends connections between campus destinations and to the surrounding community. These linear linkages should be prioritized according to their location, their projected function and capacity, and their importance in the overall design. Lighting, furniture, and especially plant materials are extremely useful in defining spatial corridors and prioritizing them.

Conversely, the view down streets and walkways should not be interrupted by spot developments of planting beds, bench areas, parking lots, diagonally parked cars, bike racks, etc.

Because plants come in so many forms, textures, sizes and colors, arrangement possibilities are almost infinite. However, a prototypic street/walk arrangement would include regularly-spaced overstory trees and lighting in a grassed planting strip between on-street parking and a generous sidewalk. Generally, all streets and walkways should be properly scaled, well marked with appropriate signage, well lit and unambiguous as to their appropriateness for pedestrian, cyclist and/or vehicular traffic.

Streets

As a general rule, campus streets should be planted with deciduous canopy trees that will provide foliage at a height of fifteen to forty or sixty feet above the ground, while allowing a clear view under the branches. The trees and lighting should be on aligned on both sides of the street and the species should be the same along a given street. Changes in species should be coordinated with logical shifts in road alignments or at intersections. Arbitrary changes in species or mixing a variety of species on a given street should be avoided in the interest of maximizing visual continuity. Exceptions to this can be entertained if the mixed species have very similar size, form and texture characteristics or where existing trees occur.

Pedestrian/cyclist crosswalks should be clearly marked with striped paint or special pavements and should include required curb cuts. Crossings should be sited for safety as well as design integrity.

On-street parking is encouraged where it can be accommodated, particularly along busy streets. This protects pedestrians from moving vehicles, acts to reduce speed in the vicinity, and reduces the need for more parking lots elsewhere. The impact of a hundred cars along a linear corridor is far less than a hundred cars in a surface lot.

If bicycle use increases above current levels, bike lanes are recommended where street dimensions permit. Shared lanes for cars and bikes should be clearly marked. Students should be fully briefed on cycling conditions and regulations as part of their orientation.

Walkways

Walkways on the University of Arkansas campus are of particular importance because of their historic value as Senior Walk. Walkways link important campus spaces and should harmonize with them. However, they are more than a means to get from one place to another. On the contrary, they can be memorable places in themselves, sequentially revealing the landscape to the pedestrian in motion. This experience naturally varies with the topography, orientation, paving and plant materials used (or not), and of course, with the design. Thinking about paths and walkways in this larger context--as opportunities to enrich the campus experience--is encouraged.

Campus walkways should be of a consistent material and detail. Scored concrete should be adopted as the University standard for new and replaced walkways. Paving materials should be consistent in color and texture and should stand up to freeze-thaw cycles, salt treatments and vehicular traffic. Walkway widths should vary according to hierarchical importance and function. Primary pedestrian walkways are proposed at 12 to 18 feet in width; secondary walks at 8 feet; combination pedestrian/service walks at 10 feet; and minor walks with light foot traffic at a minimum of 6 feet.

Special pavements are recommended for significant walkways, building entries and plazas. Walkways at building entrances should be edged with paving bands, curbing or low seat walls where appropriate.

It is recommended that walkways follow the contour of the land to integrate them into the landscape. Adjacent lawns should be graded so that walks do not form ridges on the land but, in fact, are slightly depressed into the slope. Positive drainage should be maintained on all walkways through careful fine grading.

The University's dramatic topography makes it very difficult to accommodate the handicapped. Designers should make every effort to relieve problematic conditions when siting pedestrian pathways, setting finished grades for parking lots, designing drainage systems and siting building entrances.

Furnishings

It is recommended that a standard palette of furnishings be established for the campus. Benches, light poles and fixtures, trash receptacles, kiosks, bike racks, bollards and signage should be used with consistency across the campus. This contributes to campus definition and order, and reinforces its physical integrity and image.

Benches

Most of the recent bench installations on campus have been of a heavy wooden contour bench with a painted steel frame. This bench type is of an appropriate scale for campus use and of a sufficient strength and quality to have a long life expectancy. New benches should be of this style, and existing benches of other types across campus should be removed if not used, or replaced. The exception would be monumental bench seating areas such as those in the area to the northeast of Vol Walker Hall.

Trash Receptacles

Numerous trash receptacle types are used on the campus. It is recommended that a more decorative trash receptacle of steel construction with a heavy plastic liner, such as the ones placed adjacent to Old Main, be used across campus. These receptacles are generally offered with matching ash urns, and the option of adaptation for use as recycling receptacles, if the University plans to continue this program. The color should match light fixtures.

Lighting

Campus lighting should be organized in simple patterns which respond to the open space network of the larger campus but which also are sympathetic to campus's more intimate spaces.

The layout of lighting fixtures should follow the regular patterns of walks, roadways and buildings. This not only aids pedestrian and vehicular circulation, but simultaneously reveals the lines of campus structure. A uniform setback should be maintained along pavement edges for all fixtures. Spacing should be regular and consistent with the rhythm of trees along walks and roadways. Open space lighting should fall along the perimeter of the space to emphasize its form.

Illumination levels should be unobtrusive and glare minimized without compromising real or perceived safety and security on campus. Building-mounted lights should be low-glare fixtures and employ lamps with good color rendition, particularly at building entrances. Street lamps should be mounted at a height of 14'-6", while fixtures along pedestrian paths and open spaces should maintain a height of 10'-6". Fixture spacing needs to be determined on a site-specific basis.

Electrified bollards, well lights and fixtures embedded in walls or steps are not recommended due to their high failure rate and maintenance requirements.

Emergency Call Boxes

There are blue emergency call boxes located throughout the campus. In spite of an overall perception that the campus is a safe environment, there have been instances where students have been uncomfortable at night in areas of dense shrub plantings. The emergency call box network should be reviewed and revised as required to coordinate with proposed campus-wide lighting, planting and circulation.

Signage

Signage should reinforce the pedestrian scale of the campus and adjacent neighborhoods, communicate information effectively, and project a clear, organized image of the University. A full range of sign types should be developed, reflecting a predetermined hierarchy of scale and importance. Signage should be coordinated with the new building signage standard design which has been recently installed on campus. Vehicular, pedestrian, directional, identification and informational signs should all be included. Graphic format, size, proportion, and color should be all be standardized in an effort to create a basic vocabulary for campus-wide signs, making them instantly recognizable and understandable. Directional signs should be at a scale appropriate to passing motorists without impinging on the overall pedestrian scale of the campus.

Bicycle Lots and Racks

Bicycle parking areas should be located in convenient proximity to desired destinations but not in prominent view. They are best sited at the edges of campus spaces and movement corridors, for example, against the edge of a building, between the building and the sidewalk, screened by a low hedge and shaded by canopy trees.

Bike racks should have a simple, functional design that permits locking both the frame and the front wheel.

Parking

The needs of the pedestrian are at the heart of any campus planning project because academic and social exchange among students, faculty and the larger community is fundamental to the success of the institution. These exchanges are most likely to take place in comfortable, attractive and meaningful spaces on campus. However, as more and more acreage is relegated to parking lots, spaces for interaction fragment or disappear, landscapes degrade due to stress, and the scale of campus life subtly shifts from that of the pedestrian to the car. Pedestrians are left disoriented, uncomfortable or worse. However, while the car is a fact of modern life and must be accommodated, it need not be the overriding force behind planning decisions. By relegating a large proportion of parking to efficient structures and the periphery of campus life, and providing drop-off, handicapped and service access to the campus core, acres of lifeless storage space are freed to be re-colonized by people. By locating parking and vehicular access away from the center of campus, pedestrian/vehicular conflicts are also minimized

Parking garages should be unobtrusive to the campus environment through the use of quality facade materials and possible non-parking ground floor uses. Both vehicular and pedestrian access should be clearly visible and well marked.

Where surface parking does exist within the campus core, the following guidelines are recommended. Off-street parking should be located in the rear of buildings or in interior parking courts shared by a number of buildings. No off-street parking should be permitted near front entrances. No parking should be constructed within 20 feet of any building face. No single contiguous lot should be larger than one acre in size. Multiple entrances to larger lots should be provided to minimize stacking on adjacent streets.

Remote lots outside the core may be larger but should be as carefully landscaped (as specified below) to soften their impact on surrounding areas.

The perimeter of off-street parking areas should be screened to minimize views of cars. Pavement and parked cars should not be visible from streets or adjacent buildings. Indigenous shrub masses, hedges or fences are recommended to ensure that the natural landscape and architecture dominates views. The internal area within surface parking areas should incorporate landscaped islands, divider islands, trees and shrubs to minimize views of parked cars. A minimum of one canopy shade tree should be planted per ten surface spaces. These trees should be planted in landscaped islands which are a minimum of 8 by 20 feet or 160 square feet. Adjacent surface lots should share a minimum 8-foot planting strip between lots. Such planting strips should be planted with 3-inch caliper trees, spaced 30 feet on center.

Pedestrian walks should connect all off-street parking to adjacent buildings and the larger pedestrian walkway system. Parking lots must incorporate a sufficient

number of parking spaces for the handicapped as mandated by ADA guidelines. Particular attention should be paid so that handicapped spaces are concentrated as near as possible to building entrances that are designed to accommodate the handicapped.

On-street parking is encouraged where street cross sections allow it and it does not compromise pedestrian safety or design integrity.

Landscape Projects

This section describes proposed landscape projects as illustrated in the master plan. All projects fall into one of four sub-categories: open space projects; outdoor gathering spaces and circulation axes; campus streets/walks/gateways; and recreation.

Open Space Projects

The lawn in front of Old Main Lawn will always be the primary open space on campus. This space should remain relatively unchanged in circulation and vegetation, with the exception of the possible addition and extension of some walkways as illustrated in the plan. Site furnishings and lighting should be upgraded in accordance with the above guidelines.

Many of the new open spaces illustrated on the master plan rely on the construction of new buildings for spatial definition, or on demolition of existing buildings to allow room for the open space. The design of these spaces should occur in conjunction with the design of buildings, and follow the guidelines established in this report. Design of the spaces should relate to the surrounding buildings. The new space created to the west of Humphreys and Yocum Halls should accommodate the more active uses related to outdoor living spaces. The new space created by the removal of the apartments to the south of the Greek Theater should serve the more passive uses of studying and visiting between classes.

Outdoor Gathering Spaces and Circulation Axes

The master plan illustrates proposed locations for several new pedestrian paths, and the upgrading of other paths through campus. As the campus is developed to the north and south, some pedestrian axes will gain importance. These major walks should carry on the tradition of Senior Walks. Specific emphasis in upgrading the pedestrian system should occur at the west side of the Library, where the existing plaza acts to inhibit the proper flow of pedestrians. As the northwest portion of the campus is developed, the pedestrian access across Garland and Maple Avenue will be of great importance.

Nodes will naturally occur at the intersections of major pedestrian walks. Important nodes, or gathering spaces will occur at the northwest and southwest corners of the Library, and at the south side of Gibson Hall. When Dickson Street is converted to a limited access street, and the space between Ozark and Garland Avenues becomes more pedestrian friendly, additional amenities should be provided. Paved areas should be provided for gathering away from the

circulation paths, and associated bench and trash receptacles should be planned as part of the design. Large deciduous trees should be strategically placed adjacent to the space to provide additional comfort during warmer weather.

Campus Streets/Walks/Gateways

A plan for vehicular and pedestrian circulation should be established to ensure safety and consistency in street and walkway character. Razorback Road, the portion of Maple Street between Razorback Road and Garland Avenue, and Garland Avenue north of Maple are designated as highways, and will be subject to the approval of the Arkansas Highway and Transportation Department. The University of Arkansas should propose improvements that help define the campus edge in the design of these streets. Elements described in the Development Guidelines of the master plan should be included to the greatest extent possible. The installation of curb and gutter, burial of above grade utilities, and installation of underground drainage along Razorback Road should be a priority. A potential source for appropriate street design standards is the Institute of Transportation Engineers Traditional Neighborhood Development Street Design Guidelines.

Other streets surrounding campus including Maple Street, Arkansas Avenue, Dickson Street and Duncan Avenue should be developed with street tree plantings, sidewalks, and lighting to help identify the campus edges. Limited boulevard treatment would be appropriate to emphasize the importance of these streets, and would assist in traffic management is some places such as at the intersection of Maple Street and Leverett Street. As recommended in the plan, boulevard treatment is especially suitable for Garland Avenue between North and Maple Streets, a principal entry to the campus.

Internal campus streets such as Stadium Drive, Buchanan Avenue and Ozark Avenue should remain two lanes. Existing street trees and lighting should be supplemented and standardized as described in the master plan.

Recreation Fields

The recreation fields located along Razorback Road are currently well developed with lighting and well-maintained turf. Decorative fencing should be provided along Razorback Road for both these and the new recreation fields proposed in the plan. This would assist in the definition of the street edges, provide security, prevent accidental conflict between vehicles and field activities, and aid enforcement of the field use requirements.

Architectural Guidelines

The architectural guidelines are a companion to the master plan and are meant to assist architects in understanding the design and planning issues affecting the University of Arkansas campus. Rather than restricting the freedom of individual designers, the guidelines seek to enlist their help in extending and enhancing the underlying strengths of the campus. By identifying problem areas in planning, landscape and architectural design, designers can focus on the opportunities for redemption as well as the addition of new grace notes. Designers are encouraged to find the proper balance between individual expression and overall contextual conformity.

The goal for new architecture should be that a building, once constructed, makes such a positive contribution to the public environment that it is difficult to imagine the campus without it.

A variety of building styles currently exists on the University's campus. While the master plan does not advocate a single architectural style for campus structures, it is important to develop a consistent architectural character with visual ties between existing and new buildings. The following guidelines are recommended to ensure a quality environment throughout the campus.

Architectural Character and Building Style

New architecture should enhance the aesthetic quality of the campus as a whole, reflect building function and positively impact its immediate setting. A hierarchy must be established between the building program and the site factors to be accommodated. Appropriate siting, massing/scale, setbacks, height, materials and color should be used to create a unified collection of campus buildings. Each building should be positioned and designed to contribute to the whole.

The most appealing existing buildings on campus include Old Main, Vol Walker Hall, Ozark Hall, Memorial Hall, Gregson Hall, Gibson Hall and the Engineering Building. The plan does not suggest that the styles of these buildings be prototypes for new architecture, but rather that the positive qualities of these buildings be used to inform new building designs. From an earlier era, buildings such as these exhibit the qualities of unity and scale that should be echoed in contemporary architectural terms: simple forms which reinforce the campus open space structure; exterior materials that are warm and inviting but also durable; careful, human-scale detailing; well-defined and clearly recognizable entrances; regularly-spaced, well proportioned window and door openings; and human-scale facade proportions.

Building Siting, Scale and Massing

As a general rule, buildings should be sited parallel or perpendicular to street grids and circulation networks. Isolated single buildings surrounded by parking lots should be avoided at all costs. Placement should ensure the best use of limited land by positioning buildings carefully with respect to topography and adjacent existing land use/building masses. Uniform setbacks should be used wherever possible. Building fronts and entrances should be oriented along streets and pedestrian paths to reinforce street and circulation edges. Buildings should be sited to define courtyards and other pedestrian-scaled green spaces and to maximize views and access to open space. Buildings should be sited so their mass contributes positively to the spaces.

Where possible, structures should be composed of simple rectangular volumes or a combination of rectangular forms. Simple massing allows constrained budgets to be focused instead on higher quality materials and careful detailing. Distinctive roof profiles, trim detailing, and repetitive window and door openings should be used to add dimension to planar elements. However, clarity in the design and style of buildings should avoid excessive decoration and unnecessary ornamentation.

To link buildings visually, those grouped in cluster environments should be sympathetic to one another and readable as a whole, exhibiting comparable heights and continuity of trim coursing and cornice lines.

Open Space Definition/Siting

As outlined in the Design Principals, buildings must become edges and shapers of campus open spaces, rather than a series of freestanding forms, each competing for attention. The quality of corridors, quadrangles, entry plazas, lawn areas and open space is due largely to the continuity of buildings at their edges. Some diversity of facade treatment is appropriate and necessary as an expression of the building's use, as long as the larger spatial order can be reinforced by the alignment and massing.

Setbacks

Building siting should meet prescribed build-to lines along roadways or walkway edges. Building setbacks provide a framework for maintaining pedestrian connections and view corridors, establishing open spaces and creating visual order to a campus edge and interior. Buildings should adhere to the established setback of existing campus buildings.

Within the setback, between building facades and the street pavement, a series of several parallel spatial layers should be created. These serve to articulate the relationship of buildings to street and to further strengthen the longitudinal nature of the street. These layers may consist of building entrances, hedges, trees, sidewalks, curbs, etc.

Building Height

In order to preserve the skyline of natural tree cover and the human-scale proportion of the campus, no building should exceed the profile of existing major tree coverage on the campus. The footprint of campus buildings will necessarily vary due to differences in program and site. A variety of building heights between two and four stories is encouraged. Such a range is appropriate for most uses in an academic environment and will result in the most compatible proportions relative to existing buildings and campus open space. Given the topography, some buildings may need to be higher than four stories. These taller buildings should still contribute continuity and visual integrity to the campus.

Building Materials and Colors

In order to unify the image of the University campus, a flexible palette of materials and colors is recommended to allow variety while maintaining a level of consistency on the site.

Acceptable building materials should exhibit lasting, durable qualities. They include brick, stone, architectural precast concrete, poured concrete, and masonry. Wood is permitted for detailing but is not recommended for facade treatment.

Metal should be used only to accent buildings. Vinyl and aluminum siding should not be permitted.

A limited palette of colors (i.e., red, brown, tan and buff) should be used for building facades and should be selected with close attention to predominant colors in a particular district. Painted building surfaces and accent colors should enhance facade colors. Architecturally compatible colors which are native to the area or colors found on site are to be used as accent colors on windows, doors, trim, eaves details and other architectural features. The use of fluorescent colors should be prohibited throughout the campus.

Transparency

Transparency is a particularly important architectural quality. The use of windows enlivens and punctuates the facades of buildings, and brings vitality to the campus night and day. Transparency at building entries and on ground- floor levels encourages a visual fusion of indoor and outdoor space and activity, and heightens awareness of the campus setting. Visibility and transmission of light from buildings should be utilized to enhance the sense of security in campus spaces.

Windows with divided-light mullions are encouraged in all cases to enhance the architectural character and scale of new architecture. Highly reflective glass is to be avoided; solar protection by architectural means is preferred.

The use of curtain wall metal and glass surface materials should be limited to features that punctuate and animate the more traditional solid materials.

Facades

The traditional buildings on campus have simply-ordered and well-articulated facades. Clearly-delineated bases, middles and tops are the rule. Generally, fenestration patterns should be regular and facades should be simple and well ordered. In order to express the academic endeavors within the building, it is encouraged that ornamentation, bas-relief, graphics, or sculpture be integrated with the architectural design.

Roof Treatments

Sloped roofs, parapets and dormers all exist on the campus and often add interest or screen equipment. Particular attention should be paid to roofs which will be viewed from higher points on campus. Obtrusive roof-top mechanical units should be concealed so as not to be visible from the street, other buildings and higher locations on campus.

Entrances

The location of building entries and arcades can do much to animate campus spaces. To create a welcoming environment, building entrances should be clearly visible, should be located at walk termini, and should open out into forecourts. Appropriate landscaping and facade detail should address adjacent common spaces and be inviting to the user at an appropriate scale. Accessibility, including that for the handicapped, is a primary concern when siting entryways

and setting finish floor elevations. Building service areas should be separate from pedestrian entries and located away from primary pedestrian routes when possible.

6.5 Design Review Procedures

Goals and Objectives

In order to ensure development to the highest standards, the current design review process will be enhanced under the auspices of a Design Review Board. The charge to the Design Review Board is to review project designs on behalf of the University with two primary goals:

1. To interpret the Campus Master Plan policies, principals and design guidelines; to determine compliance with the policies, principles and guidelines; to recommend modifications to the proposed project when appropriate; and to grant exceptions when appropriate. Serious deliberation should be given to any exceptions or to any modification of the policies, principles, or guidelines.

2. To evaluate projects to ensure that they meet the highest qualitative standards. Special care must be taken, however, so that the Board does not lapse into "designing the building or site," and that architects, landscape architects, and other project representatives are given clear instructions after any review.

The Design Review Board's review responsibility is the "civic" mission of a project, not its "private" or functional one. This includes review of the project in the light of the Campus Master Plan, with emphasis on the quality of public open space and landscape, on architectural form and exterior appearance, on the design of primary interior public spaces, and its relationship and contribution to the larger campus context in which it is sited.

Project Review Criteria

A review is triggered by any new project or any project that affects or changes the public spaces of the University or a building appearance through replacement, repair or restoration. All major campus plans, landscape projects, additions to the Senior Walk, and building projects with a construction cost over $500,000 will be reviewed. Smaller projects will also be considered for review, although an abbreviated administrative process may be employed. Without some process for review, the accumulation of small projects, including replacement and repair, can add up to degrade the campus environment. In some cases, these smaller projects may be an opportunity to initiate the transformation of an existing condition into a new design. The primary criterion that triggers review by the Design Review Board is whether the project affects or changes the public spaces of the University, including building lobbies.

Design Review Board

The Design Review Board will be appointed by the Chancellor and will be made up of members of the University community and select design professionals who have demonstrated an interest in the campus's development.

Specifically, those drawn from the University community will include a Chancellor's representative, the Director of Facilities, Dean of the School of Architecture, and a representative each from the Campus Building Facilities Committee and the Landscape and Grounds Committee. There should be two architects on the Board. Both should be from outside the state, or not in active practice, to avoid potential conflict. Moreover, consideration needs to be given to filling one of these positions with a nationally recognized architect with a strong background in campus planning and design. Design professionals should be precluded from working for the University during their term on the Board.

Appointed members will have staggered terms of three years to ensure incremental turnover. To ensure the participation of the whole board, membership will be linked to reasonable attendance to meetings. The Chancellor will appoint as Chair a person of judgment, diplomacy, and conviction as these qualities relate to the larger interests of the University as a whole.

The Design Review Board is primarily a review body, not an action body. Its roll is as an advisor to the Chancellors' office concerning the direction of ongoing campus projects. The Board may also have secondary, more pro-active roles including making recommendations regarding the need for district plans and Design Guidelines, and making recommendations regarding members for consultant selection committees.

At least once a year, the Design Review Board should meet with the Chancellor and facilitate a walking tour of the campus.

Design Review Procedures

The Board will have formal bimonthly meetings with set procedures and an agenda determined by the Chair and Physical Plant administrator. Additional meetings should be scheduled as demanded by project volume and schedule. Projects will be presented to the Design Review Board by the participating Users Committee and the project design team, which might include architects, landscape architects, engineers, or other professional consultants. After every project review, clear instructions to the project design team will be provided for review to the Chancellor's office. Subsequently, those instructions will be conveyed to the Project Committee and its consultants in writing in a timely manner through the Physical Plant office. The sequence of actions/reviews will include, but not be limited to the following:

1. Make available to each design team a complete copy of the Campus Master Plan, including relevant design principals and guidelines.

2. Require an initial meeting with the architect or designer to clarify the University's intent.

3. Require formal intermediate and final reviews of the schematic design phase.

4. Require a review near the end of the design development phase, and, if there are significant changes, there should be equivalent reviews for construction documents.

5. Conduct a post-construction project assessment.

A determination may be made at the outset of the review process that fewer review steps may be undertaken if the scale or impact of the project is clearly not so significant as to require extensive review.

Administrative Integration of Design Review

The success of the Design Review Board and the design review process is predicated on the careful integration of the Design Review Board into the existing University administration, especially as it relates to campus development and project initiation. The entire development process involves many different individuals and departments, whose contributions will be more significant with clear delineation of appropriate roles, responsibilities, and inter-relationships. It is expected that the University will define the specific roles and relationships of the following parties in the administration of the design review process:

- Design Review Board
- Department of Physical Plant
- Users Committees
- Architect Selection Committee
- Project Design Consultants
- The University at Large

Two subjects in the development process are important enough to merit special emphasis if design review and the Campus Master Plan are to be successful: project scope/funding and architect selection.

If buildings are to fulfill their civic role as described in the Campus Master Plan, both the programming and funding must accommodate this by including landscape and public space requirements in a proposed building's program and budget.

Selection of architects and other design professionals may be the most important single factor in successful implementation of the intent of the Campus Master Plan. Special care must be taken to select the right architect, or other design professional, for a particular project. Not all programs and areas of the campus are the same; thus, an architect may not be equally qualified for all areas. For example, design professionals for contextually demanding projects must have demonstrable understanding of the University's intent as manifested in the Campus Master Plan, not simply qualifications for a particular building type. A professional member of the Design Review Bored should serve as advisor to any selection committee.

The Campus Master Plan does not consist of absolute laws, but rather of policies and design principles which may be supplemented further by more detailed and site-specific design guidelines at the district level. In order to be effective, the Campus Master Plan must be implemented, monitored, interpreted, enforced, and, if necessary, modified over time. This requires an ongoing process, because no plan can be prescriptive enough to anticipate future events in detail, if at all. The Campus Master Plan is a framework for University decision-making that will carry out the goals and objectives of the Campus Master Plan.

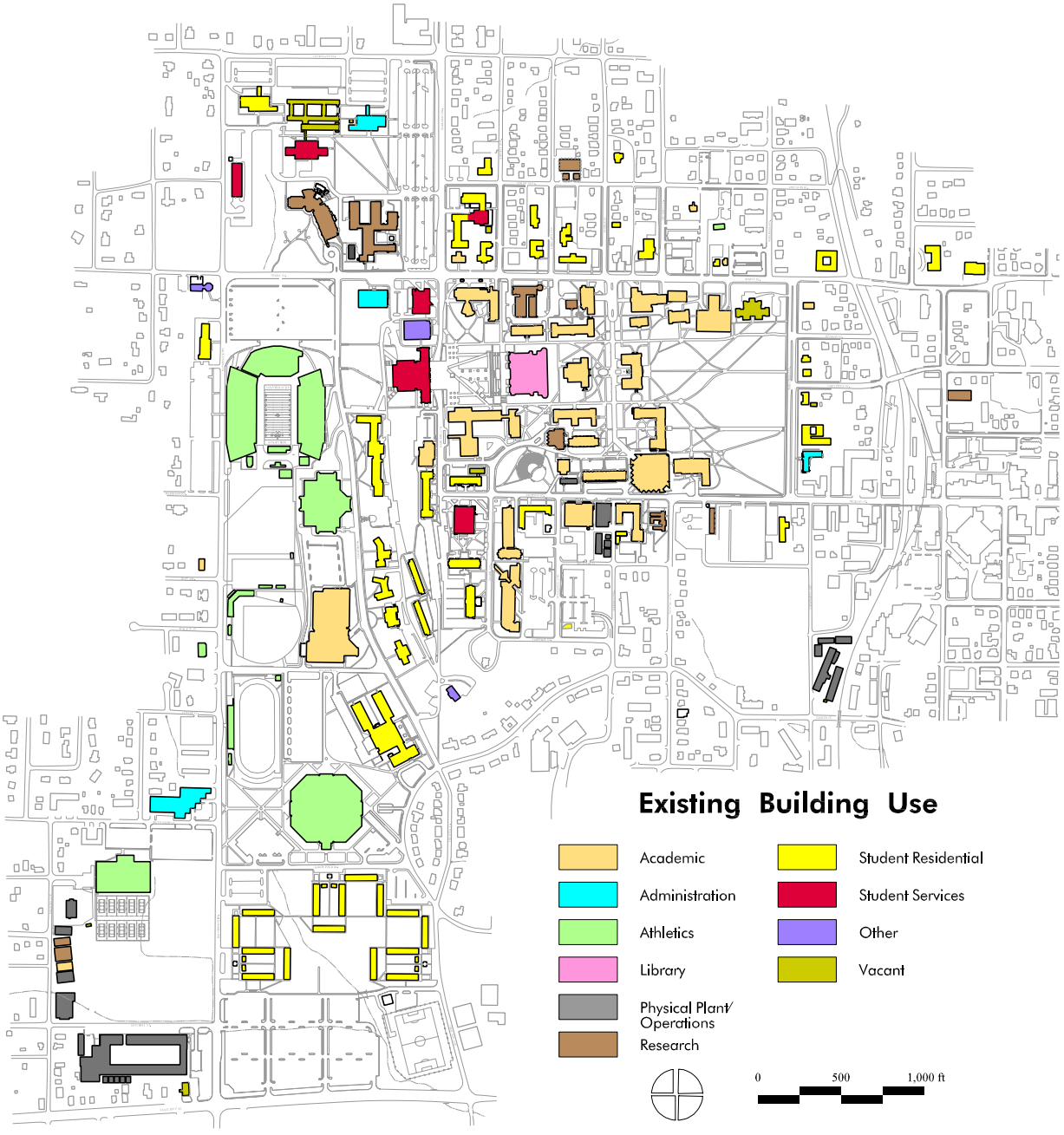

Existing Building Use
Academic
Administration
Athletics
Library
Physical Plant/ Operations
Research
Student Residential
Student Services
Other
Vacant
0
500
1,000 ft

Figure 1

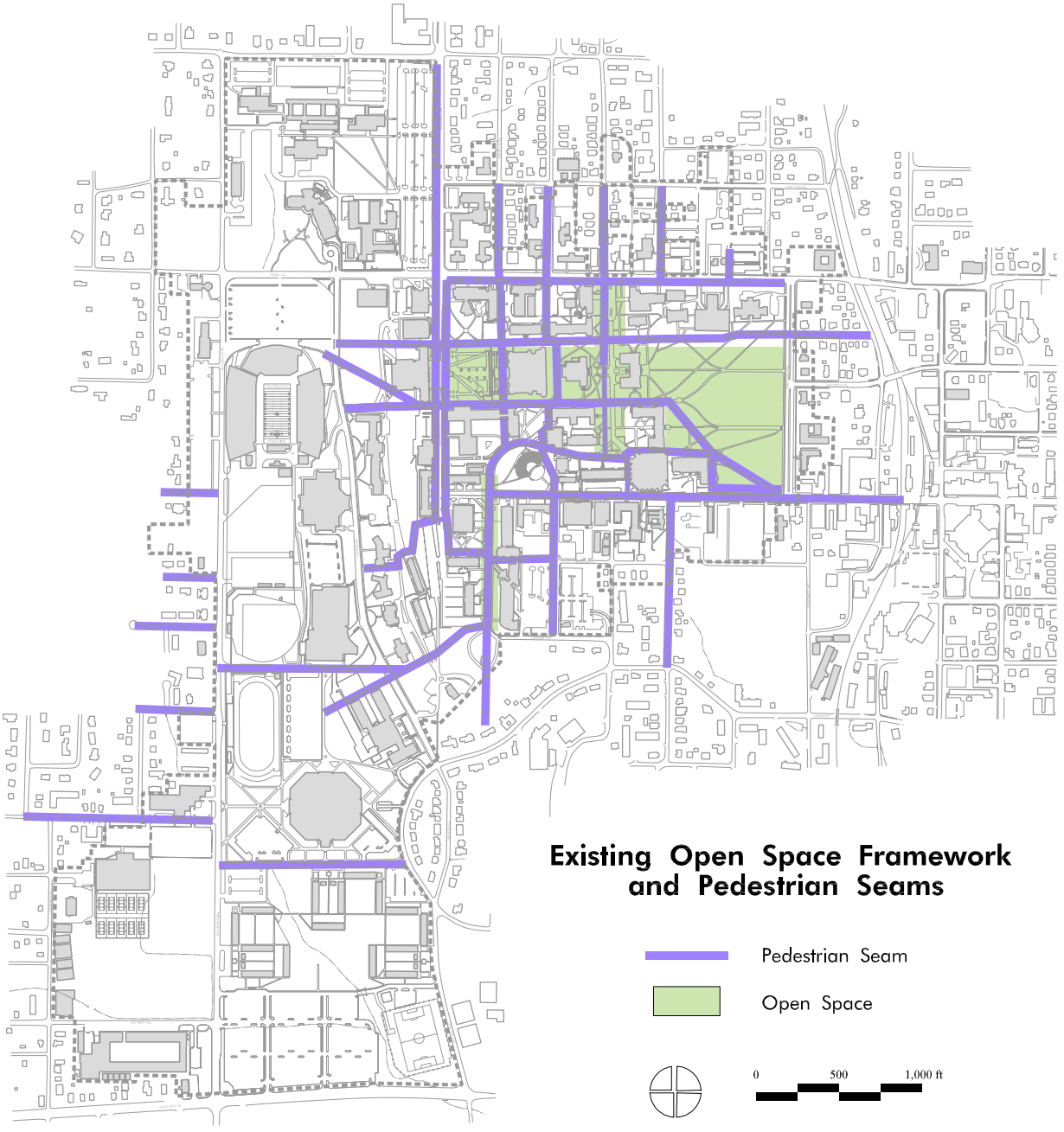

Existing Open Space Framework and Pedestrian Seams
Pedestrian Seam
Open Space
0
500
1,000 ft

Figure 2

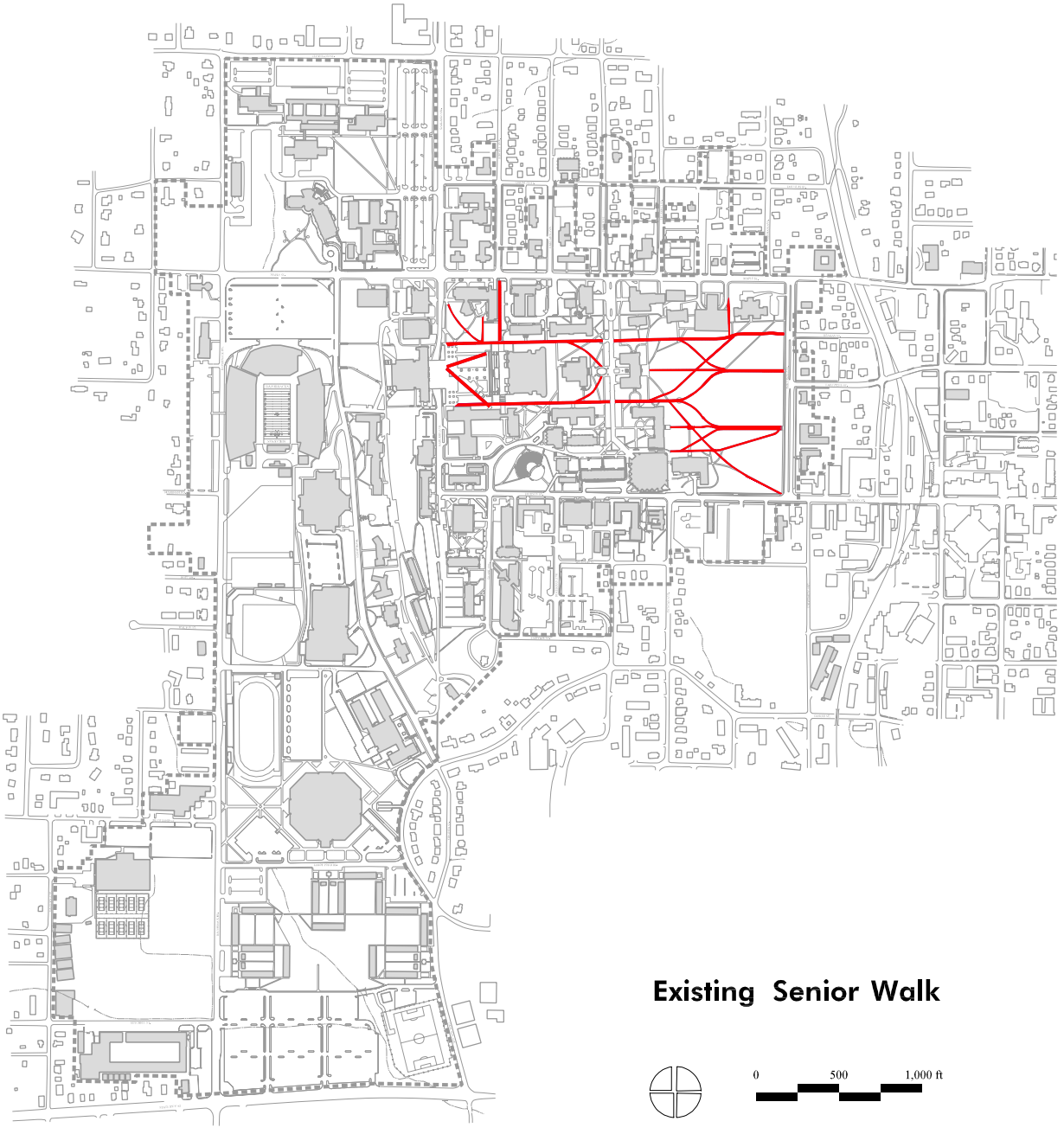


Figure 3

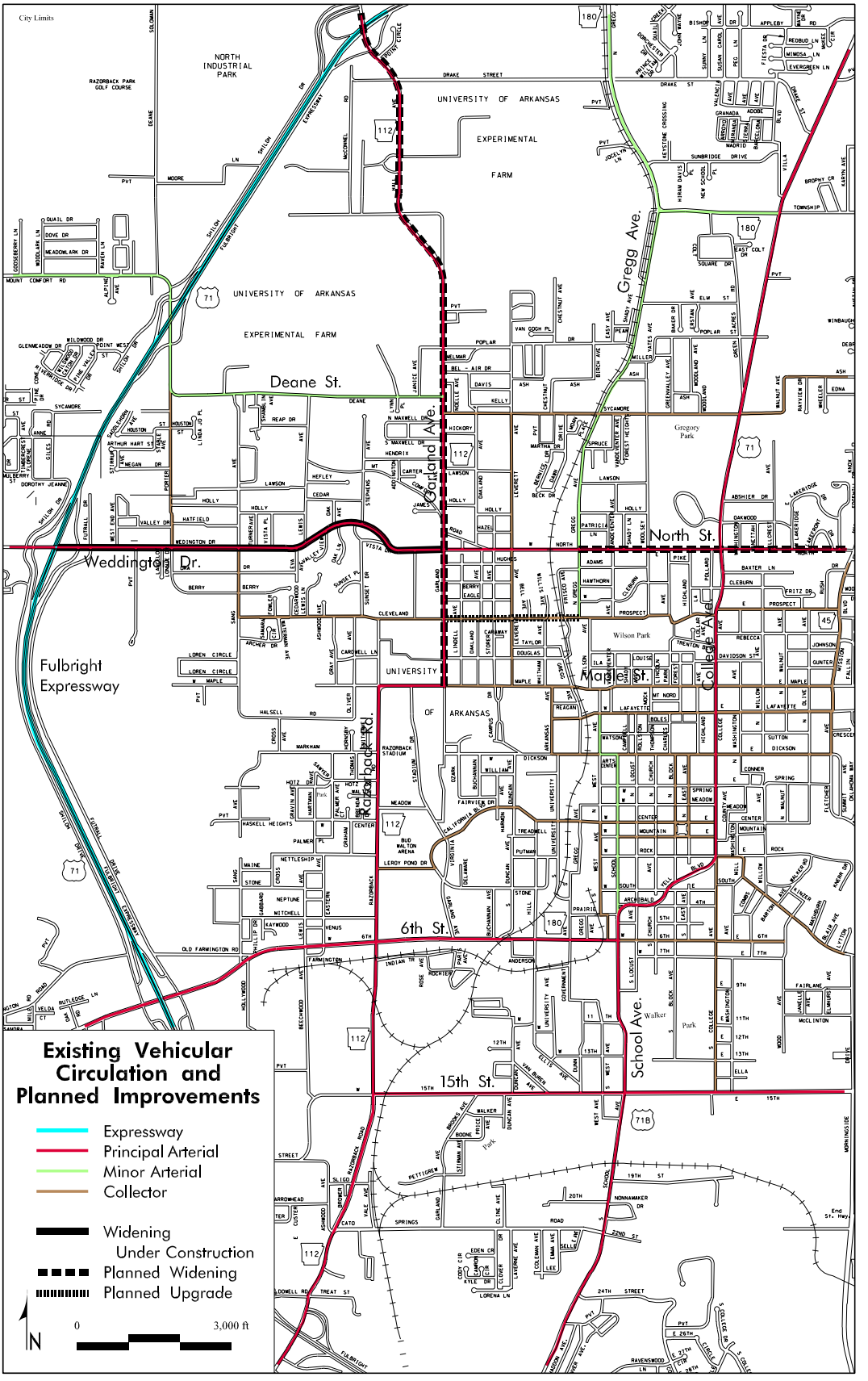

Existing Vehicular Circulation and Planned Improvements
Expressway
Principal Arterial
Minor Arterial
Collector
Widening Under Construction
Planned Widening
Planned Upgrade
N
0
3,000 ft
Deane St.
Weddington Dr.
North St.
Maple St.
6th St.
15th St.
Gregg Ave.
Garland Ave.
College Ave.
School Ave.
Razorback Rd.
Fulbright Expressway
UNIVERSITY OF ARKANSAS EXPERIMENTAL FARM
NORTH INDUSTRIAL PARK
RAZORBACK PARK GOLF COURSE
Gregory Park
Wilson Park
Walker Park

Figure 4

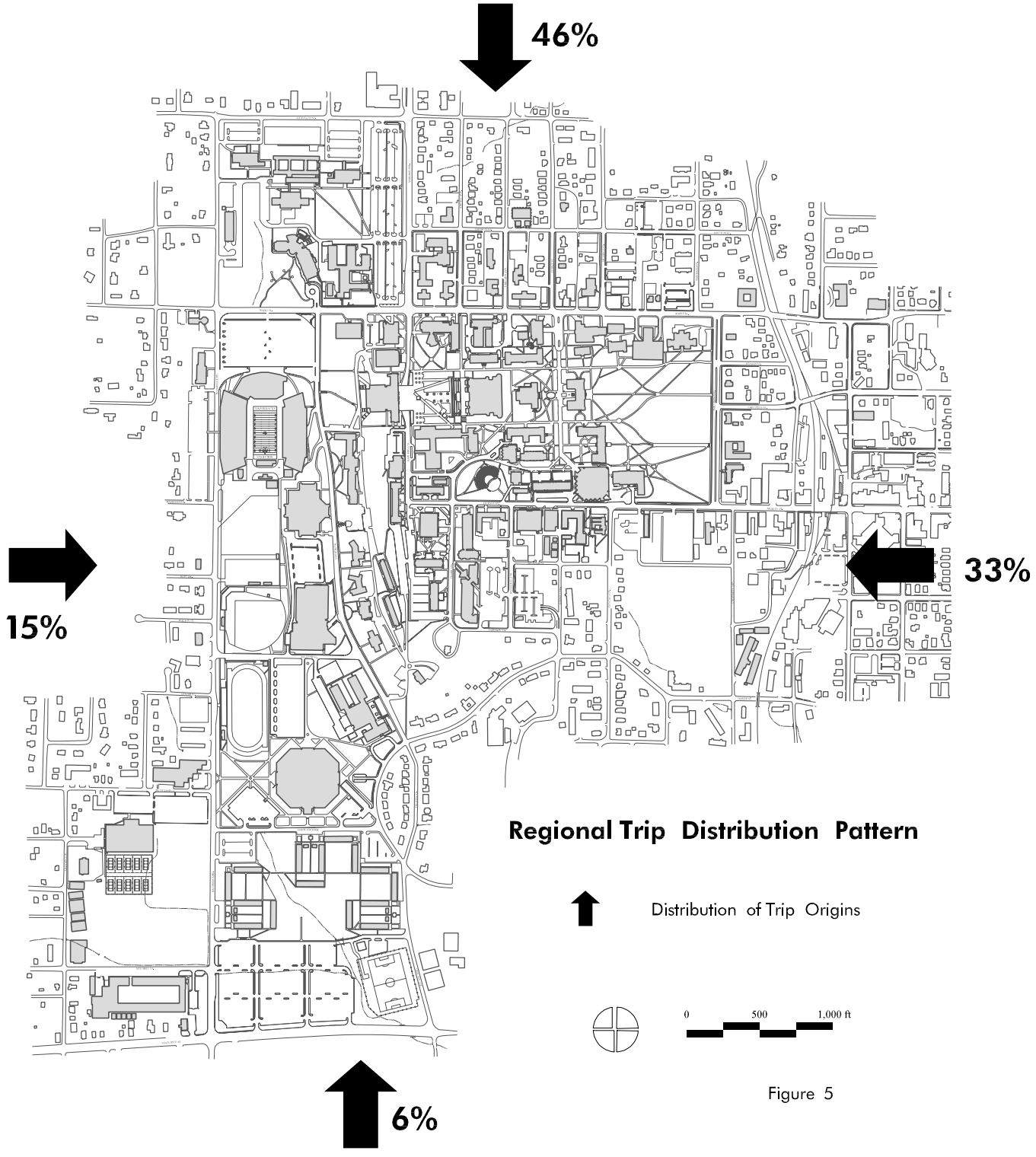

46%
15%
33%
6%
Regional Trip Distribution Pattern
Distribution of Trip Origins
0
500
1,000 ft

Figure 5

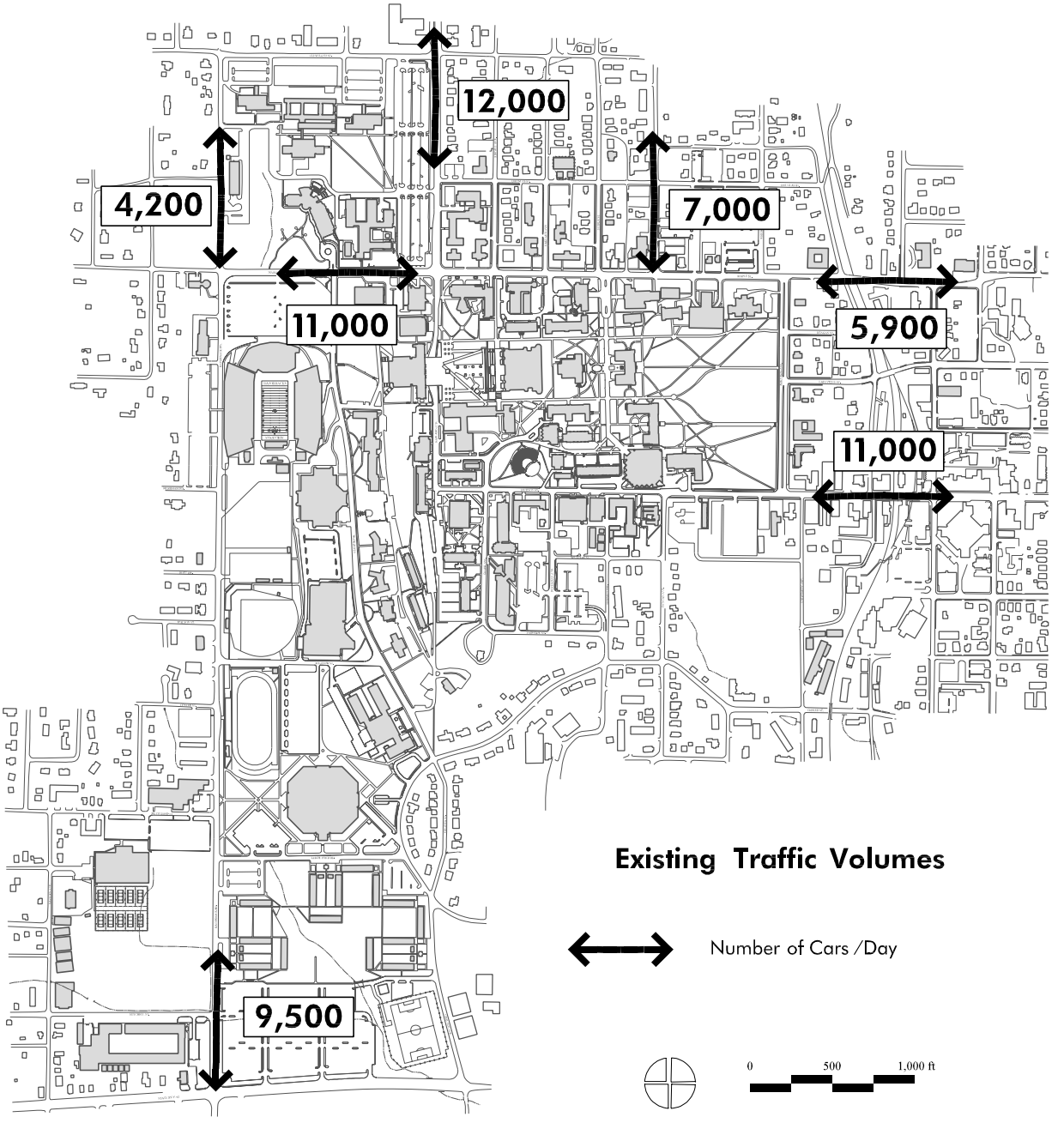

12,000
4,200
7,000
11,000
5,900
11,000
9,500
Existing Traffic Volumes
Number of Cars /Day
0
500
1,000 ft

Figure 6

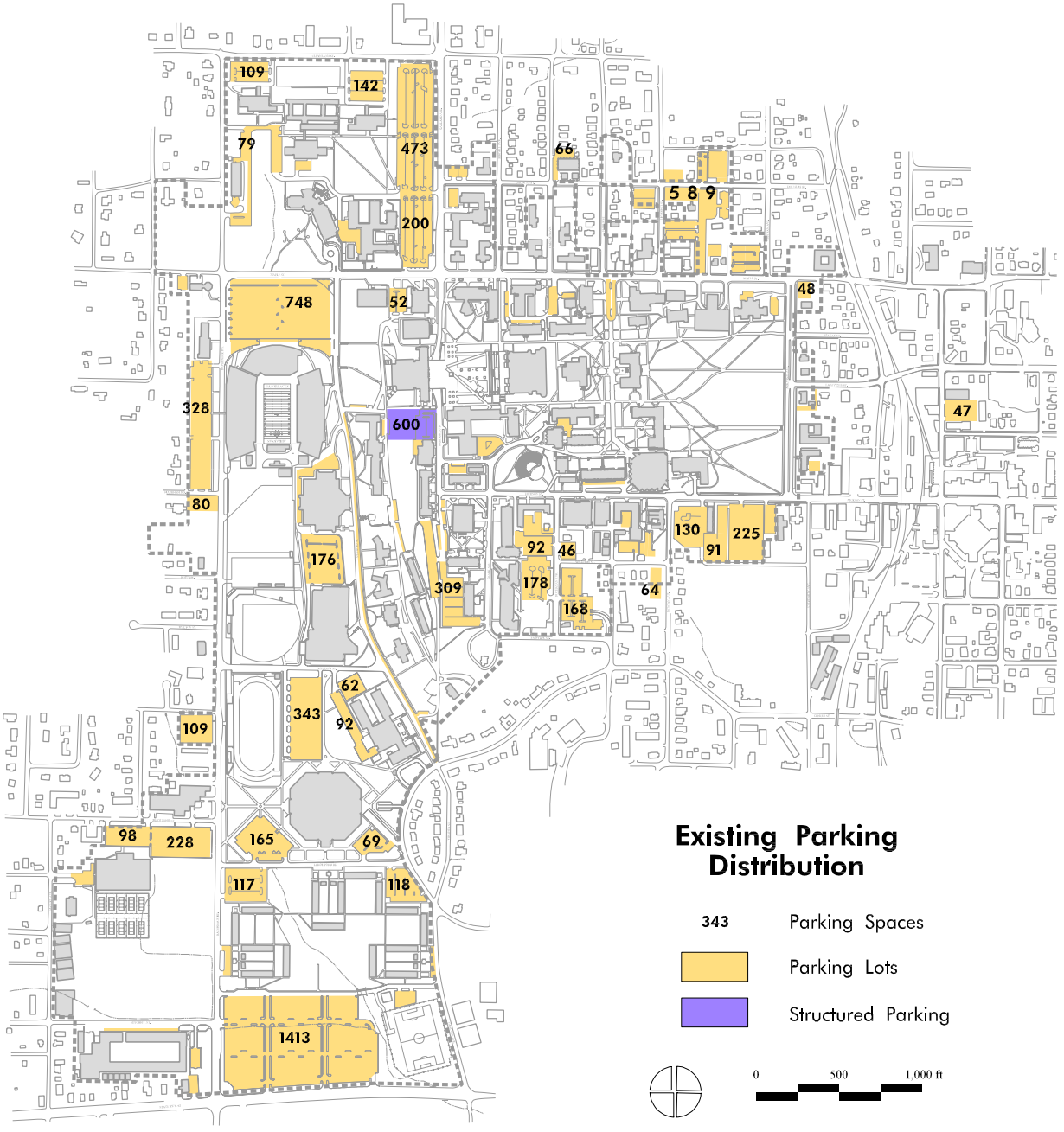

109
142
79
473
66
5 8 9
200
748
52
48
328
600
47
80
130
225
92
46
91
176
178
309
64
168
62
343
92
109
98
228
165
69
117
118
1413
Existing Parking Distribution
343
Parking Spaces
Parking Lots
Structured Parking
0
500
1,000 ft

Figure 7

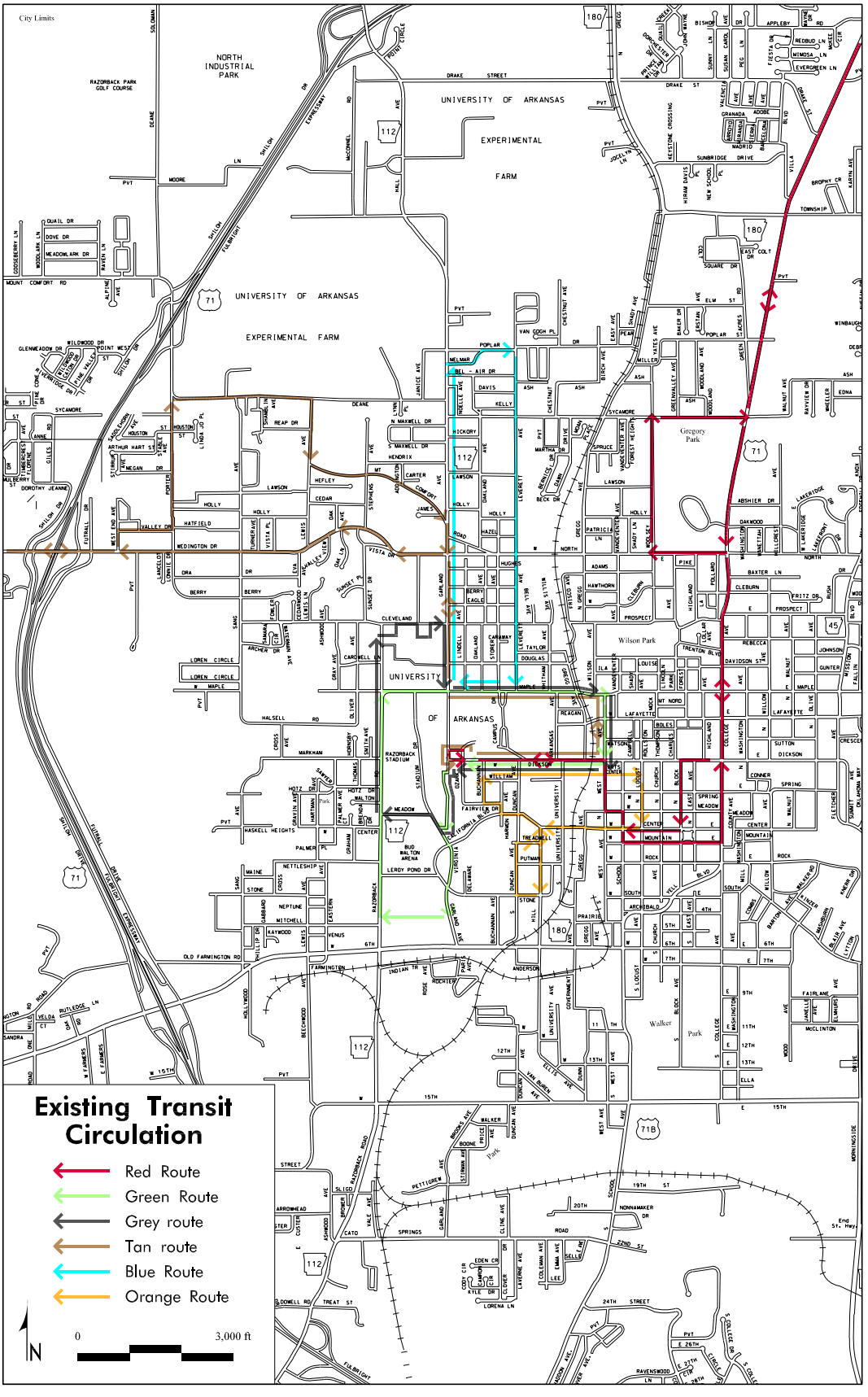

City Limits
NORTH INDUSTRIAL PARK
RAZORBACK PARK GOLF COURSE
UNIVERSITY OF ARKANSAS EXPERIMENTAL FARM
UNIVERSITY OF ARKANSAS
Gregory Park
Wilson Park
Walker Park
Existing Transit Circulation
Red Route
Green Route
Grey route
Tan route
Blue Route
Orange Route
N
0
3,000 ft

Figure 8

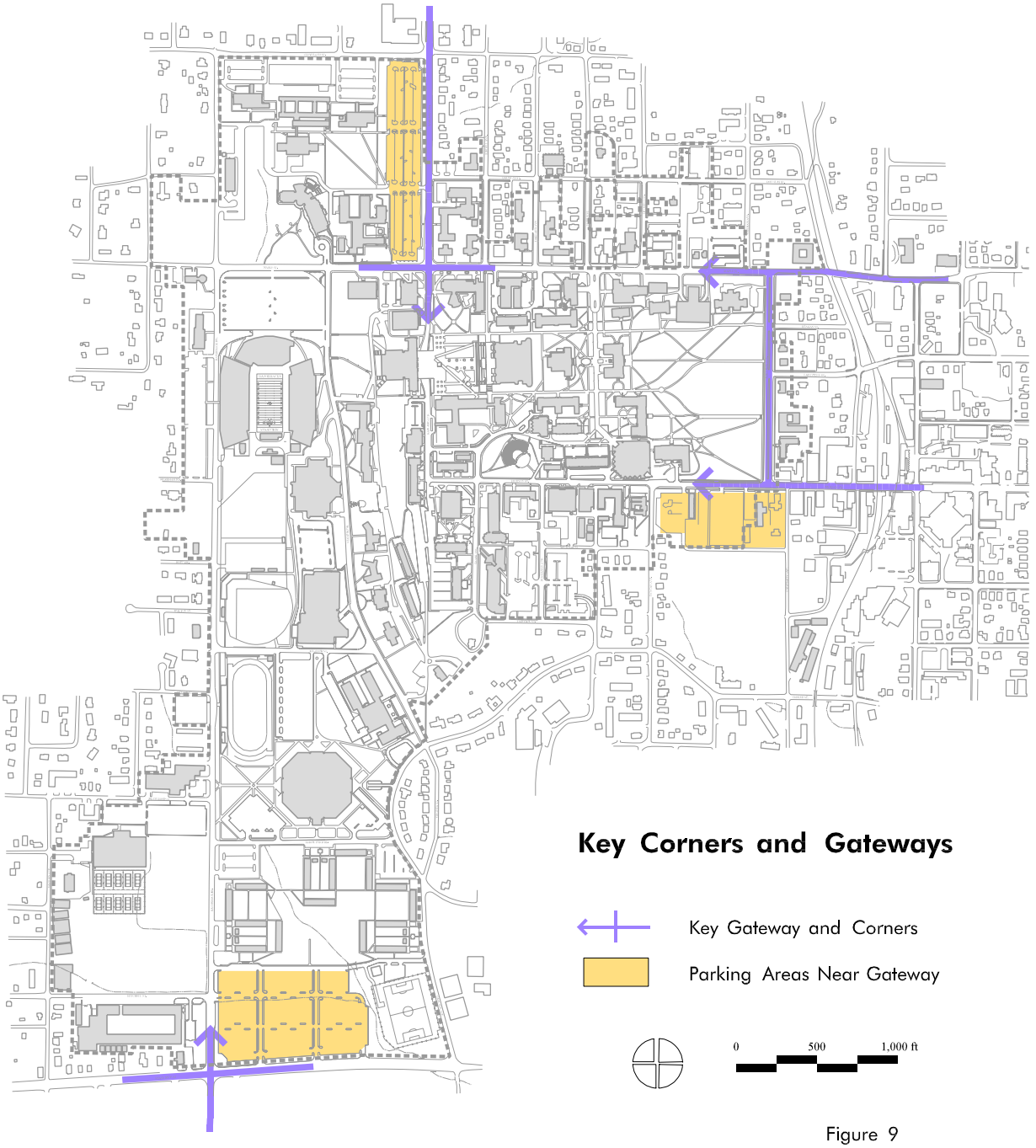

Key Corners and Gateways
Key Gateway and Corners
Parking Areas Near Gateway
0
500
1,000 ft

Figure 9

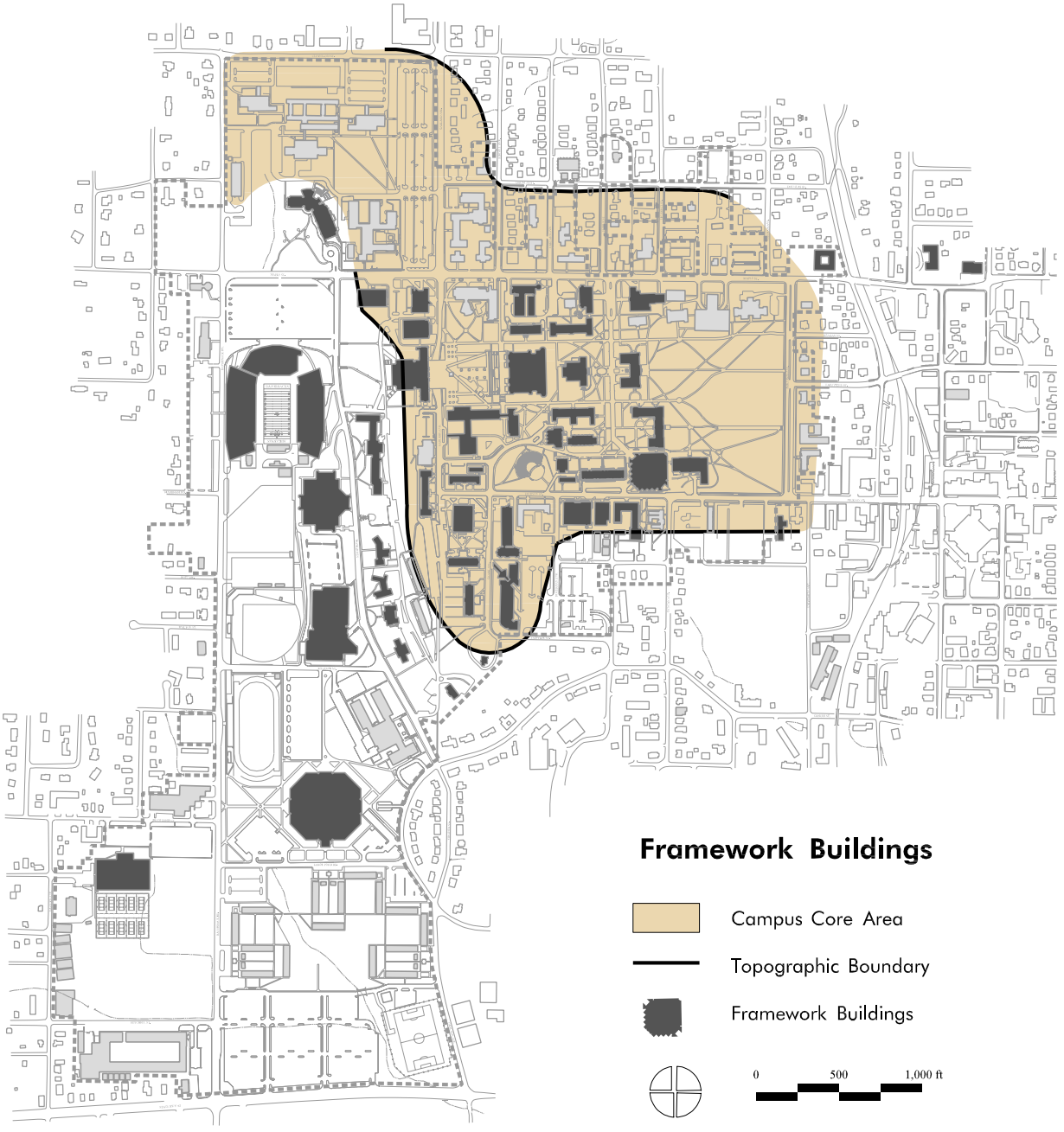

Framework Buildings
Campus Core Area
Topographic Boundary
Framework Buildings
0
500
1,000 ft

Figure 10

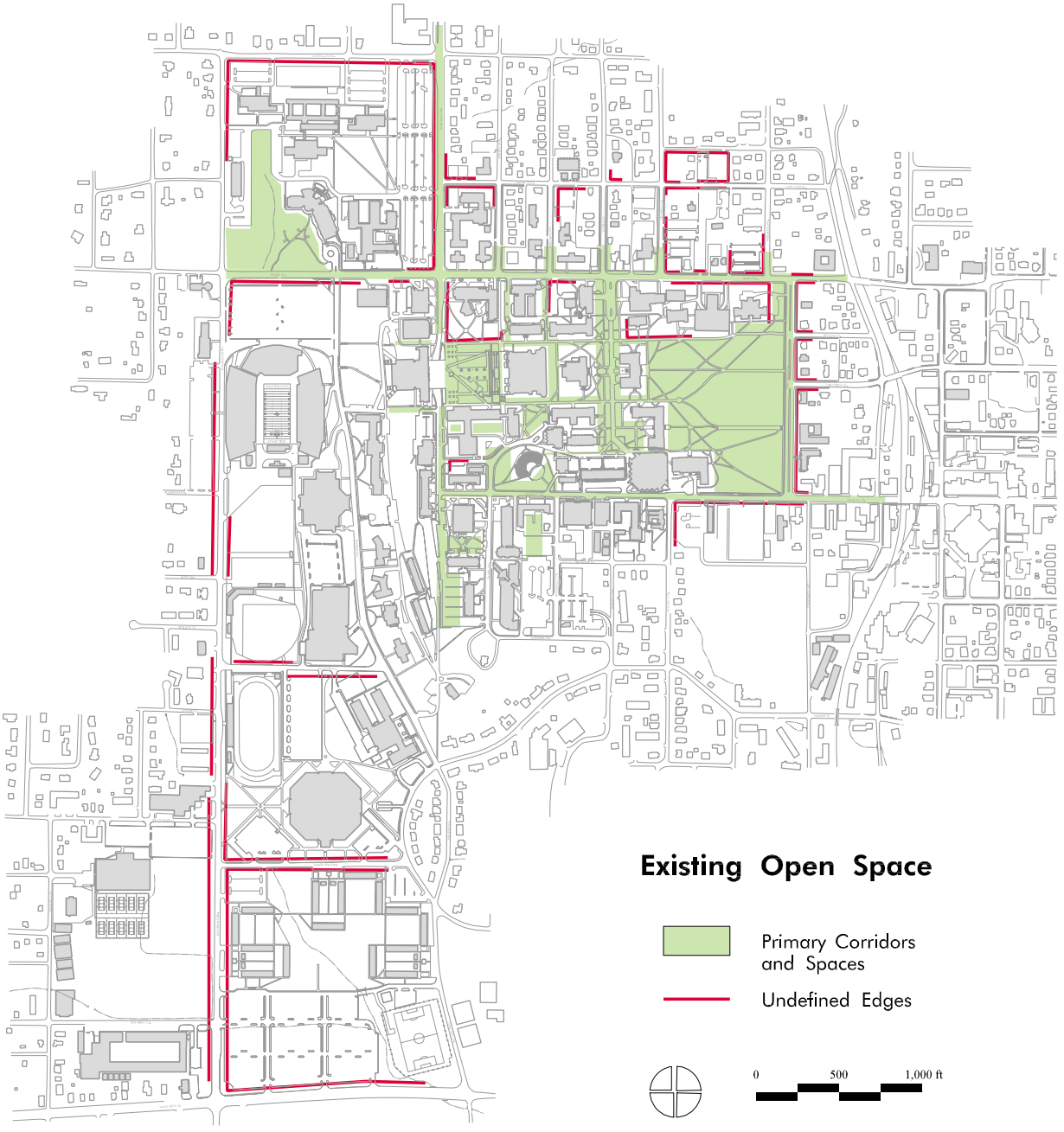

Existing Open Space
Primary Corridors and Spaces
Undefined Edges
0
500
1,000 ft

Figure 11

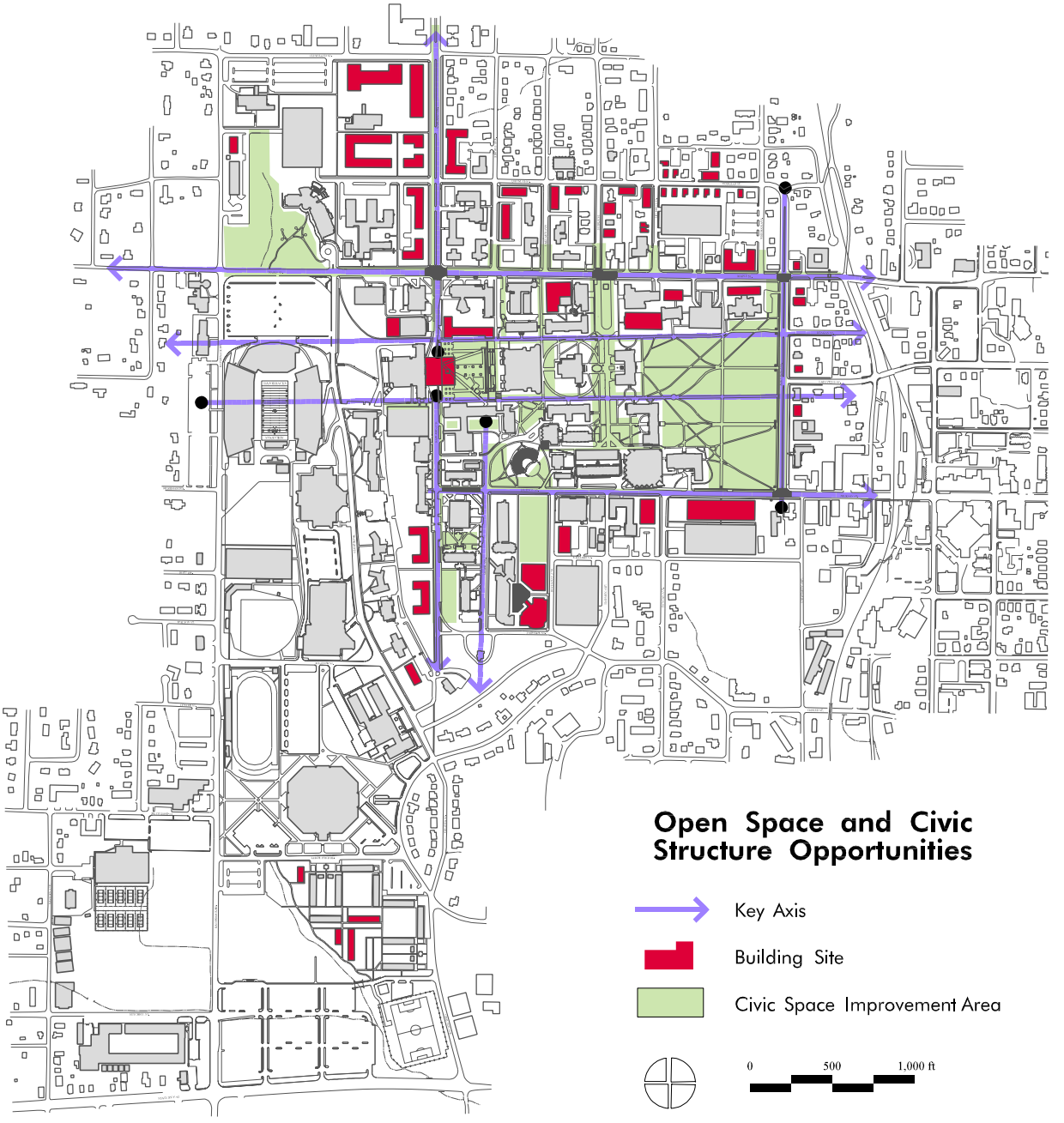

Open Space and Civic Structure Opportunities
Key Axis
Building Site
Civic Space Improvement Area
0
500
1,000 ft

Figure 12

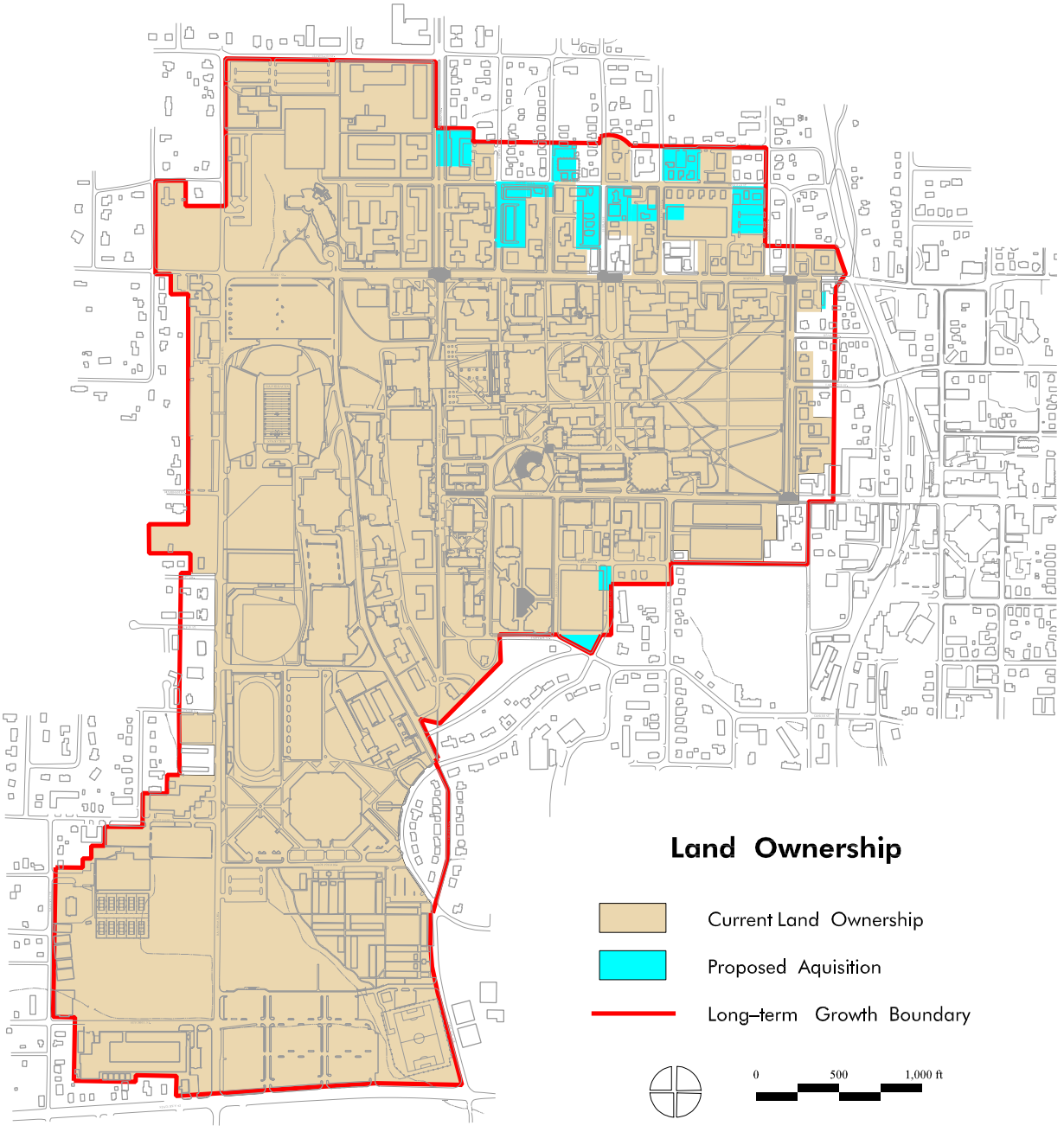

Land Ownership
Current Land Ownership
Proposed Aquisition
Long–term Growth Boundary
0
500
1,000 ft

Figure 13

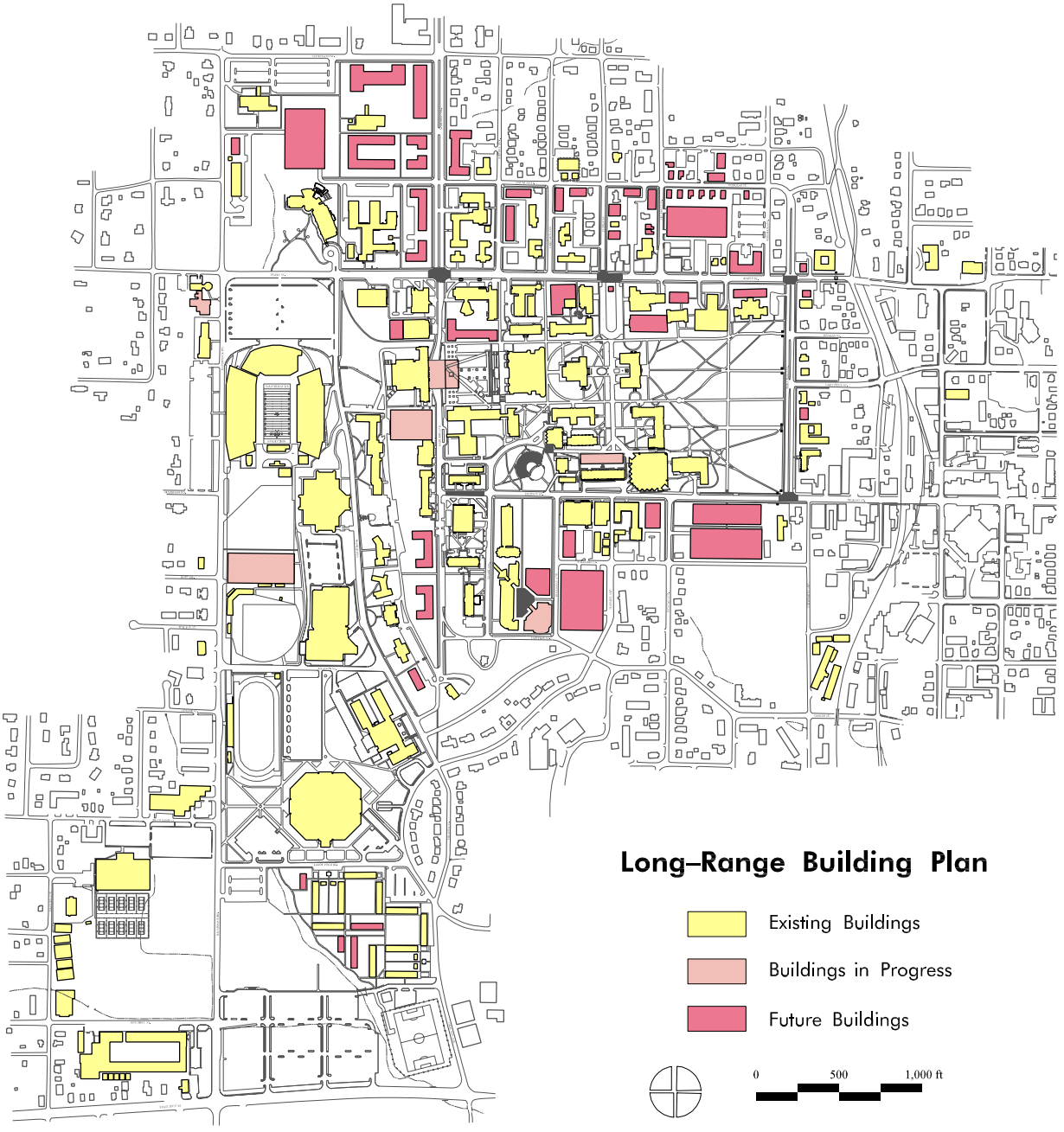
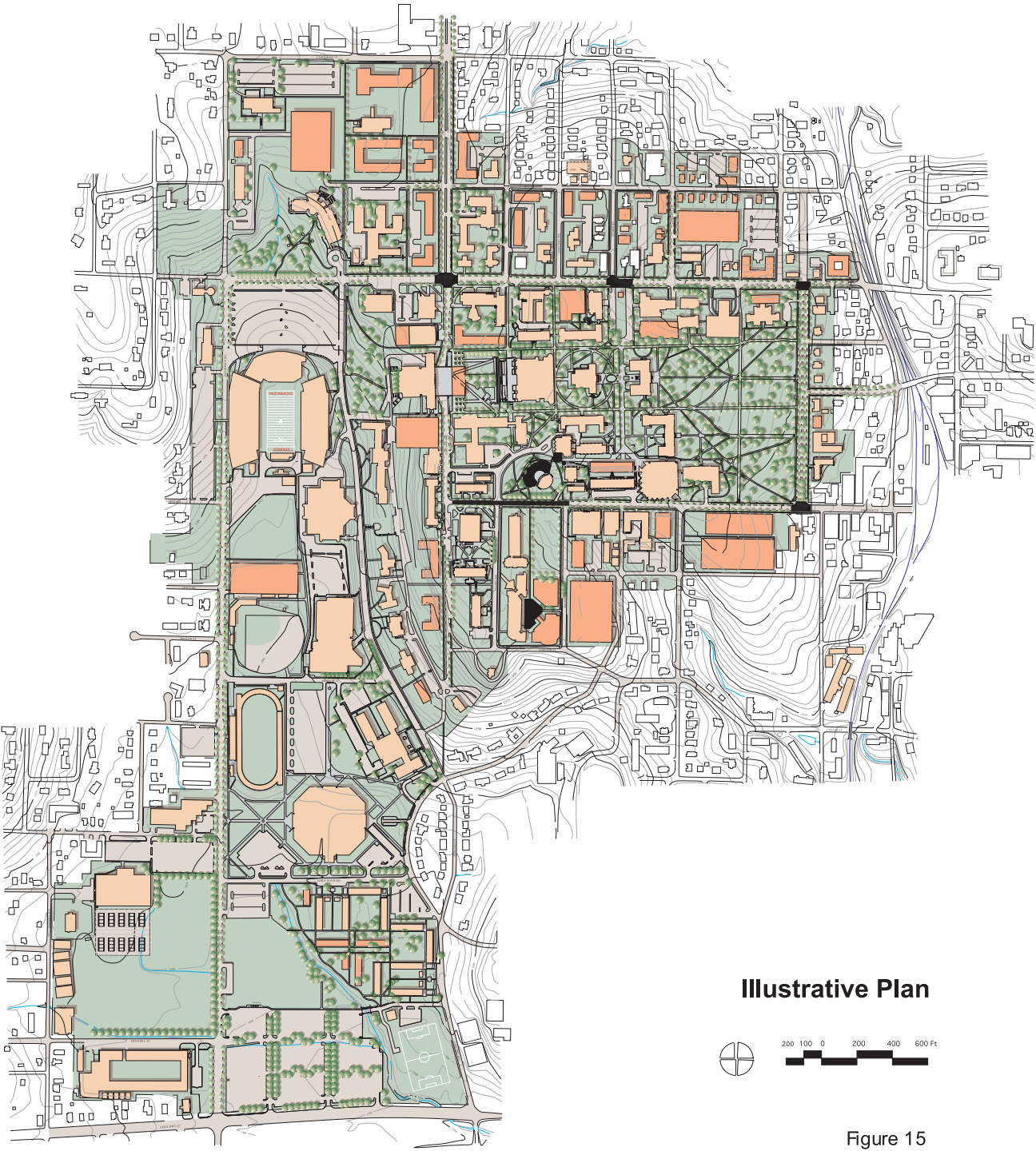

Long–Range Building Plan
Existing Buildings
Buildings in Progress
Future Buildings
0
500
1,000 ft

Figure 14



Illustrative Plan

Figure 15

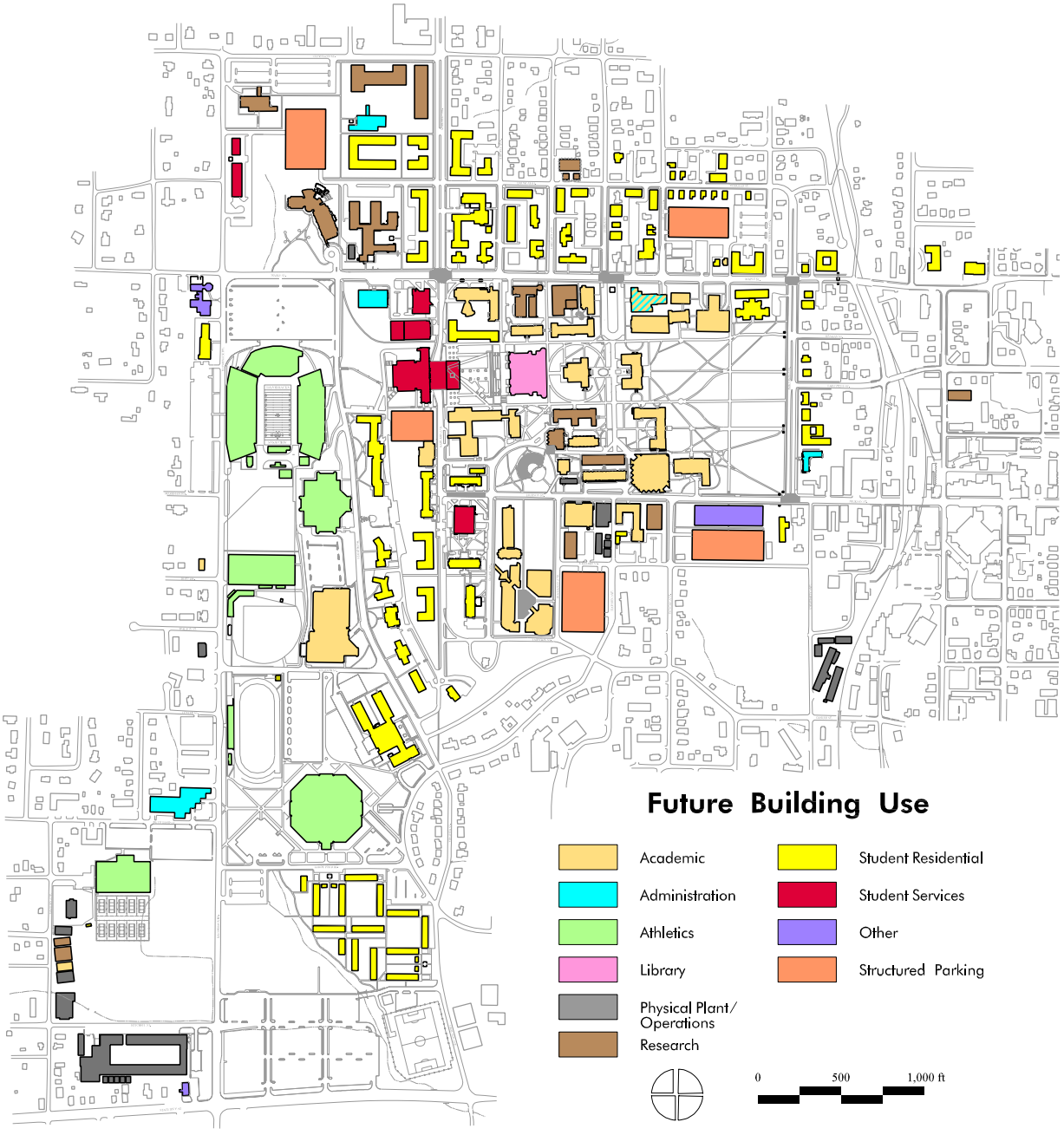

Future Building Use
Academic
Administration
Athletics
Library
Physical Plant/ Operations
Research
Student Residential
Student Services
Other
Structured Parking
0
500
1,000 ft

Figure 16

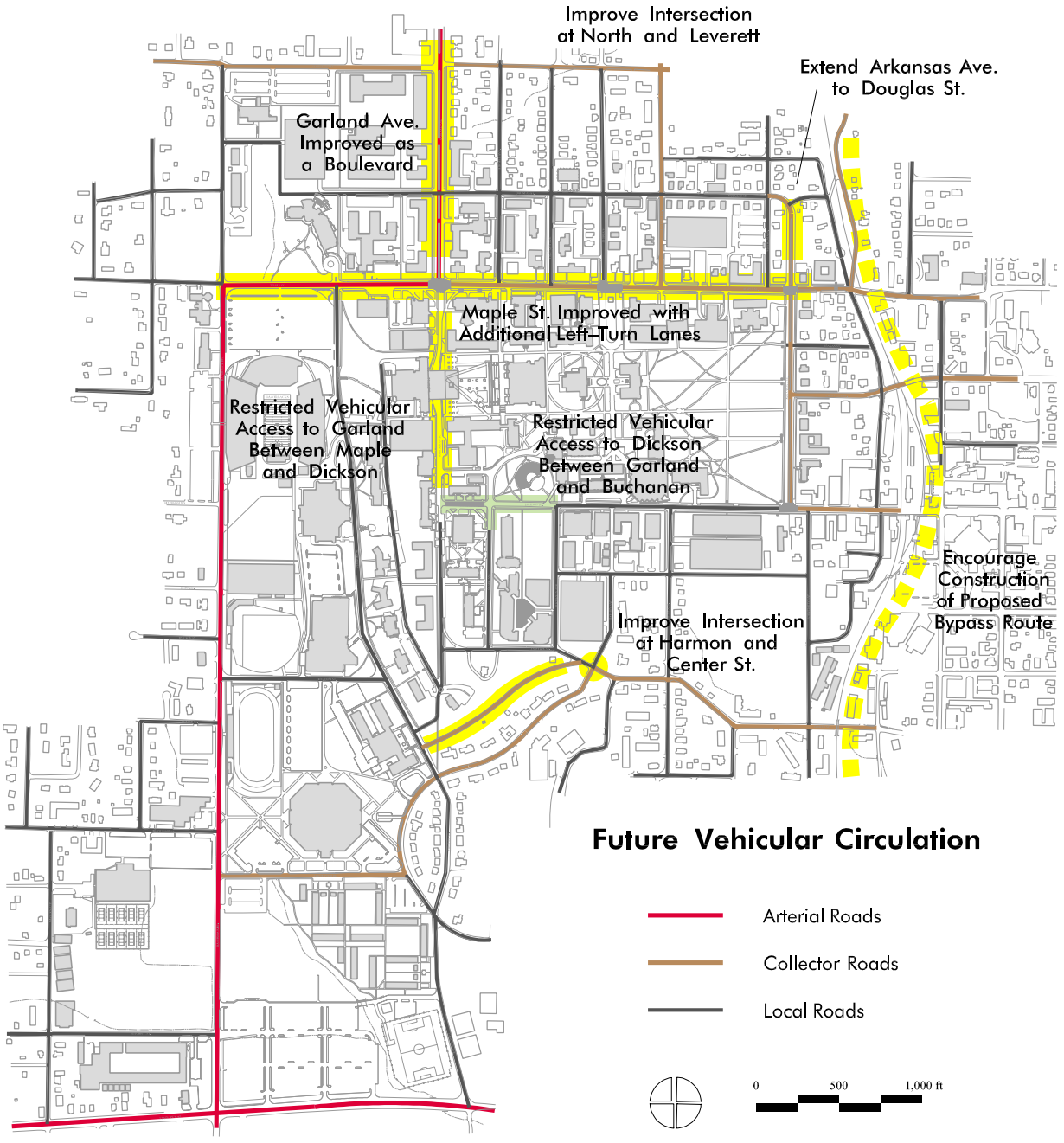

Improve Intersection at North and Leverett
Extend Arkansas Ave. to Douglas St.
Garland Ave. Improved as a Boulevard
Maple St. Improved with Additional Left-Turn Lanes
Restricted Vehicular Access to Garland Between Maple and Dickson
Restricted Vehicular Access to Dickson Between Garland and Buchanan
Encourage Construction of Proposed Bypass Route
Improve Intersection at Harmon and Center St.
Future Vehicular Circulation
Arterial Roads
Collector Roads
Local Roads
0
500
1,000 ft

Figure 17

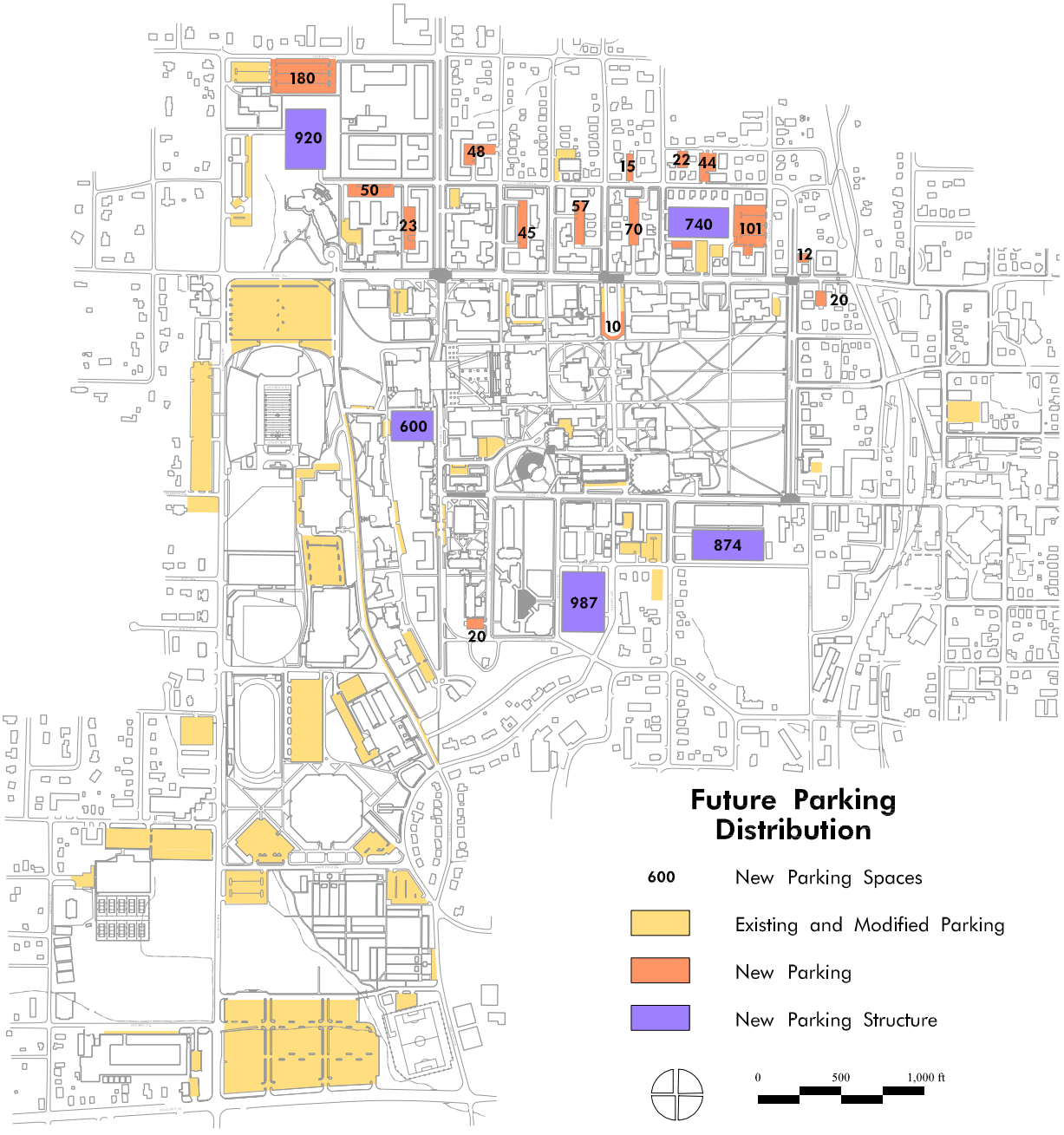

180
920
48
15
22
44
50
23
45
57
70
740
101
12
20
10
600
874
987
20
Future Parking Distribution
600
New Parking Spaces
Existing and Modified Parking
New Parking
New Parking Structure
0
500
1,000 ft

Figure 18

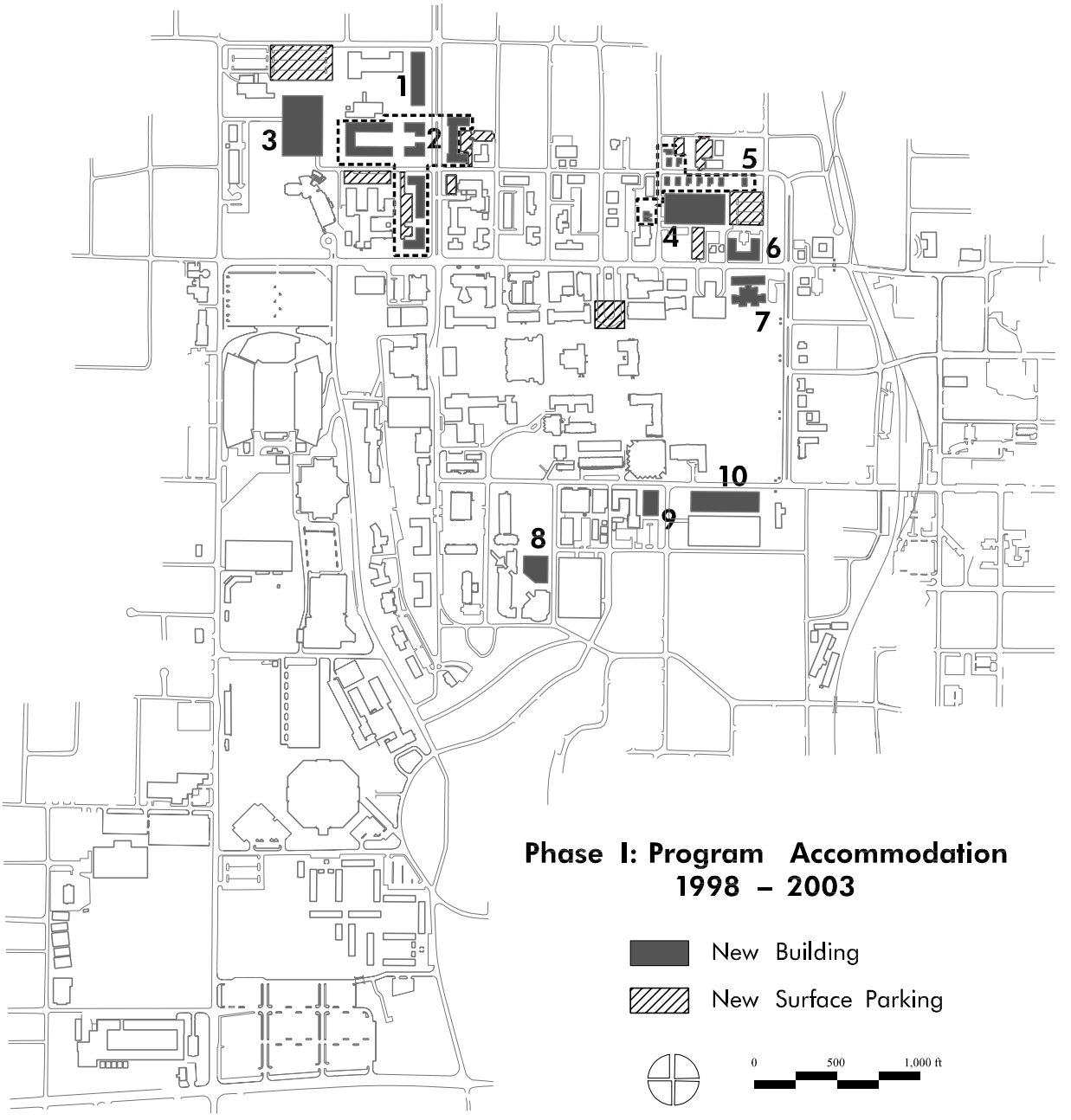

1
2
3
4
5
6
7
8
9
10
Phase I: Program Accommodation
1998 – 2003
New Building
New Surface Parking
0
500
1,000 ft

Figure 19

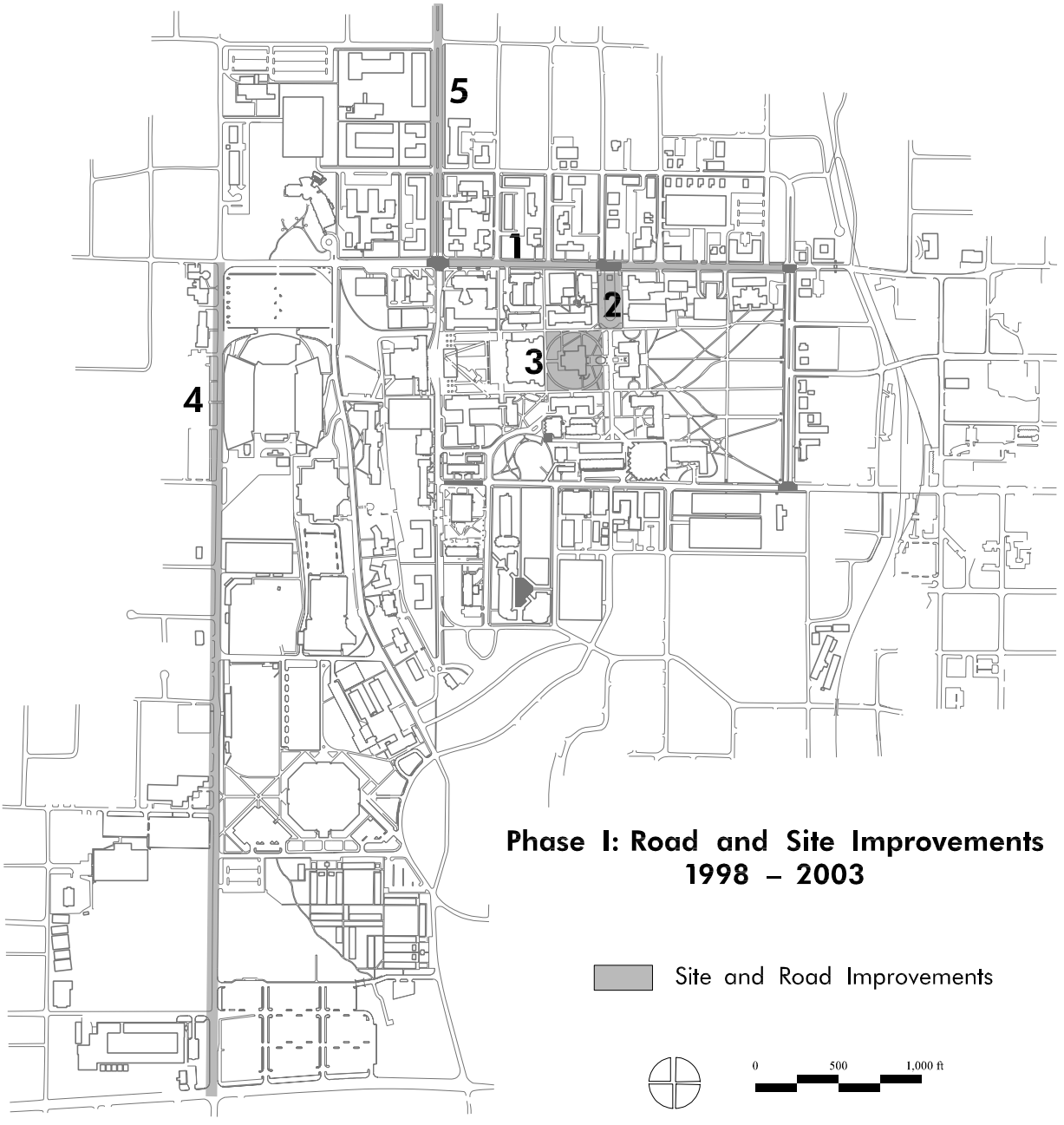

5
1
2
3
4
Phase I: Road and Site Improvements
1998 – 2003
Site and Road Improvements
0
500
1,000 ft

Figure 20

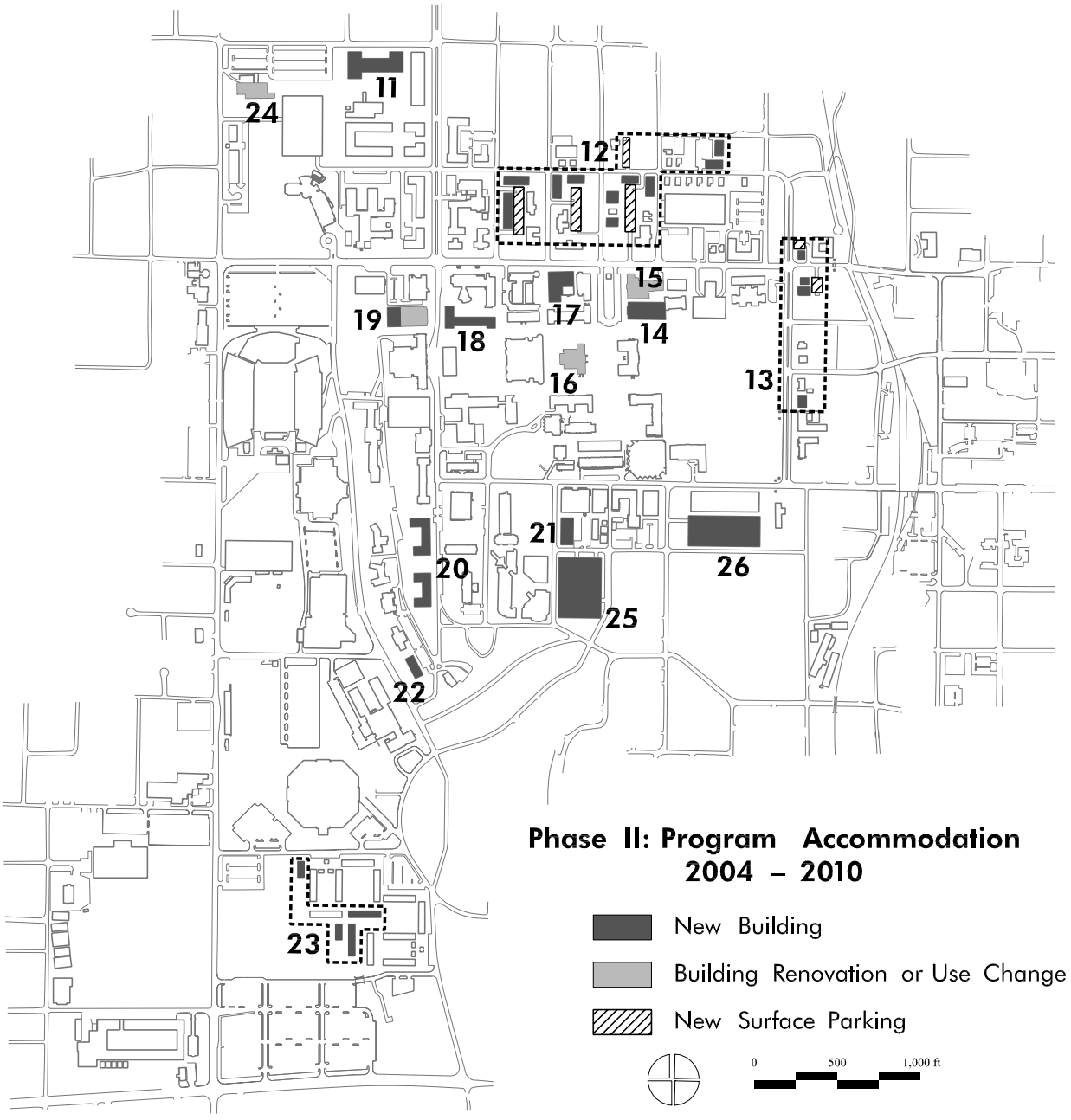

11
24
12
15
19
17
18
14
16
13
21
20
26
25
22
23
Phase II: Program Accommodation
2004 – 2010
New Building
Building Renovation or Use Change
New Surface Parking
0
500
1,000 ft

Figure 21

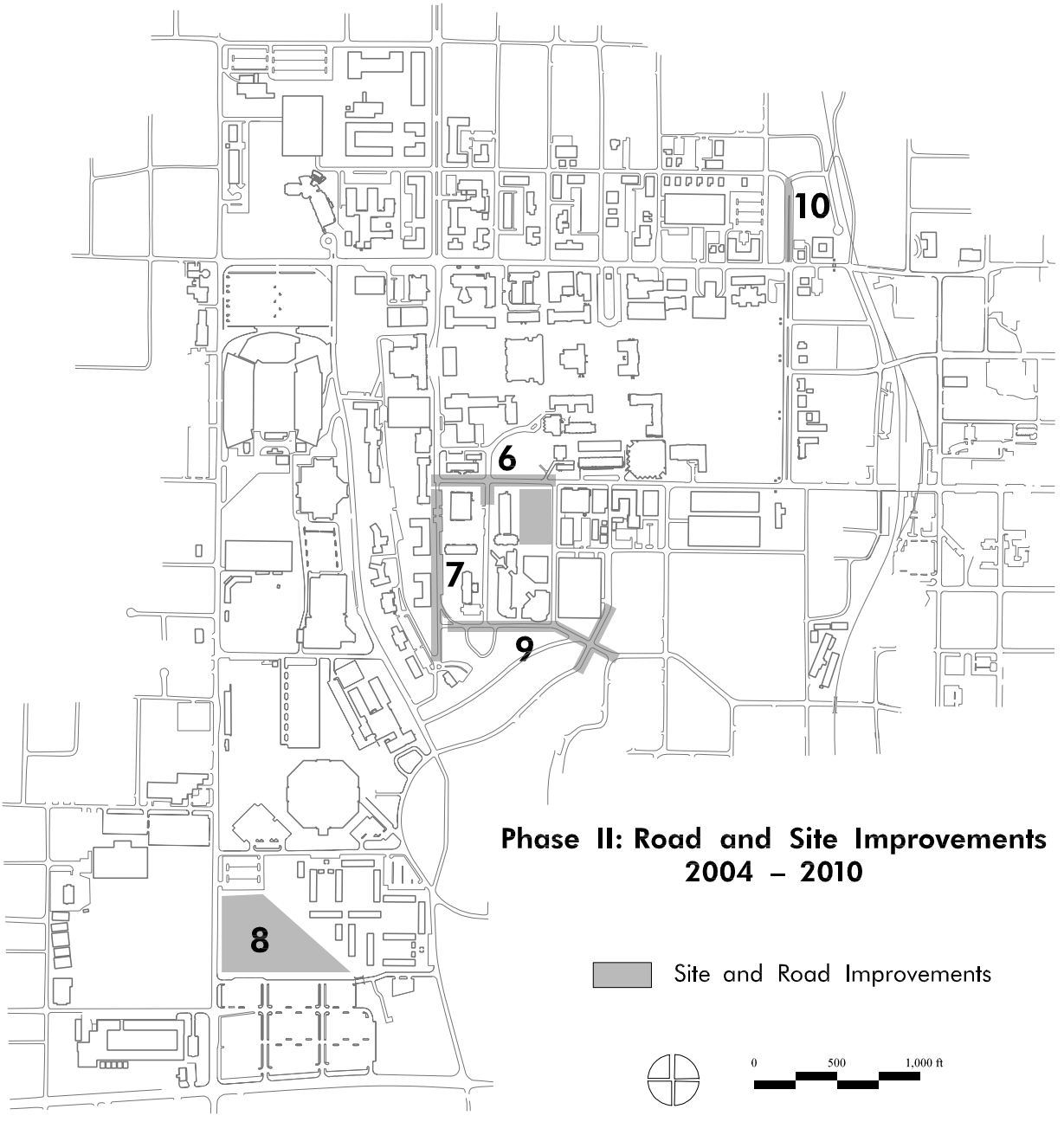

10
6
7
9
8
Phase II: Road and Site Improvements
2004 – 2010
Site and Road Improvements
0
500
1,000 ft

Figure 22