

Shelby Technology and Business Park Design Requirements and Background Information

Introduction

UofL has embraced the state's vision for a *premier, nationally recognized metropolitan research university at the University of Louisville*, and has implemented changes to achieve success in *advancing the intellectual, social, and economic development of our community and citizens*. In the Challenge for Excellence, the University of Louisville commits to the community and the Commonwealth that *we shall invest our resources to create distinctive niches of quality in teaching, research, and service—areas that distinguish the University of Louisville from other institutions—by using our academic assets in the most creative and efficient way*. We shall pursue excellence where our community needs it.

In its quest to become a preeminent metropolitan research university, UofL is developing internationally recognized programs in biomedicine, logistics/distribution, technology-based learning, entrepreneurship and other crucial areas in a knowledge-dependent economy. The University and its partners have focused on using technology to provide a competitive edge in sharply focused growth niches and for the companies evolving from targeted investments to create a *culture of entrepreneurship*. Working with its community and state partners, UofL has invested in a Technology Innovation Center (funded with legislative appropriation and grants from the Commission on the New Economy) that will promote the convergence of technology resources and life sciences to unleash the boundaries in these fields.

Campus Purpose

Through the development of a Shelby Technology and Business Park (STBP), UofL will extend its academic and community service missions to promote the goals of Greater Louisville, the Commonwealth of Kentucky, and this region. The University will use the land to encourage the economic expansion of companies directly committed to: 1) advancing the University's R&D mission, or 2) facilitating the professional and academic engagement of UofL faculty in developing new ventures, or 3) providing opportunities for UofL students and alumni to participate in the economic enterprises of the corporate tenants. Faculty, students, and alumni—in the context of these contractual relationships—would engage in advanced levels of R&D and thus increase the opportunity for research grants, consulting contracts, and licensing potential for UofL intellectual property. In exchange for leasing the land, the University will make available to its corporate partners access to undergraduate and graduate students for part-time employment, a supply of well-educated graduates, university research equipment and buildings, university social and cultural facilities, libraries, faculty for consulting, educational opportunities for spouses and other family members, collaboration on joint research projects, and adjunct professorships for appropriate company professionals.

Economic Analysis

The University of Louisville's (UofL) Shelby Campus has been identified as a major "under-performing asset". Once the home of Kentucky Southern College, Shelby Campus offers a 232-acre parcel including 180 acres with minimal development constraints located in a premier business corridor along Hurstbourne Parkway corridor. A 2001 task force of University, government and community representatives focused on using this site "to encourage the economic expansion of companies directly committed to: 1) advancing the University's R&D mission, or 2) facilitating the professional and academic engagement of UofL faculty in developing new ventures, or 3) providing opportunities for UofL students and alumni to participate in the economic enterprises of the corporate tenants." This led to a focus on development as a technology and business campus. In that process the University worked very closely with neighboring communities to ensure that future development of the site enhances the area and does not adversely impact the adjoining neighborhoods.

Regional and University Resources for Technology Development

The UofL, the Commonwealth of Kentucky and the Metro Government have targeted their economic resources toward economic development related to the health sciences, logistics and distribution, and entrepreneurial development. The Bucks for Brains program has allowed the University to expand rapidly its base of sponsored research, That research base is beginning to spawn spin-off companies to commercialize the research innovations.

Success Factors for Technology and Research Parks

Review of the experience of seven technology and research parks around the country identifies the following factors that influence their success:

- A focused but flexible master plan that guides research park development and management over the life of the park's development is essential.
- State funding is often critical to starting a research park.
- Successful research and technology parks base their strategies on clear areas of institutional or regional strength.
- Most university-based research parks are clearly separate from the main campus, but North Carolina State University's Centennial Campus is forging a new model with private businesses integrated into the campus.
- Venture capital and private company finance are secondary concerns for the technology and research park; the park's focus should be on strengthening its core competencies and research mission.
- Initial job growth and real estate development is often the result of government research grants, not private market activity.
- Research parks tend to go through distinct phases of development with slow initial development
- University-based research parks are typically located adjacent to major campus facilities to provide ease of interaction with faculty and students.
- Timing and fortuitous events shape the development and success of research parks.
- Diversification with a mixture of technology, office, restaurant, retail and housing provides a sound financial strategy while providing a more attractive set of uses for both park tenants and the adjacent community.

Implications and Recommendations for Shelby Campus

- A new technology and business park developed on the Shelby Campus will enter into a very competitive and overbuilt office market. Near-term development will depend largely on single-tenant opportunities.
- Spin-out companies spawned by UofL research will develop from time to time as research innovations emerge that warrant commercialization by local businesses. The experience of other research parks suggests that one or two new companies will be generated annually. Some will grow quickly and others will not.
- Primary demand for new technology buildings on Shelby Campus will come from second-stage companies that have secured financing or have a product ready for market Start-up and early-stage companies are more likely to favor incubator or other inexpensive facilities. Technology-generated demand is projected to range from 23,000 to 93,000 square feet annually.
- Particular demand exists for furnished "executive suites" office space rented by the month with great flexibility for tenants to grow or contract.
- Shelby Campus has a superior location to attract technology and other businesses. Development as a campus that maximizes opportunities for interaction will further increase its appeal.

To optimize the development and meet its economic development goals for the Shelby Campus, the University should:

- **Bring Shelby Campus tenants into the UofL community** by providing access to libraries, faculty, student interns, graduate student employees, specialized research equipment and facilities, recreational facilities, research seminars and athletic events and by offering adjunct

professorships to key researchers and executives.

- **Develop University facilities to create a significant on-site University presence,** emphasizing departments and programs that can benefit from interaction with technology businesses attracted to the campus and that can relocate without undermining the performance of the Belknap and Medical campuses. Much more study is needed, but the candidate programs include lifelong learning, conferences and institutes, an Executive MBA program, an entrepreneurship center, homeland security programs, health care management, the first two years of the School of Medicine curriculum, early childhood development, environmental health, medical ambulatory care services and clinical trials, logistics/IT, preventive health, the Brandeis School of Law and a new School of Pharmacy, possibly in conjunction with the University of Kentucky.
- **Develop Shelby Campus as a mixed-use community to provide early-stage** financial support, to shorten the development period and create a more vibrant and attractive environment while reducing campus-generated auto trips. The development should incorporate moderate-density housing, commercial offices along Hurstbourne Parkway and a conference center that could support the University's existing and proposed professional development programs, institutes and training programs as well as private business meetings.
- **Form a public / private partnership for Shelby Campus development that can** access State and Metro Government funding for initial infrastructure improvements while taking advantage of the unique skills and experience of private developers.

Comment [c1]: Remove Executive MBA, Med School, Law School, and School of Pharmacy Ref.

Comment [c2]: Remove reference to housing.

Project Description

Campus Environment

The University proposes to design the STBP within a park-like environment reflective of its contiguous surroundings. The STBP will include buffers and green space—including a preservation of a “front lawn” off the Shelbyville Road entrance—that enhance the prestige of the leased space, as well as the real estate of the suburban neighborhoods. UofL proposes to restrict the build out to low density, upscale business suites for corporate tenants whose missions relate to the STBP purpose. The buildings will cluster in several quadrants of the tract, and would not exceed three to four floors in height. The entrances to the campus will be designed to disperse traffic without intrusion on the existing neighborhood infrastructure. Further, the Shelby Technology and Business Park will not lease to shopping or retail centers because these establishments do not enhance the STBP purpose as described earlier. The University commits to working with a task force representative of the community to achieve a design that supports the premises described in this document.

Existing Conditions

The site for the University of Louisville Shelby Campus comprises approximately 232 acres located in the northeastern portion of Jefferson County approximately 10 miles east of downtown Louisville and the Health Sciences Campus. It is located within the Middlefork Beargrass Creek watershed. The campus can be broken down into three areas. The main body of the campus is partially bisected by the Hurstbourne Parkway. The result is a larger 189 acre site to the west of Hurstbourne Parkway and a smaller 26 acre site to the east of Hurstbourne Parkway. The campus land along Hurstbourne Parkway is part of what is called the Hurstbourne Corridor. This area is deemed to be more appropriate for taller buildings and a higher level of development. The remaining site is a 17 acre parcel located northwest across Whipps Mill Road. The Shelby Campus is located within the R4 zoning designation and is part of the Campus Form District.

The large 189 acre site is located west of Hurstbourne Parkway and consists primarily of large gently sloping open lawns mixed with mature deciduous trees of 35'-50' and a well maintained mix of understory and accent landscaping around the existing buildings, Founders Union, Burhans Hall, several dormitories and the ITRC building. These existing buildings comprise the current Shelby Campus and also include the access drives and parking lots. This area also encompasses athletic fields used for soccer. It is

bordered on the south by Shelbyville Road, on the north by Whipps Mill Road and the Middlefork Beargrass Creek, and on the west by the Moorgate residential subdivision. The southeast corner of the site abuts a retail development that front onto Hurstbourne Parkway. There is a 60' wide ROW that extends from Hurstbourne Parkway to the campus property line. The site gently slopes from a high elevation of about 640' at the southeast corner of the site along Shelbyville Road, towards the north and northwest to an elevation of about 600'. This averages a 1% slope over the majority of the campus. The existing grade along Hurstbourne Parkway is around elevation 616', with the Parkway raised on a berm about 8' above the surrounding land. Stormwater is primarily channeled through surface vegetated swales across the site following the existing roads, and exiting into existing storm drainage facilities at the northern end of the site along Whipps Mill Road. There are minimal piped crossings at existing roads. The northern area of the site also includes a large stormwater detention basin that is part of the regional MSD system. This area is excluded from future development. Vehicular access to this site is by pole lighted entry drives from both Shelbyville Road on the south and from Whipps Mill Road to the northwest. The campus topography allows for significant solar exposure for the majority of the site. There is a small cemetery located in the northwest corner of the site adjacent to the Moorgate residential community. This cemetery will have to be maintained and access will need to be provided to the public. The surrounding major roads, Hurstbourne Parkway and Shelbyville Road are a source of some elevated levels of noise. This will increase as the levels of traffic increase in the future. The local air quality has not been tested for this report, however the 2020 Louisville and Jefferson County Comprehensive Plan prepared in March of 2002 and available on the LOJIC web site, indicated that there is a potential carbon monoxide hot spot at the intersection of Shelbyville Road and Hurstbourne Parkway. The remainder of Hurstbourne Parkway is considered by the 2020 Plan as an area of concern for carbon monoxide.

The second parcel is located east and south of Hurstbourne Parkway and comprises approximately 26 acres. It is bordered on the south by the Hurstbourne Forum commercial development and on the east by the Foxboro Estates residential subdivision. The majority of the site consists of gently rolling grades with steeper grades along the shared east property line with Foxboro Estates. These steeper slopes contain areas of highly erodable soils that will need stabilization during construction activities. Approximately 50% of the site is covered with mixed deciduous tree vegetation primarily in the areas of steeper slopes.

The third parcel is located northwest across Whipps Mill Road and is about 17 acres in size. Approximately 13 acres of the parcel are located within a FEMA flood plain and are not suitable for development. The remaining 4 acres are partially covered with a mix of deciduous trees. This parcel slopes down away from Whipps Mill Road and contains areas of highly erodable soil. These soils will need to be stabilized during construction.

Proposed Development

The planning concept for the Shelby Campus results from (1) University of Louisville's desire to make the campus a performing asset, (2) Develop a distinctive identity to the campus with a creative walking environment, (3) minimum public investment (4) follow through on previous development commitments to the community and (4) existing site conditions and environmental constraints. The proposed development comprises three development phases: Initial Development, Second Stage Development, and Full Build Out.

Initial Development Phase

The Initial Development Phase (Years 0 to 5) will consist of the development of two new commercial buildings on the West Campus fronting on Hurstbourne Parkway totaling 240,000 square feet. These building sites are located within the Hurstbourne Corridor. This corridor as illustrated in the 2002 Louisville and Jefferson County Comprehensive Plan is a linear commercial zone located along both sides of the Hurstbourne Parkway that is suitable for more intensive development. The new buildings proposed in the Initial Development Phase will be the tallest buildings on the campus. Possible uses of these buildings will be for Corporate Office / Research and a Conference Center with guest rooms. The building located to the south will be a totally new commercial office facility with on grade parking provided at approximately 4 spaces / 1000 gsf. The building on the north is located on the site of the existing ITRC

Comment [c3]: Remove

building and will possibly be a combination of new and renovated facilities. This building will also have on grade parking provided at approximately 4 spaces / 1000 gsf. These two building sites are very prominent and as such will set the standard for the architectural and landscape quality for the initial phase and future development of the Shelby Campus. The geometrical layout for these buildings and the associated parking develop a common open space landscaped area between these buildings fronting on Hurstbourne Parkway. This open space is the first component of the final master plan design that will develop a series of these open space quadrangles along the linear pedestrian walkways that will ultimately extend from this first development site to Shelbyville Road. This open space area will include a landscaped water feature that will function as a detention basin for storm water management purposes. The stored water will be used for irrigation.

This initial development phase will also include a new divided main entry road serving these two new buildings, providing a new vehicular entrance to the campus from Hurstbourne Parkway and Shelbyville Road. The divided main entry road on the west campus site will be completed during this phase. This completed roadway will create a new entrance at Shelbyville Road and will connect to the section of the main road completed during the Initial Development Phase. The intersection at Shelbyville Road will be aligned with the existing Whittington Parkway intersection and will be a signaled intersection. This intersection will replace the existing Shelby entry. An entry feature similar to the one constructed during the Initial Development Phase at Hurstbourne Parkway will be built at this time. This will provide continuity in the public image of the entries to the Shelby Campus. Several internal minor roads creating a loop around the central quadrangle area buildings will be developed during this phase. The entry drive from Whipps Mill Road will be slightly realigned to form a new 4-way intersection with this minor road internal roadway system:

Hurstbourne Parkway will also be upgraded at this time, to provide a signaled intersection with additional turning lanes into the new Shelby Campus. This vehicular entry may incorporate features such as stone walls with decorative lighting and accent plantings of flowering trees and shrubs. Seasonal plantings for added color will also be included. This main road will also connect to the existing roadway system at the campus to provide continued access to all remaining existing facilities. The main roads will be 2 lanes in each direction separated by a 16' wide median. There will be a single row of deciduous shade trees on each side of the road and also in the median. These trees will be spaced about 30' apart and will be held back away from intersections and turning lanes. The understory planting will be lawns along these roads with a mix of evergreen and flowering shrubs at intersections. The median will receive an understory planting of 3' high shrubs along the length of the road. Low growing evergreen shrubs will be located in the median at intersections to insure adequate line of sight distances. Roadways will be lighted using decorative HID pole mounted fixtures at appropriate spacing. All roads will be designed to meet city standards for dimension, loading and construction. Sidewalks will be provided.

This initial phase of development will also include a 17 acre site to the northern end of the main campus. This site will be used for higher density (12-15 units per acre) residential development. The planning of this residential development is not part of this master plan report. Although the financial and economic implications of developing this parcel as part of the Initial Development phase, is included in the Financial Analysis Report included with this study. A new loop road serving this proposed 17 acre residential site will be located to the north end of the west campus site connecting from the new divided main entry road to the existing campus road at the west end of the site near the current entry from Whipps Mill Road. This road will form the southern boundary of the residential development site. The intersection of the residential access road with the main entry road will have a landscape treatment to designate a gateway into the residential neighborhood. This will be similar to the main campus entry but at a smaller residential scale. This road will incorporate a single lane in each direction divided by a landscaped median of about 8' wide. The median will be planted with a variety of deciduous and flowering evergreen shrubs and groundcovers no more than 3' high to insure adequate visibility by drivers. The roads will be lined with shade trees at about 25-30' on center. Decorative pole lighting similar in design, but smaller in scale to the main entry road will be incorporated. The landscaping will be typical for a relatively upscale residential development in the Louisville area. Future crosswalks using accent pavers will define pedestrian crossings to connect to the future campus wide pedestrian walkway network.

Comment [c4]: Remove reference to Residential

There will be a 100' landscaped buffer along the western edge of the site adjacent to the residential neighborhood. This buffer area is part of the original commitment by the University to the residential community to help minimize the impact of the future campus development. Initial phase development will total approximately 240,000 GSF.

Comment [c5]: Committee needs to verify dimension.

Second Stage Development

The Second Stage Development (Years 5 to 25) will include a series of additional buildings on both campus sites on the East & West sides of Hurstbourne Parkway. The larger west campus site will add six new buildings clustered around the existing Burhans Hall and Founders Union forming a large central quadrangle totaling -----sf. The two buildings to be located opposite Burhans Hall and Founders Union form the enclosure of the main quadrangle. These two buildings will be developed with a special character to emulate a more University oriented architectural approach. These two buildings may or may not be occupied by the University. Both Burhans Hall and Founders Union will be renovated during this phase of the campus development. The main quadrangle is located at the intersection of the two main pedestrian axis's and will incorporate some design elements that will be suitable for use by the adjacent residential community as well as the Shelby Campus community. A site structure such as a large gazebo with an adjacent exterior amphitheatre of lawn and granite bands could provide a location for outdoor entertainment or community meetings. The pedestrian scale lighting will be extended throughout this area. Larger scale trees will be used around the exterior of this area to create a sense of enclosure. Areas of seating with fixed benches around the perimeter will also be included. Walkways of various widths will crisscross the site typical of a college quadrangle providing access to various destinations.

The other four buildings located in the corners of this development area front onto the minor internal roadways and will be more speculative in character. All of the buildings in this area will be developed to have two main points of entry. One entrance will focus on the pedestrian area within the quadrangle and the other entrance will focus on the vehicular side of the buildings where drop-offs have been indicated. The landscape design will compliment this design intent. On grade parking will be located near to these buildings and will be provided at a ratio of 3 spaces / 1000 gs€ Parking lots will be landscaped with deciduous trees and low shrubs to provide shading and to reduce the heat sink effect of large bituminous surfaces. Stormwater will be directed to swales and basins. Stormwater will be stored in the basins to be re-used as irrigation.

The residential loop road developed in the Initial Development Phase will also connect at this 4-way intersection. The main entry road will be developed to the same performance, dimensional, and landscape standards as in the Initial Development Phase.

Comment [c6]: Remove paragraph.

The minor roads are 1 lane in each direction. These roads will be lined with deciduous trees planted about 24'-26' apart. These trees will also be held back from intersections to insure adequate line of sight. Accent plantings of evergreen and flowering shrubs will be placed at entry points to buildings. Roadways will be lighted using HID pole mounted fixtures at appropriate spacing. Sidewalks will be developed on both sides of the street. Building drop-offs and all service entrances are located off of the minor roadway system.

The west campus site will also add two new three story buildings totaling 138,000 sf along the Shelbyville Road frontage. A common area building or pavilion of about 1000sf will also be developed in the front yard. This site will provide an enhanced visual public presence with it's location along Shelbyville Road. It is suitable for a single corporate user or for multiple users who want the added visibility. The quality of the development for this site will be important in setting the design standard the community will perceive for the remainder of the campus given the sites inherent public nature. The building architecture will need to be a continuation of the quality of design established during the Initial Development Phase. To compliment the buildings a significant landscaped area along the Shelbyville frontage will be developed. This area is to be primarily a large open space area with some shade trees planted in geometric patterns to accent the building geometry. Accent water features in naturalized shapes will provide aesthetic interest and will also provide storm water management uses. Water will be stored and recycled for use as irrigation. On-grade parking will be provided at a ratio of 3 cars / 1000 gsf. Parking lots will be landscaped with deciduous trees and low shrubs to provide shading and to reduce the

heat sink effect of large bituminous surfaces. Stormwater will be directed to the water features.

The site on the eastern side of Hurstbourne Parkway will add two new three story buildings totaling 150,000 s€ These buildings will be developed to aesthetically and geometrically compliment the buildings and landscape developed during the Initial Development Phase across Hurstbourne Parkway. This geometry creates an open space area in front of these buildings that will be more intensely landscaped creating a special place along Hurstbourne Parkway that identifies the Shelby Campus as a unique destination. The main entry road serving the development on the east side of Hurstbourne Parkway will also be constructed during this phase of the development It will align with the main road serving the western campus site and will be controlled by the traffic signal installed during the Initial Development Phase. An entry feature identifying the east campus site similar to the one constructed during the Initial Development Phase will be built at this time. Additional internal minor roads will also be constructed during this phase. Sidewalks will be provided along all roads. Service areas are accessed from the main service road, and drop~offs are located within the parking areas. On-grade parking will be provided at a ratio of 3 cars / 1000 gsf. Parking lots will be landscaped with deciduous trees and low shrubs to provide shading and to reduce the heat sink effect of large bituminous surfaces. Stormwater will be partially directed to the water features.

This second stage development will total approximately 1,200,000 sf.

Full Build Out

The Full Build Out (Years 25 to 100) will be the. final development phase of the Shelby Campus Plan and will include seventeen new and two expanded buildings on the main campus site west of Hurstbourne Parkway. It also includes two new buildings on the site east of Hurstbourne Parkway. The Full Build Out phase also introduces a series of two level parking decks to serve the final parking demand. This development phase adds a total of approximately 1,200,000 sf. The full development totals approximately 2,640,000 square feet. This phase will complete the primary pedestrian spine through the campus connecting the series of pedestrian spaces formed by the final building configurations. It is anticipated that during the years of the final development at the Shelby Campus, that regional mass transit systems will have been expanded and will provide significant access to the campus and as a result the projected demand for parking of private vehicles will be reduced. A ratio of 2 spaces / 1000 gsf will be provided. The order in which these buildings will be constructed will depend on a combination of market demand; developer opportunities, and University needs and cannot be determined at this time. The design guidelines will insure that the development follows the proposed plan and the intended level quality.

The two buildings that were constructed on the main campus site west of Hurstbourne Parkway as part of the Initial Development Phase will be expanded during this final phase of the project. The footprint for this expansion will eliminate some of the existing on-grade parking developed during the Initial Phase. The expansion of these two buildings will be designed to enhance the visual presence of these buildings given their prominent location along Hurstbourne Parkway, and will respect the open space landscaped area developed between the buildings along the visual axis established during the initial phase. Two story parking decks will be developed to provide parking at a ratio of 2 spaces / 1000 gsf.

The development site located east of Hurstbourne Parkway will also be completed during the final phase. Two additional three story buildings will be added totaling an additional 150,000 gsf. The on-grade parking that was developed as part of the initial phase will be partially replaced and supplemented with the development of a two level parking deck. This deck will provide parking for the full four building development on the east campus at a ratio of 2 spaces / 1000 gsf. Required landscaped buffer zones from the adjacent residential development, the Hurstbourne Forum commercial development, and from Hurstbourne Parkway will all be complied with. Buffer zones will be planted with a mix of deciduous and evergreen trees and shrubs to develop both a visual and physical barrier as appropriate for each condition. The design guidelines will address the design of these buffer areas in more detail. These buildings combined with the associated enhanced landscape development will complete the geometrical layout of the east and west campus sites along the parkway and will provide the final visual identity of the campus as a special destination point along Hurstbourne Parkway.

A pair of new two story buildings totaling 100,000 sf will be located directly to the north of the central quadrangle development on the site of the existing on-grade parking that served the quadrangle development and that was completed under the phase two development. A small shared pavilion will also be part of this development. These buildings will front on the main pedestrian axis with the pavilion becoming a terminus of this axis. The space between the two buildings will become a highlighted landscaped pedestrian plaza with scale lighting and places for people to sit and interact. Two level parking decks will be constructed on the remaining area of the existing phase II on-grade parking to the east and west of these new buildings and will provide parking at the ratio of 2 spaces / 1000 gsf.

The area located between the new residential neighborhood at the north end of the west campus site and this two building development will become a new park. It is intended to provide an active landscaped area and to also provide a buffer between the residential neighborhood and the other development areas. This area may incorporate some playing fields and court games. Planting will be more grouped in areas to provide a sense of openness for a better sense of security. Pedestrian scale lighting will be included to accent the landscape design and will enhance the level of security. This area will also include some storm water retention basins to help in stormwater management. The basins will be used as a source for irrigation water supply.

The remaining area of the west campus site located between the central quadrangle and the Shelbyville Road sites completed during the first and second phases will be developed into two separate parcels that could be considered as "city blocks". The main pedestrian spine completing the link from one end of the campus to the other will also be part of this final phase. The minor road network will be completed at this time. Building drop-off's, service yard access, parking access and connection to the main campus roadway will be completed. The first "city block" directly south of the central quadrangle will develop 4 buildings clustered around the pedestrian spine. The two buildings to the west side of the spine closest to the residential neighborhood will be two stories in height respecting the Universities commitment to limit the height of nearby buildings. The two buildings located on the east side of the pedestrian spine will be three stories high. This allows for an increase in the amount of development for the University while minimizing impact on the residential neighborhood. The exterior space created by the cluster design of these four buildings will become another quadrangle or special place along the pedestrian walkway for people to interact. It becomes another point of destination and as such will have an enhanced level of landscape design including significant lighting, seating, site structures and water features.

These four buildings will replace some of the existing on-grade parking that was built during the second phase of the development. The remaining on-grade parking will be supplemented with the development of two two level parking decks. These decks will be located on the opposite sides of the buildings away from the main pedestrian walk. These two story decks will each hold approximately 1200 cars. They will become part of the overall facility of supplying parking for the Full Build Out at a ratio of 2spaces / 1000 gsf. Access to these parking decks as well as the service entries for the four buildings will be from the minor campus roads that run east-west connecting to the main campus road.

The second "city block" adjacent to the Shelbyville Road site will develop nine new buildings. These buildings will be arranged to respect and enhance the main north south pedestrian spine but will also create a secondary east west pedestrian connection. This east west spine creates another major quadrangle. The west end of this quadrangle will be defined by a larger two story significant building that could be used for University needs or it would be developed at an enhanced level of detail suitable to its prominent location within this quadrangle. This building will have a significant drop-off facility to the west which will also include a landscaped storm water management basin. This basin will not only provide an aesthetic enhancement to the building vehicular entry but will also be used to recycle stormwater for use as irrigation. The north and south edges of this quadrangle will be defined by four developer buildings. These four buildings will also create their own smaller landscaped quadrangle areas that will help define the other vehicular drop-off locations. The eastern end of this major quadrangle area will be defined by a smaller campus development site. This site will contain two campus support facilities will be located on the east side of the main campus road and will back up to the existing retail development located adjacent to the campus along Hurstbourne Parkway. These support facilities will consist of single story buildings and will provide on-grade parking. A naturalistic storm water management basin will be located

along Shelbyville Road to compliment the basins that were developed during the second phase and to complete the front lawn design for the Shelbyville Road Frontage.

The final four buildings will be located around the prime building that forms the western end of the main quadrangle. These two story buildings will be smaller in size and could house companies or entrepreneurial enterprises that need smaller facilities. Smaller pedestrian quadrangle spaces will be created between these buildings and the main building. The four buildings will share two vehicular drop-off areas. Handicap parking will be provided at the drop-off area.

The Full Build Out Phase will add approximately 1,200,000 gsf The total campus development will provide approximately 2,600,000 gsf.

Design Guidelines

Design Guidelines for the development of the campus will be prepared prior to the Initial Development Phase. These guidelines will establish the relevant design standards for all aspects of the future campus development in order to insure a consistent quality of construction and adherence to the master plan design intent over time.

Comment [c7]: "Phrase as question, "Who should develop these guidelines?"

Building guidelines will be developed in order to insure a harmonious collection of buildings without being to restrictive on the freedom of a particular designer or developer. Variety and individuality will be encouraged within the context of the architectural unity of the entire campus. Designers and developers should be encouraged to incorporate current sustainable design or green technologies in their buildings. The University supports and encourages the mission of sustainable design.

The Shelby Campus is too big and will be developed over such a long period of time it cannot be limited to a single palette of materials. Each cluster of buildings will likely develop its own identity. A consistent design of interconnecting roads and walks utilizing light fixtures, signage, plant types, walkway paving, benches and other Hardscape elements will provide the visual and physical unity for the campus.

Individual building sites will be designed to compliment the architectural style and physical orientation of the buildings. The landscape design will be appropriate to enforce the overall design intent of creating a series of different size quadrangles. The building entries will be accented with a variety of evergreen and deciduous flowering trees and shrubs. Special unit paving may also be included. Accent lighting will be incorporated at the buildings. Paved walks of varying widths will provide a hierarchy of pedestrian movement.

Parking islands will be planted with deciduous shade trees. The long islands following the vehicular drive lanes will be planted with trees at about 30 feet apart. The islands at the end of each row will have two trees. All islands will be fully planted with a mix of evergreen and deciduous accent and flowering shrubs. The parking lots will be screened from view with hedges of evergreen shrubs about 3-4' tall. Entries to parking lots will be accented by special planting and signage. Parking lots will be illuminated using HID pole mounted fixtures at appropriate spacing. Lighting will be designed to minimize light pollution off of the campus property.

The landscape design for the interconnecting walkways will be scaled appropriately to accentuate the pedestrian nature of these areas. There will be a blending of various tree, shrub, and groundcover plant sizes, textures, forms and colors to create a sense of place and movement along these walks. There will be places of rest including benches and possible small water features for outdoor interaction. Views will be created to more distant locations to develop a sense of orientation within the campus. Special paving will be a part of this area. Landscape features such as stone retaining walls will also be a part of this zone. There will be a pedestrian scale lighting design for this area. These fixtures will be 10-12' high with HID lamps. Low level accent lighting will be incorporated in special locations along these walks. Some site structures such as Pergolas combined with accent plantings will be incorporated in strategic areas.

Development Summary:

Master Plan Phased Development Summary 29-Sep-04

Initial Phase Development

Developer Building Footprint Area	60,000 sf
Developer Building Area	240,000 sf
Parking On Grade	660 cars

Second Phase Development

Developer Building Footprint Area	327,900 sf
Developer Building Area	864,400 sf
Premium Buildings - Footprint Area	72,700 sf
Premium Buildings - Area	145,400 sf
Renovate Burhans Hall	130,000 sf
Renovate Founders Union	74,000 sf
Total Building Area	1,213,800 sf
Parking On Grade	3,400 cars

Full Buildout Phase Development

Developer Buildings - Footprint Area	467,400 sf
Developer Buildings - Area	1,094,900 sf
Premium Buildings - Footprint Area	58,800 sf
Premium Buildings-Area	117,600 sf
Total Building Area	1,212,500 sf
Parking -2 Level Decks Added	1,040 cars

Total Development Summary

Developer Buildings - Footprint Area	855,300 sf
Developer Buildings - Area	2,199,300 sf
Premium Buildings - Footprint Area	131,500sf
Premium Buildings - Area	263,000sf
Renovated University Buildings	204,000sf
Total Building Area	2,666,300sf
Parking	5,300 cars

Note: Premium buildings may be University related buildings will require a higher level of Architectural, landscape and prominent areas around the large open space quadrangle ar development plans.

On-Site Improvements Scope Description:

Partialization and Subdivision Plan:

Main Roads:

The main roads are 2 lanes in each direction separated by a 16’ wide median. There will be a single row of deciduous shade trees on each side of the road and also in the median. These trees will be spaced about 30’ apart and will be held back away from intersections and turning lanes. The understory planting will be lawns along these roads with a mix of evergreen and flowering shrubs at intersections. The median will receive an understory planting of 3’ high shrubs along the length of the road. Low growing evergreen shrubs will be located in the median at intersections to insure adequate line of sight distances. All landscaped areas will be irrigated. Roadways will be lit using HID pole mounted fixtures at appropriate spacing. The Site Utilities consist of Storm & Sanitary Sewers under the paving and Water, Gas, Electric, Telephone, Cable & Fiber Optic in the adjoining verge.

Minor Roads:

Minor roads are 1 lane in each direction. These roads will be lined with deciduous trees planted

Comment [c8]: Section needs to be written and coordinated with road and infrastructure work.

about 24-26' apart. These trees will also be held back from intersections to insure adequate line of sight. Accent plantings of evergreen and flowering shrubs will be placed at entry points to buildings. AU landscaped areas will be irrigated. Roadways will be lit using HID pole mounted fixtures at appropriate spacing. The Site Utilities consist of Water, Gas, Electric, Telephone, Cable & Fiber Optic in the adjoining verge. A minor entry will occur at Whipps Mill Road. This entrance will incorporate a scaled down version of the Main Entry features.

Parking Lots:

Parking islands will be planted with deciduous shade trees. The long islands following the vehicular drive lanes will be planted with trees at about 30 feet apart. The islands at the end of each row will have two trees. All islands will be fully planted with a mix of evergreen and deciduous accent and flowering shrubs. The parking lots will be screened from view with hedges of evergreen shrubs about 3-4' tall. Entries to parking lots will be accented by special planting and signage. Parking lots will be lighted using HID pole mounted fixtures at appropriate spacing.

Landscape Buffer:

There will be a 100' landscaped buffer along the western edge of the site adjacent to the residential neighborhood. This buffer area is part of the original commitment by the University to the residential community to help minimize the impact of the future campus development. This buffer will incorporate a variety of densely planted landscaped earth berms incorporating a variety of sizes of evergreen and deciduous shade and flowering trees and shrubs. This buffer will provide a naturalized visual and physical screening of the future development in this area of the campus. These berms will also direct the surface stormwater through swales to the regional detention basin so as to improve the surface drainage in this area and reduce the impact on the existing residential community.

Comment [c9]: Committee needs to verify dimension.

Site Utilities and Drainage:

Sanitary Sewer Mains – West of Hurstbourne Parkway

Sanitary sewer service to the proposed campus development on the west side of Hurstbourne Parkway, will need to be designed as public sewers, most of which will be constructed within the designated roadway rights-of-way and will need to connect an existing private sewer system owned by U of L, located on the north end of the property. Any existing sewer that remains in service and serves more than 1 building, will need to be dedicated for public use. Portions of the existing system will be abandoned and/or rerouted as required for the new campus layout. The developed sanitary sewer service an existing Louisville and Jefferson Co. Metropolitan Sewer District (MSD) network as determined by the authority. General - Individual building sewer service greater than an 8" diameter size, must be designed as public sewer. MSD requires a Capacity Charge based on average daily sewage flow. This is a one time fee associated with reserving capacity in the applicable sewage treatment facility.

Water Mains:

Proposed water service is to be provided from Louisville Water Co(LWC) existing mains located in Shelbyville Road and Hurstbourne Parkway in conjunction with maintaining the existing water service located on the west side of the property. Water mains routed within the designated roadway right-of-ways are to form a looped system where applicable and fire hydrants are to be provided at 500' intervals for fire protection purposes.

Gas Mains:

Proposed gas service is to be provided from Louisville Gas and Electric Co.(LG&E) mains located in Shelbyville Road and Hurstbourne Parkway. The existing gas service running in the center of the property located on the west side of Hurstbourne Parkway, will be maintained until new connection is made to Shelbyville Road. Gas mains are to be routed within the designated roadway rights-of-way are to be designed to form a looped system.

Electric Service:

Proposed electric service from Louisville Gas and Electric Co.(LG&E) will be provided from the existing overhead system located near Hurstbourne Trace the east boundary of the development with proposed service connections to LGE systems in Shelbyville Rd and Hurstbourne Parkway. All new electric services are to be routed underground in easement, typically outside of and parallel with the designated roadway rights-of-way, and to form a looped system.

Communications Systems

Proposed underground Telephone (BellSouth), Cable TV, Fiber Optics (U of L proprietary systems) and other required communication services, will typically be installed in public easements, in conjunction with the proposed electric service. Private communications lines routed thru public facilities are subject to requirements of the applicable public utility.

Comment [c10]: Needs to be confirmed with university IT Dept.

Storm Drainage

West of Hurstbourne Parkway proposed storm drainage system for the development, will extend south toward Shelbyville Road from the existing Whipps Mill Regional Stormwater Detention Basin located on the north end of the property. The outlet elevation of the proposed on-site drainage system will be set at the water surface elevation for the 100 year, 24 hour storm event in the drainage basin. Payment of the Metropolitan Sewer District (MSD) Regional Facility Fee (RFF) may be applicable, in lieu of providing detention prior to discharging stormwater flows to the Whipps Mill Basin. The current concept development plan indicates providing retention/detention basin areas for use as a water supply for irrigation. An option may be to construct detention basins in conjunction with partial reduction of the RFF. This RFF is based on proposed development relative to existing pre-development conditions. Proposed storm drainage systems to be routed in designated roadway rights-of-way and will typically run at minimum slope (0.5%) due to overall length of system and to insure servicing Parking Structures which are anticipated to be constructed 5' below the adjacent roadway elevations. Individual building/lot areas will tie into the proposed roadway drainage system. Portions of the existing system will be abandoned and/or rerouted as required for the new campus layout. Proposed construction within the flood plain of this watercourse is subject to local and state regulations. The proposed storm drainage systems are to be routed in designated roadway rights-of-ways and are to be set at elevations to insure servicing Parking Structures. Individual building/lot areas will tie into the proposed roadway drainage system. Whipps Mill Road. Proposed storm drainage ditch/pipe systems are to be installed to relieve existing drainage problems near the existing site entrance to Whipps Mill Road.

Off-Site Improvements Scope Description:**Major Campus Entries:****North Hurstbourne Improvements:**

The intersection of the main campus road and Hurstbourne Parkway -- In addition to the existing northbound lanes on Hurstbourne Parkway at this intersection, there will be a separate left turn bay for vehicles turning west into the campus. In addition to the existing southbound lanes on Hurstbourne Parkway at this intersection, there will be a separate right turn bay for vehicles turning west into the campus. This includes site preparation, paving, striping and traffic signals. This area will incorporate special entry features such as significant stone walls with decorative lighting and more extensive accent plantings of flowering trees and shrubs. Seasonal plantings for added color will also be included.

Whittington Parkway Alignment:

The intersection of the main campus road and Shelbyville Road by realigning with the Whittington Parkway. The existing entrance from Shelbyville Road will be removed. The existing Whittington Road Intersection will receive new traffic lights and striping to accommodate the turn lanes into the campus.

Concrete curbs along Shelbyville Road and crosswalk payers to cross that road will be added. This area will incorporate special entry features such as significant stone walls with decorative lighting and more extensive accent plantings of flowering trees and shrubs. Seasonal plantings for added color will also be included.

Hurstbourne & Shelbyville Road Intersection:

This is a major improvement to the Shelbyville Road / Hurstbourne Parkway intersection. Two new lanes will be added to southbound Hurstbourne; one is a left turn lane onto eastbound Shelbyville Road, and the other is a through lane. By re-striping eastbound Shelbyville Road another turn lane onto northbound Hurstbourne Parkway will be added. Additional re-striping on southbound Hurstbourne will add an additional lane on that road south of Shelbyville Road. This includes site preparation, demolition of an existing building, paving, curbs, striping, drainage, electrical work, and a traffic signal.

Comment [c11]: Informational item or included in transportation grant work.