the University of Tennessee

cherokee farm campus

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Project Background

The University of Tennessee proposes to develop a state-of-the-art, technology-oriented research campus at Cherokee Farm. The specific mission of this research campus is to enhance the University's ability to promote economic development, maximize the unique resources and partnerships, and take a national leadership position in innovative research.

The University initially engaged Robert A. Ivy, editor of Architectural Record, to present an overview of landscape and architectural design as represented on the best sites across the country. He provided conceptual guidance as the University and the planning committee explored options. The report concluded that with a clearly defined vision, a programmed master plan, and the proper investment of intellectual capital, Cherokee Farm could achieve national or international prominence for the University.

Cherokee Farm will be a standalone research campus managed by the University of Tennessee System. There will be opportunities for collaboration among the University campuses and institutions and other University partners.

Purpose of Study and Planning Process

The University hired EDAW to conduct a feasibility study to determine the viability of a research campus at Cherokee Farm, and what that campus may look like.

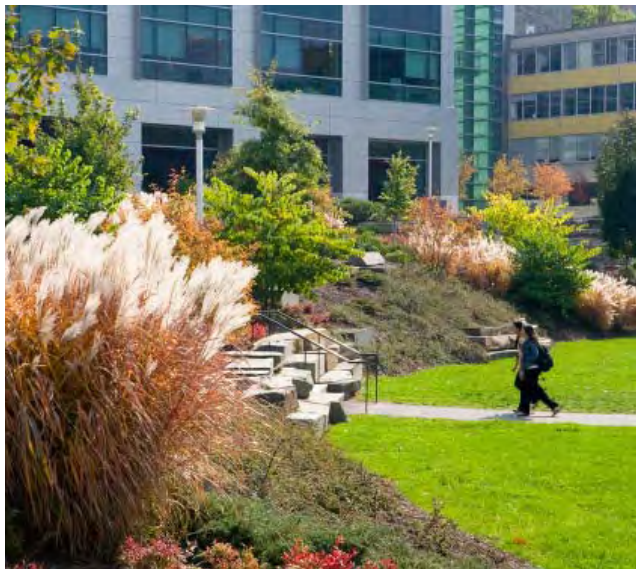
EDAW initially met with University representatives on January 4, 2008 to discuss scope of work, process, and project intent. Over the course of about 6 weeks, EDAW developed a process and methodology for the project, gathered initial data, analyzed trends, and explored the existing site.

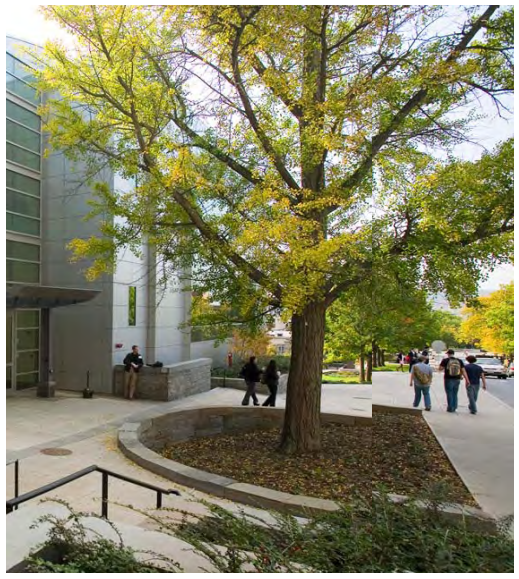
Expectations were that this plan would be the first step in defining a process for developing the research campus.

Throughout the project, a planning committee chaired by UT Executive Vice President David Millhorn provided input and direction for the development of a feasibility study for Cherokee Farm. Membership included representatives from key constituencies, including: UT System, UT Knoxville, UT Institute of Agriculture, UT Health Science Center, UT Medical Center, Oak Ridge National Laboratory (ORNL), City/County Government, Knoxville Area Chamber Partnership, private sector business people, and community residents.

University Vision

The University's stated vision for Cherokee Farm is as an interdisciplinary research campus that focuses on solving problems of national significance. The nature of the interdisciplinary research will embrace the "Nano-Info-Bio" strategy that will be applied to the most significant scientific challenges facing the nation and the world. The research will be closely aligned with the Oak Ridge National Laboratory and private-sector organizations with a similar focus and vision. The Cherokee Farm Campus will provide a modern platform for graduate level





education and provide a site for collaborations and partnerships with other regional and national universities and national agencies.

The new campus will feature world leadership in computing and computational science, biomedical research, material science, climate and atmospheric science, environmental research, energy science, and numerous other disciplines. An important outcome is the enhancement of economic development in the region and state. The University plans to provide undergraduates with the opportunity to participate in research initiatives at Cherokee Farm.

A primary goal of the Cherokee Farm Campus is enhancing the overall scientific perception of the University. Thus, the University plans to have an architectural design that will be innovative and pleasing to the eye. They also expect the buildings to feature modern energy conservation technologies. The University anticipates that the space will be somewhat flexible, with emphasis on an open laboratory design.

Site Evaluation

The site is a 188-acre, mostly undeveloped piece of land that has been used primarily for agricultural uses by the University. The site has a rich history of settlement, and there are a number of artifacts that have been found through archaeological surveys.

Among the characteristics evaluated are: topography; aspect; vegetation; fauna; archaeology; physiography/ geology/ geomorphology; soils; floodplain/ floodway; views and vistas; utilities; transportation and parking; and buildings.

Site Survey - A detailed site survey of the Cherokee Farm Campus has not been conducted. For this study, we utilized 10-meter DEM data for analyzing topography. Based on slope, the majority of the site is buildable.

Vegetation - There are mature, stately oaks scattered throughout the mid and upper reaches of the site. The lower portions of the site are planted with row crops, and there is rolling pasture above the agricultural fields.

Archaeology - A series of archaeology studies have been conducted on the site. The Archaeological Research Laboratory (ARL) at UT's Department of Anthropology conducted a Phase I archaeological survey from March 8, 2005 through April 19, 2006. Previous studies (Marcel et al. 2004) recorded two sites – 40KN45 and 40KN113. A Phase II assessment documented significant archaeological deposits at both sites.

ARL recommended 40KN45 not be disturbed, or at least a rigorous program be implemented to mitigate potential adverse effects of developing the campus. (Angst 2007)

With the exception of site 40KN45 and the multiple sinkholes on the site, no additional investigation is recommended within the study area. ARL stated that the proposed redevelopment of the Cherokee Campus should be allowed to proceed within the project area. (Angst 2007)

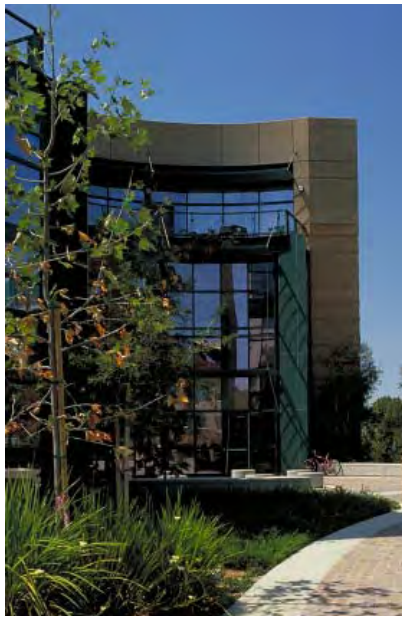
Floodplain - Lower portions of the site are in the floodplain, and these areas should not be built upon.

Views & Vistas - Views from the campus looking north, west, and southwest are very scenic. A potential concern for many residents is the impact development of Cherokee Farm would have on their views.

Utilities - Development of the site into a research campus will require the complete renovation of existing utilities. In essence, existing utilities will need to removed and completely replaced with all new facilities. UT has already received $32 million in state funds to be used for infrastructure including roads, construction preparation, and base utilities.

Transportation and Parking - Primary access to the Cherokee Farm Campus is from Alcoa Highway. Currently, southbound traffic can make a right turn into the campus from an at-grade driveway.

One of the biggest limitations to building on the site is the setback requirements associated with Alcoa Highway. There is a 1000' buffer, and within that buffer, buildings can't be constructed more than 35' higher than the road in order to maintain views. Because the Cherokee Farm Campus slopes down toward the river, it is possible to build taller structures on the site.



Programming

After interviews members of the steering committee, EDAW developed a list of potential programming needs for the Cherokee Farm Campus. They are as follows:

- Create a national perception of excellence for research for the Cherokee Farm Campus
- Emphasize that the Cherokee Farm Campus is all about innovation … the life-cycle is very short, and fast turnaround needs to be accommodated to allow innovation to occur as quickly as possible
- Create a green, inviting campus consisting of smaller structures that aesthetically fits the landscape ... the campus will simply become more dense as additional buildings are added
- Go beyond what is expected for a standard research park… create a place where scholars come together ...emphasize an integrated approach to research and development, such as the Tennessee Biofuels Initiative
- Develop research space in phases to be completed over a 10 to 15 year time frame ...three buildings are currently anticipated for the site. First to be built

is a state/federally funded Joint Institute for Advanced Materials building. The other two buildings include a privately funded research facility and a UT funded building

- Focus on research areas such as: advanced materials, computational science, biomedical science, and environmental / atmospheric science, just to name a few
- Model project after several of the nation's most successful university-based research parks
- Anticipate a 1/3 private, 2/3 government sector mix
- Develop a site plan approach that involves a low–density, low-impact building layout and pedestrian/bicycle-friendly design
- Develop the campus to serve as a gateway into the city and create a strong statement, especially for visitors coming in from the airport,
- Emphasize sustainability, flexible, collaboration, and openness
- Emphasize the integration of interior and exterior spaces, and the creation of memorable spaces

- Protect cultural resources and potential burial sites in the lower reaches of the site by avoiding any type of excavation
- Bring in signature firms to help design pieces of the campuses, such as individual buildings
- Determine which facilities can be shared
- Provide some space for a given program or discipline that brings people in on a short-term basis
- Make space malleable, with an emphasis on the need for flexibility of space

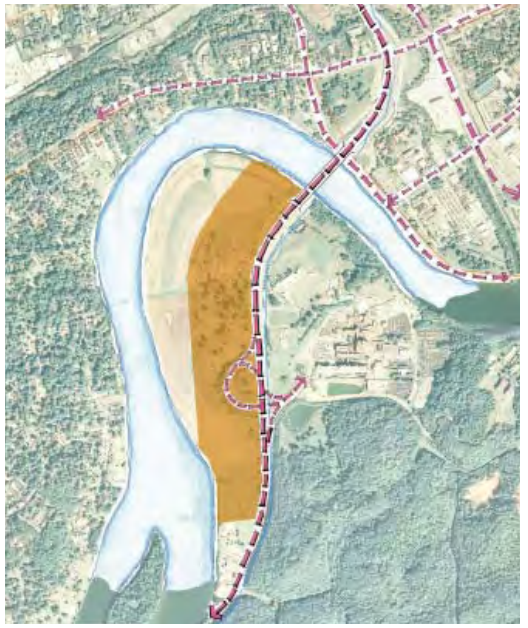
Basic Design Concepts

For the Cherokee Farm Campus, the preference is to go with smaller buildings that range in size from 50,000 square feet up to 200,000 square feet instead of larger buildings. This will create a more campus like setting that will accommodate walkways, gathering areas, shade trees, and other amenities.

Key features of the Cherokee Farm Campus include the following:

Campus Design

- Substantial space for significant future research growth
- Flexible development options led by the University
- Develop the campus utilizing sustainability principles
- Design the campus in a collaborative process to fit harmoniously with existing cohabitants of adjacent areas



- Cluster structures to protect and enhance open spaces for environmental, cultural, or public gathering purposes
- Reduce amount of paved areas
- Provide a minimum of 80 to 120 rooms for a conference center hotel, with sufficient meeting space to accommodate small to medium sized conferences
- Develop 6,000 and 7,000 square feet labs instead of 1500 sq. ft. labs because they are more flexibility and more interactive
- Incorporate a botanical garden, a conservatory, and/or other uses that have a strong environmental focus

Technology Infrastructure

The guiding principles for developing the technology infrastructure for Cherokee Farm focuses on providing a responsive IT environment that enriches and enhances learning and creativity.

- Ensure information technology helps fulfill the University's mission by allowing members of the campus community to communicate, collaborate, learn, and disseminate, within and across disciplines and campus borders
- Ensure that the campus IT infrastructure is stable, safe, and secure enough to protect the intellectual property and resources
- Ensure campus priorities drive IT strategies and investments

Transportation

The basic concept for transportation is to provide for a variety of options that enable people to get to the Cherokee Farm Campus. The transportation systems will encourage people to use alternative modes of transportation, including: walking, bicycling, and cooperative transportation.

A new interchange will need to be designed for the connection with Alcoa Highway, and the University will need to work closely with the Tennessee Department of Transportation (TDOT) to ensure this interchange is consistent with project goals.

Roads and transportation will be focused on the upper third of the site nearest Alcoa Highway.

Parking

The basic concept for parking is to keep automobiles along the eastern perimeter of the campus near Alcoa Highway. Emphasis will be on minimizing surface lots and providing parking structures to meet the needs of campus users.

Environmental Sustainability

Emphasize green development and environmentally sound planning, with LEED certification being a key requirement for the buildings. The mandate for the Cherokee Farm Campus is to develop a plan that will minimize impact on the environment and use renewable energy sources and “green” building practices.

Concepts

The intent of this study is to explore the feasibility of developing a research park on the Cherokee Farm Campus that would meet the stated goals of the University. Is it possible to accommodate the programming requirements and still create a campus that is green, sustainable, and aesthetically ‘fits’ the area.

We generated two basic concepts - one that kept all development on the 148-acre site west of Alcoa Highway, and a second that included a 40-acre site east of the highway.

There are commonalities for each of the two concepts.

- Preserve the lower third of the site and develop it as a greenway that includes trails, ornamental plantings, interpretive signage, and gathering areas.

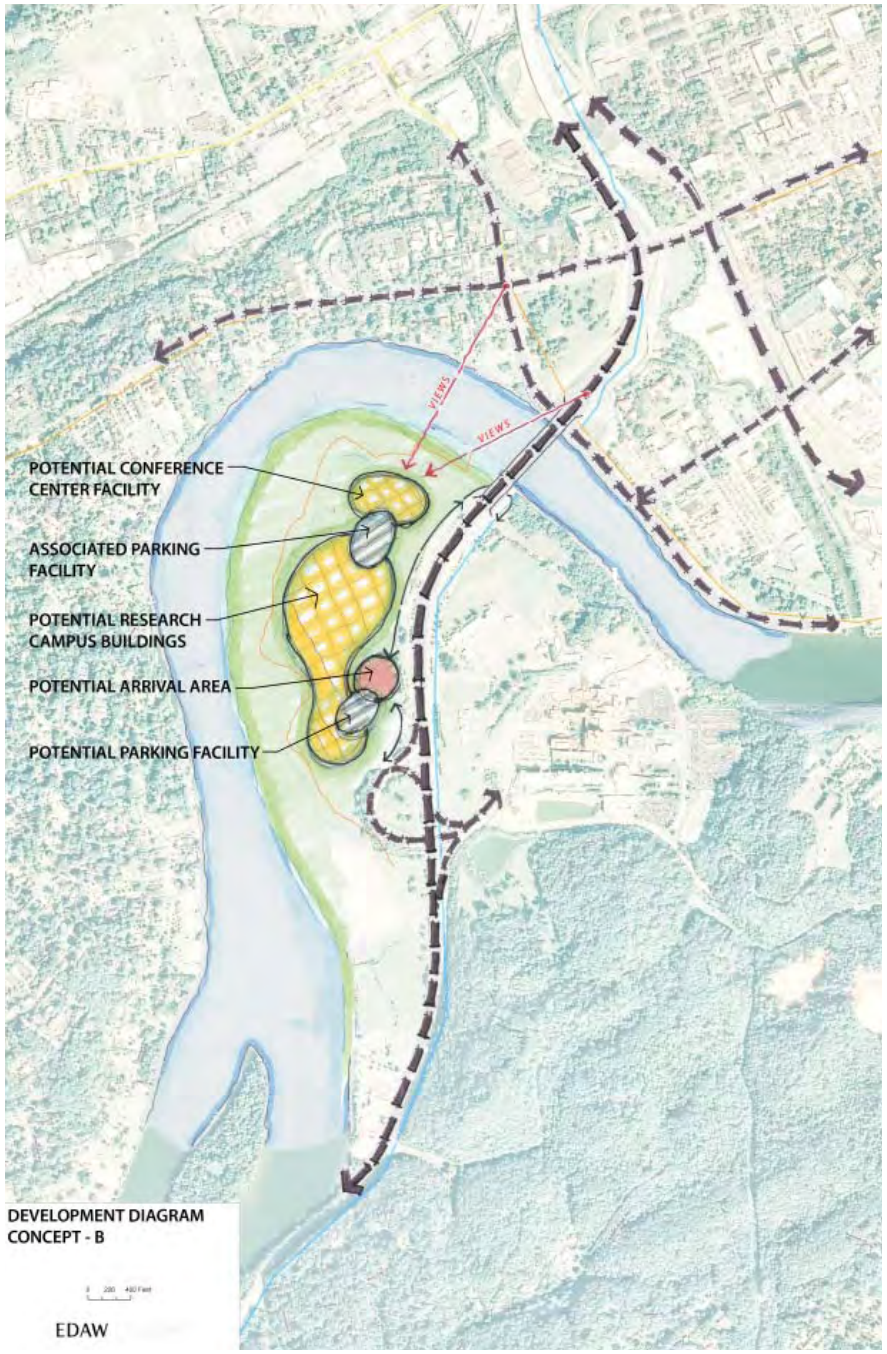
- Develop the middle third of the site as a complex of structures to meet research, office, convention center, and other usage requirements.
- Develop the top third of the site nearest the highway as the primary entrance and focus on providing parking in this area.

Both concepts are also based on the Programming and Basic Design Concepts that are discussed in this report. The focus is on providing research facilities that are part of a larger campus that is green and pedestrian oriented.

It is important to note that in order for either concept to be successful, it is critical that a flexible and robust infrastructure be developed early own in order to accommodate the level of construction expected over the next ten years or so.

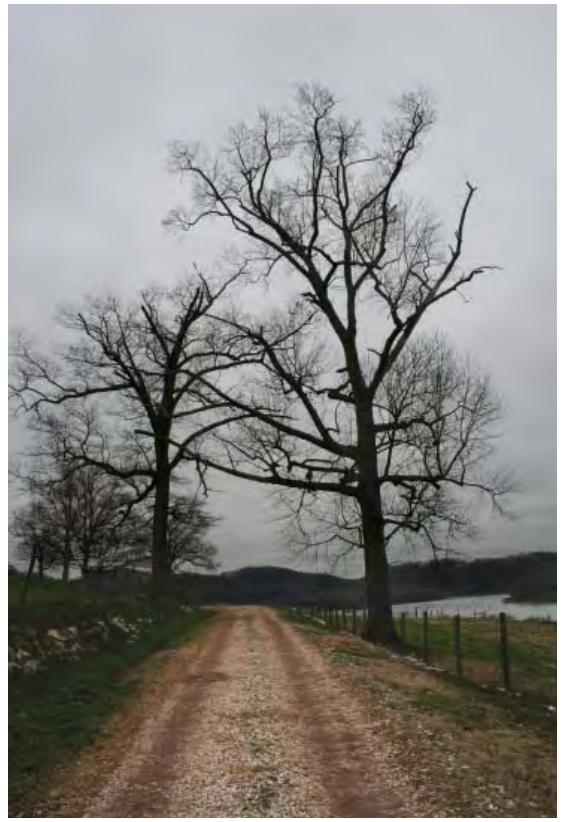
With Alternative A (right), all development would occur west of Alcoa Highway. The conference center would be located at the northern tip of the developed area. This site would be very visible and would require an architectural structure that would be considered a visual landmark.

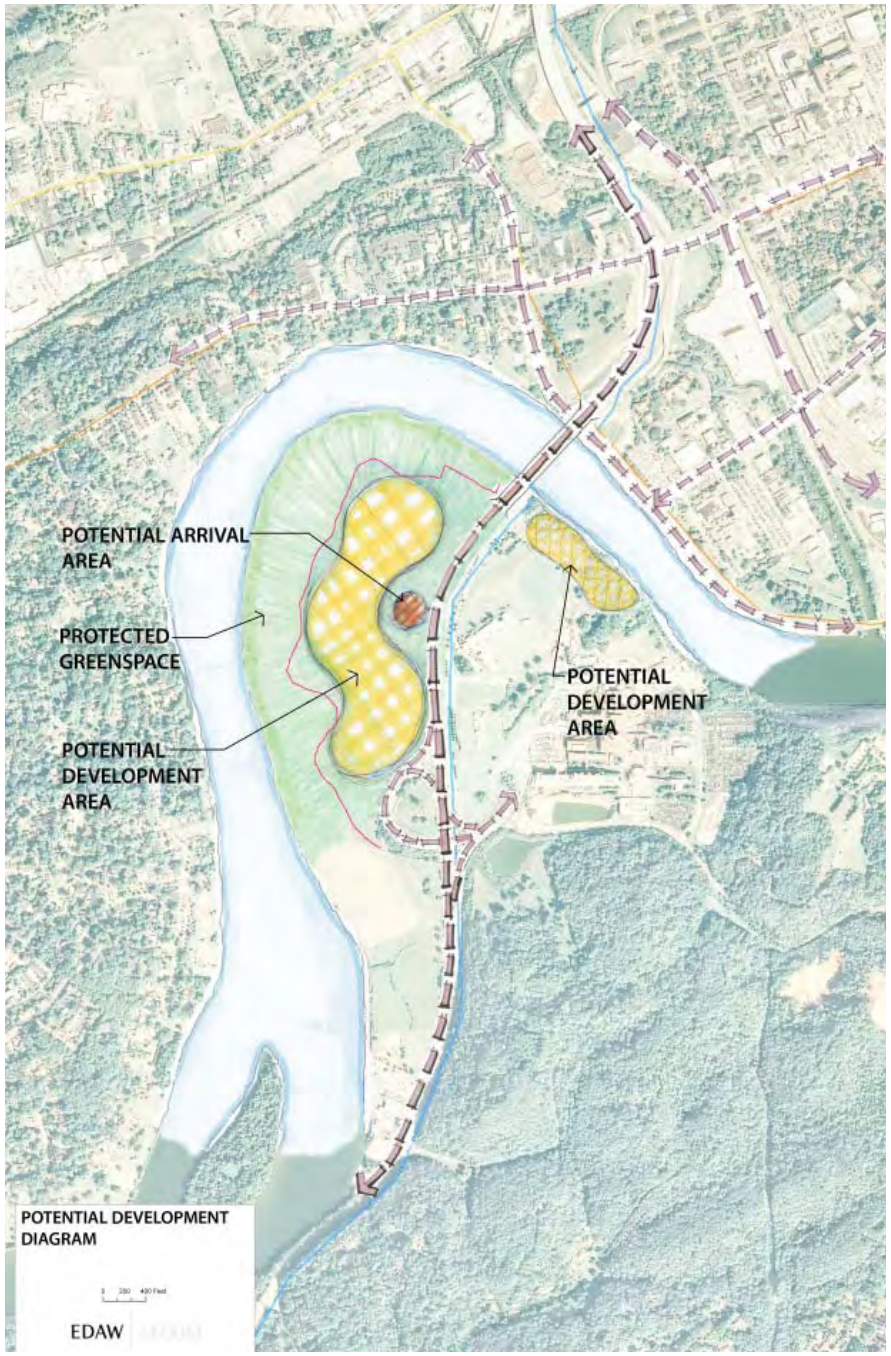
The location of these buildings may vary depending upon different alternative concepts. The buildings along the upper parts of the site would be two-story because of height limitations



associated with Alcoa Highway. Buildings located further down the slope could be taller depending upon the potential visual impact they would have.

With Alternative B (next page), the majority of the development would occur west of Alcoa Highway on the 148-acre site, but there would be additional development on the 40-acre site east of the highway and adjacent to the river.





The 40-acre site could be used as a conference center that serves the needs of the Cherokee Farm Campus as well as the University of Tennessee Medical Center. Costs for this facility could be shared by the two. Another option is to use the 40-acre site for additional research space, with the convention center being located west of Alcoa Highway.

The basic development of the 148-acre site would be similar to that of Alternative A, with emphasis on building along the upper two thirds of the site.

Conclusion

Based upon this study, the University's vision of the Cherokee Farm Campus as an interdisciplinary research campus that focuses on solving problems of national significance is viable. This vision is based upon an understanding of what has been successful for the top research campuses worldwide. By building upon this base of knowledge, expectations are that Cherokee Farm will be able to go beyond what is expected for a standard research park and create a place where scholars come together.

Focusing on research areas such as advanced materials, computational science, biomedical science, and environmental / atmospheric science will help create a national perception of excellence for research at the Cherokee Farm Campus. This perception will be further enhanced by creating public/private partnerships with Oak Ridge National Laboratory and other private-sector organizations involved with cutting edge issues.

The commitment the University is making to develop the campus utilizing sustainability principles will set an example for future development within the region and beyond. By creating a green, inviting campus consisting of trees, ornamental plantings, public open spaces, trails, plazas, site amenities, and smaller structures that aesthetically fit the landscape, the Cherokee Farm Campus will be viewed as a community asset and public gathering area.

Once developed, the proposed research campus is expected to significantly enhance economic development in the region and state. This resurgence in development is part of the broader vision of the Cherokee Farm Campus.