THE URBAN-RURAL CONTINUUM

intent
Assess the current state of the rural character by using a photo-questionnaire survey that identifies the user’s perception of the rural landscape.

what we learned
- The elements of the natural landscape are preferred.
- Expansive views of open space, woods and hills are preferred.
- Signs of civilization detract from scenic beauty.
- Mature trees and extensive landscaping improve visual quality.
- Minimal setbacks and homes too close together detract from aesthetic appeal.
- The transition zone between city and countryside is becoming unclear.
- Urbanization is moving into the land between Georgetown and Sadieville. These lands were rated as having the highest rural character and most attractive scenic beauty.
- Conserving this land is in the best interest of the stakeholders.

recommendations
- Use topography, landscaping, and creative site design to screen housing subdivisions from view.
- Cluster homes around open spaces.
- Redevelopment of commercial town center.
- Residential landscape needs to promote civic identity, respond to changing households.
- Examine the urban-rural continuum in the urban development perspective.
- Knowledge and understanding of population composition is key to providing public services.
- Establish a transfer of development rights program to conserve agricultural land and open space.

Assessing the visual quality of the landscape throughout the county served as a way of gaining a holistic understanding of the relationship between the built and natural environments. Insights into these characteristics develop awareness regarding past development practices.
Controlling urbanization as a way of maintaining rural character and increasing prosperity of agricultural economy by making recommendations based on stakeholder preference.

The open lands and rolling hills in the northern part of the county are perceived to have higher rural character and higher scenic beauty.

Signs of civilization are perceived to be a detracting feature from scenic beauty and closeness of homes was described as “city homes in county setting.”

The rural landscape is perceived to be experiencing an increase in urbanization which is detracting from the scenic beauty and lowering its rural character.

Community participation, in the form of photo-questionnaires, was a key component in understanding stakeholder’s perception of their landscape. Feedback was gathered from this survey and applied to design recommendations concerning aesthetic qualities across the urban-rural continuum.
This prototypical urbanization study looked at the North Broadway corridor in downtown Georgetown. Opportunities for Smart Growth infill development and revitalization were explored through inventory, analysis, design and planning, as well as following the community vision.

A map of the existing land uses illustrated spatial configurations of the urban infrastructure (figure 1). An analysis map was created to identify the full range of opportunities within the area in order to present the most suitable scenarios for improvement of connectivity and urbanization (figure 2). Areas of opportunity include the intersection of Washington Street and North Broadway, the North Water Street corridor, the historic Model Mills site, and the area stretching from Penn Avenue to the North Elkhorn Bridge along North Broadway. Also identified as an area with opportunity for connectivity was the entire area along the Royal Spring Branch.

Issues associated with reliance on the automobile, sprawl development such as an abundance of surface parking lots, a lack of diverse housing, and poor quality green space in the downtown area were also identified.

Through an inventory and analysis process the core of the urban environment was mapped. This allowed the team to identify opportunities in this area that reflected the points of emphasis expressed by stakeholders in community meetings.
URBAN INFILL + REVITALIZATION

**approach**

Ideas and recommendations were developed which incorporated the eight planning principles (figure 3) at varying levels of rehabilitation, revitalization, and redevelopment. Future visions include transforming the currently scattered and disconnected area along North Water Street into an iconic gateway into the downtown area through higher density mixed-use buildings (figure 4). Other recommendations include revitalizing the historic Model Mills through adaptive reuse for recreation and local economic viability (figure 6). Creating better pedestrian connections by mixing land uses, providing urban green space, and increasing civic amenities were also important components of the vision (figures 5 and 7). Stakeholder collaboration allowed for a more cohesive, realistic approach built on the overall community vision, while still planning for future growth.

Enhancing community identity and quality of life were issues that influenced the recommendations for the infill and revitalization of this urban environment. Transforming main roads into iconic gateways and rejuvenating historic landmarks through adaptive reuse were all proposed.
Projected population growth within the study area indicates there will be an increased demand for residential neighborhoods. To improve upon current urbanization practices, a variety of alternative design strategies were integrated with stakeholder input to form sustainable neighborhood developments.
recommendation
After extensive research and stakeholder input, a final design (figure 6) was created that incorporates a variety of density scales and adheres to Smart Growth practices. Amenities in the final plan include a pedestrian mall within a mixed-use area (figure 7), in addition to an extensive trail network and conservation areas located throughout the site (figure 8). Areas designed to enhance interaction with Dry Run Creek provide educational opportunities for local schools.

To address the stakeholders’ desire for improved quality of life, Smart Growth and New Urbanism development strategies were implemented on a site to serve as a prototypical model for the entire county. These strategies integrate environmental, social, and economic concerns in a holistic manner.
RURAL HOUSING STRATEGIES

overview
Residents of Scott County, Kentucky, have identified the rural landscape of the county as a significant resource that is worth preserving for future generations (Figure 1).

Continued development pressures in rural areas of the county threaten the integrity of the culturally significant rural landscape. Existing development throughout the county has disrupted the continuity of the rural landscape and interjected housing and other landscape elements that are not perceived as compatible with the surrounding rural landscape.

intent
To develop three prototypical urbanization concepts which reduce the visual intrusion of housing development in order to maintain the impression of a rural landscape.

design process
A multi-step process was followed in order to generate a three dimensional model of a selected site. This model was ultimately used to help illustrate three different design concepts. The modeling process took advantage of several computer programs, such as ArcGIS, AutoCAD, and Google SketchUp. The final product of this process was a photorealistic model as seen in Figure 2.

figure 1 Crumbaugh Road in southeast Scott County exemplifies some of the qualities of the rural landscape.

figure 2 A 3D model was constructed using Google SketchUp to illustrate design concepts. The model began with a simple surface, and progressed to a photorealistic model with 3D trees. (Data Source: Kentucky Geography Network)

Preserving the rural landscape became a constant theme expressed during community input sessions. This resource has recently faced increased development pressure as a result of population growth. Several development strategies were proposed to mitigate the effects of growth and preserve the rural landscape.
RURAL HOUSING STRATEGIES

recommendations

This model was used to help generate perspective visualizations of three design concepts (Figures 3-5). These three concepts represent a hierarchical approach which examines a series of development strategies ranging from the least complex to the most complex.

The first design concept recommends increasing the minimum lot size from 5 acres to 20 acres. The second design concept recommends clustering homes together on smaller lots, and using existing vegetation and topography to screen dwelling units from view. The final design concept recommends clustering no more than four homes together in such a manner as to imitate existing farmsteads in Scott County. This concept also takes advantage of vegetation and topography as a way to screen dwelling units from view.

figure 3 The first concept recommends an unobtrusive drive (1) and a restricted lot size (2).

figure 4 The second concept recommends a shared open space (1), smaller lots (2), vegetative buffers (3), and topographic buffers (4).

figure 5 This concept clusters four homes together (1), uses vegetative and topographic buffers (2 & 4), and reduces the number of drives (3).

Three strategies were presented to the community that reflect different conservation tactics aimed at preserving the rural character of this landscape. Increased lot sizes, clustering techniques and an approach using traditional farmsteads give the community a variety of potential options.
EXTENDING THE LEGACY TRAIL

overview
Approximately twelve miles in length, the Legacy Trail is the longest paved multiuse trail in Central Kentucky (Steve Austin, Personal Communication, March 23, 2011). The Legacy Trail opened in September of 2010, in time for the Alltech FEI World Equestrian Games that were held in Lexington at the Kentucky Horse Park. The trail served as a nonmotorized and recreational method of getting people back and forth from the Kentucky Horse Park and downtown Lexington. Extending the trail provides an excellent opportunity to continue the precedence set by the existing Legacy Trail segment as a greenway trail for the Bluegrass Region. Working towards the creation of a regional greenway system will allow for nonmotorized modes of transportation, which are more sustainable in regards to energy use, air quality and water quality. Extending the Legacy Trail provides the opportunity for Scott County to encourage active recreation and increased physical activity. It also provides access to the cultural, historical and ecological landscapes of the Bluegrass. These opportunities will assist in improving the physical and social health of communities within the Bluegrass Region.

This project was organized into three phases, which would help in the process of gaining support from the public, the landowners affected and politicians (figure 1). Phase one is established as the existing Legacy Trail segment, which expresses progress and possibility. The second phase is the Horse Park Segment which connects the Kentucky Horse Park to downtown Lexington. The third phase is the Georgetown Campus which connects the Georgetown College to downtown Lexington.

intent
To extend the Legacy Trail from the Kentucky Horse Park to Georgetown using design characteristics of the existing Legacy Trail, and develop a precedent for a regional greenway system for the Bluegrass.

To introduce the idea of connectivity and greenways to the community, a bike trail is being proposed. This feature has received considerable interest among stakeholders which indicates a desire for a more connected community and the benefits associated with its implementation.
EXTENDING THE LEGACY TRAIL

recommendations

In order to maintain a cohesive design vocabulary throughout this project, the design concepts developed by CBA, Inc., and Strand Associates for the existing Legacy Trail are continued in the proposed Legacy Trail extension. Limestone plays an important role in many aspects of the Bluegrass Region. It is a commonly used building material, and is featured in the dry laid fences seen all across the landscape. This cultural, physical, and economic connection with limestone was used as inspiration for the overall design concept for the Legacy Trail. The Horse Park Segment (figure 2) follows existing roadways along the perimeter of the Kentucky Horse Park property for safety and security reasons established by the administrators of the Kentucky Horse Park. This segment will continue from the North Legacy Trailhead to the I-75 tunnel near the Barton Farm. This segment will use matching signage and bicycle infrastructure to get through the Horse Park while remaining nonintrusive to Horse Park functions and aesthetics. The Georgetown Segment (figure 3) will be primarily off road and will use the same design standards as the existing Legacy Trail. This segment will terminate at the Georgetown College Athletics Campus at a recommended trailhead.

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Program elements planned for the Legacy Trail extension include (figure 4a-c):

- trailheads
- rest areas
- public art
- educational/interpretive signage
- limestone landscape elements
- pedestrian bridge
- rails with trails corridor
- native landscape plants

A variety of routes and options were provided to stakeholders for their input. Several constraints required innovative means of thinking to ensure a safe and secure route for this trail. Trailheads are placed at convenient locations to provide ease of use.
intend
Develop a greenway along the North Elkhorn Creek that increases connectivity, enhances surrounding ecology, and provides a recreational amenity for Scott County.

overview
According to Jack Ahern (1995) in an article in Landscape and Urban Planning, “greenways are networks of land containing linear elements that are planned, designed, and managed for multiple purposes.” They are not meant solely for recreation but also for the movement of materials, species, and nutrients. This component project involves the development of a prototypical greenway master plan that follows the North Elkhorn Creek in Scott County, Kentucky (Figure 1). Along with the plan is a set of trail standard recommendations aimed at improving the quality of the creek and adjacent landscape as well as the experience for potential trail users.

goals
Greenways often fall into one of three major, overlapping categories: ecological greenways, recreational greenways, and greenways of historical heritage and cultural values (Fabos, 1995). Using this framework, the design team developed three project goals to define the North Elkhorn Creek Greenway (Figure 2).

1. connectivity
2. ecological restoration
3. recreation through cultural and historical preservation

inventory + analysis
The North Elkhorn Creek has been dubbed a county “gem” as it meanders through a variety of urban and rural settings. The design team performed an inventory that looked at physical features as well as important cultural and historic amenities along the creek. Of particular importance were topography (Figure 3), geology, hydrology, and existing historic amenities. Of the issues that arose, the single most important was the declining riparian forest and wetland buffers along the entirety of the creek. Because riparian zones have the role of protecting the stream corridor through pollutant-filtering and erosion-prevention, they are vital to preserving the aquatic ecosystem. Extensive research found that a width of nearly 100 feet is effective at filtering nearly 85% of harmful pollutants from ground and surface water (Hellmund & Smith, 2006) and was therefore used as a standard recommendation along the greenway (Figure 4).

After an in-depth analysis, the design team made recommendations on greenway trail routing options. The team was also able to identify five potential trailhead nodes that could serve as important ingress and egress points for the greenway (Figure 5).

The North Elkhorn Creek has been described as a gem by stakeholders in this community. It is currently underutilized and brimming with potential. Developing this corridor, which stretches across the county, provides opportunities for connectivity, ecological restoration and recreation.
Having identified potential greenway trail routes and trailheads for the North Elkhorn Creek Greenway Master Plan, the design team developed a set of trail standards with the intention of creating a safe environment for trail users while preserving the environmental integrity of the creek and adjacent landscapes. Among the standards are guidelines for riparian zone phases (Figure 6), trail overlook areas (Figure 7), roadside trails (Figure 8), and road crossings (Figure 9).

**trailheads**

A trailhead rating system was adapted from the work of the Bucher, Willis, and Ratliff (BWR) Corporation on the Northland Trails Vision Plan. The system assigns trailheads to one of three levels based primarily on location. Each level has a recommended set of program elements. Level One trailheads are primarily urban and have a greater number of program elements while Level Three trailheads are primarily rural and have a minimal number of program elements (Figure 10). The design team made recommendations as to which level each of the five identified trailheads should be assigned. However, stakeholders are free to alter program elements as necessary.

**figure 4** This diagram illustrates the recommended widths and compositions of trails and various zones within the riparian buffer. Zone widths may vary but the entire riparian buffer should be no less than 100 feet wide.

**figure 5** This map shows the recommended greenway route and locations of trailheads.

**figure 6** This diagram represents four phases in riparian forest cover, with the recommended phase adhering to the 100-foot standard. Due to development constraints, the preferred phase is nearly unattainable.
Through the analysis process, the design team identified areas along the recommended North Elkhorn Creek Greenway that could be improved using a variety of design strategies. Aside from the developed trail standards, the team sought to maintain the broader project goals of connectivity, ecology, and recreation by adhering to a set of objectives aimed at environmental improvement and construction cost reduction:

- Practice riparian restoration and wetland remediation
- Retain and reuse existing infrastructure
- Highlight existing amenities
- Be as minimally invasive as possible
- Maintain the site’s historical integrity through the use of appropriate building materials
- Incorporate signage and amenities that encourage trail users to take pride in the greenway

One site identified as needing improvement is the acclaimed “fishing hole,” located off of Robinson Road. Figures 11 and 12 show the design team’s recommendations for ecological restoration along the creek and how the existing dam can be used as a base for a pier that provides cross-creek access to the greenway as well as a portage point for canoers and kayakers.

A second site identified as needing improvement is located off of Galloway Road at the historic Galloway Pike Iron Bridge. Figures 13 and 14 show how the site can be improved through the planting of native grasses along the stream bank and restoration of the existing bridge.

Riparian restoration, historical integrity, infrastructure reuse, and minimally invasive practices are all key points in the proposal for this greenway. By implementing overlooks and amenities at appropriate locations the greenway reaches out to the whole community instilling a sense of pride.
Several locations along the greenway were seen as needing immediate improvements. By implementing existing infrastructure at these locations the greenway proposal offers a more sustainable approach while limiting unnecessary intrusions.
Great Crossing Park is located less than 5 miles west of downtown Georgetown near the intersection of Frankfort Road and Stamping Ground Road. The original site was 4.8 acres but with a recent addition, the site is now nearly 132 total acres. Scott County stakeholders have made it apparent that the county is in need of updating the existing public parks and green spaces as well as creating more parks designated for a mixture of recreational use. Great Crossing Park is at the top of the list in the needs analysis conducted by the Scott County parks and recreation officials.

This component project utilizes the different program elements in the master plan to actively engage the community in ecological education (figure 2) and encourage fitness education. An example of a program element that could be used for nature education would be the development of a nature study area in the center of the park which would have ecology identification markers along the loop trail to help educate those who are experiencing the walking/running trail that moves throughout the site.

As in any project, an understanding of the existing landscape structure is a necessary starting point from which to determine the design directives (Groome, 1990). The design team used several methods for gathering inventory information related to the Great Crossing Park and analyzing it within the context of the project’s goals. The first technique involved a physical inventory of the site and surrounding area which required research and numerous site visits. This information was then critically evaluated to determine the design directives.

A lack of recreational infrastructure in the county invited an opportunity to develop a new park that can serve a wide range of interests. Passive and active recreation activities were included in the parks program elements.

intent
Create a Master Plan for Great Crossing Park that provides a variety of active and passive recreation opportunities while mitigating negative impacts on the surrounding area.

overview

goals
While there were multiple goals identified by the design team during this project’s progression, the overarching goal for Great Crossing Park was to generate a new master plan that would provide for a variety of recreational uses and integrate the park and viable green space into a larger green network (figure 1).
analyzed to identify the opportunities and constraints that the site may hold. The second method utilized a Geographic Information System (GIS) which is a computer software program used to obtain, integrate and analyze multiple forms of data, such as up-to-date aerial images and existing topography, as well as locations of features like current property boundaries, streams and rivers, 100 year floodplain, educational facilities, and existing structures both on and off the site. The GIS program allows for users to overlay the inventory data which can then be used to determine the location of areas that are more suitable or less suitable for particular design elements or land uses. A third form of inventory used throughout the progression of this project was the solicitation of input and information from stakeholders during the public meetings. This input was important because it provided insight to the desires and needs of the community that was not available from other sources.

process

Following the completion of the inventory, the analysis phase identified areas of opportunity, constraint, and suitability for particular uses. This allowed the design team to establish guidelines for the design process, which began with ideation using organizational bubble diagrams. Once a general organizational layout was determined, then specific program elements were identified to create conceptual designs. Multiple design concepts were created and presented to stakeholders during the second public meeting and their input was solicited and used for further concept development. From those conceptual designs and the input from stakeholders, the final park masterplan design began to take shape. Program elements, which were preferred by stakeholders from the earlier designs were integrated into the finalized master plan for Great Crossing Park.

This park is intended to connect to a much larger green network proposed for the county. This will enhance the importance of connectivity throughout the community while also following sustainable practices associated with riparian zones to restore and preserve water quality.