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PARKWAY

WARNER ROBINS GEORGIA

SCHOOL OF ENVIRONMENTAL DESIGN ■ PUBLIC SERVICE AND OUTREACH ■ LAND USE CLINIC
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Warner Robins

Richard B.

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Georgia

For many years local elected officials, the state legislative delegation, and community leaders worked diligently to get Richard Russell Parkway extended to Interstate 75 and provide the Warner Robins area with a second interchange to serve the City and Robins AFB. The project became a reality in the spring of 2002 when the Georgia Department of Transportation awarded a construction contract for the Parkway's extension. During the spring of 2003, with construction work progressing toward an October 31, 2004, completion date, the Mayor and City Council decided to explore alternative development concepts for the Parkway.

Over the previous two or three years the idea of making Russell Parkway the "front door" to Warner Robins had begun to emerge. A vision began developing of having the corridor be more aesthetically pleasing than a typical arterial that connects cities to outlying interstate highways. With these thoughts at the forefront, the Mayor appointed a committee to begin the process of examining development alternatives.

The first activity was holding a meeting of the property owners or their representatives and other stakeholders. This meeting was held in May of 2003 and the city's concept was generally well received by attendees. The second step involved asking the Middle Georgia Regional Development Center (MGRDC) for assistance. The staff and committee met with MGRDC representatives and secured their involvement. A short time later, the MGRDC suggested asking the University of Georgia's Public Service and Outreach Office of the School of Environmental and Design to assist with our visioning process and the development of standards for implementing the project. In early December of 2003, a meeting was called and the staff of the Public Service and Outreach Office got the opportunity to meet project stakeholders, the Mayor, Council Members, and staff to discuss the process to be followed and to hear the thoughts and opinions of the stakeholders. From that meeting the process began in earnest and continued through its conclusion.

Jesse Fournain
City Development Director
City of Warner Robins



Georgia

Russell Parkway

In the Spring of 2004 the University of Georgia was invited to work with the City of Warner Robins to define an entry sequence for their city. This opportunity arose from the proposed extension of the Russell B. Parkway, stretching from the air force base to I-75. Landscape Architecture Professor Judith Wasserman assigned her fourth year urban design students the task of examining the situation, and developing proposed alternatives for a new vision of development along the new Parkway. In order to do this, the students engaged in a design process that first involved extensive site analysis, community interpretation, and precedent study. This material was assembled for the ensuing charrette, which took place February 7 and 8th. During the charrette, the students explored four possible scenarios: Conservation/Preservation, Agricultural Landscape Preservation, Nodal Development Pattern, and Smart Growth. In addition to the overall master plan, students also identified eight specific land uses to consider along the route. Charrette participants were looking for an identifiable theme. This led the students to consider the uniqueness of Warner Robins, and ways to capitalize on that to encourage tourism and give a sense of pride. After



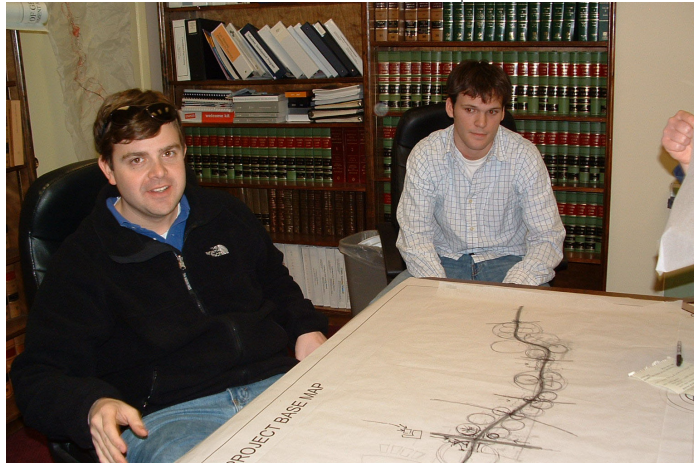
completing the charrette, students returned to Athens to synthesize their work. Some students further developed the project, adding greater detail to the specific land use areas along the Russell B. Parkway. This was presented to city officials and interested citizens, and feedback was solicited. This final report is a result of this process. The goal of this document is to highlight a number of different scenarios and potential directions of growth and marketing. Each of the ideas can be adjusted and modified according to the communities needs and budget. A section of strategies for implementations has been added to assist the City of Warner Robins in prioritizing their needs and accomplishing their goals. It is hoped that the vision of the community becomes realized to create an entry corridor which is beautiful, memorable, and functional.

WHAT IS A CHARRETTE?

A charrette is an intensive design process accomplished with designers and community members in order to quickly derive alternatives for community growth and development.

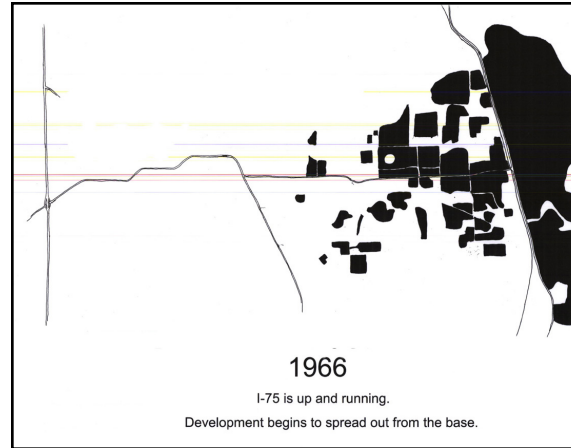
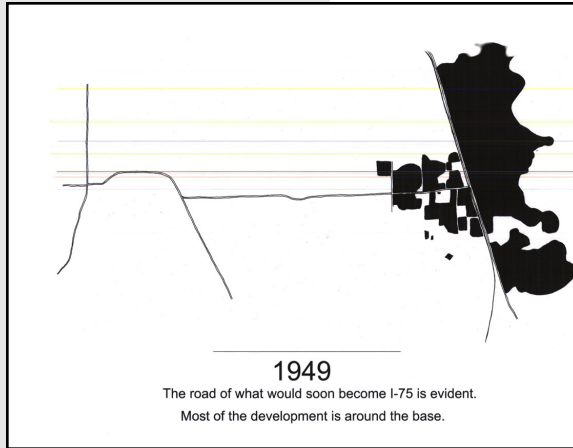
Warner Robins

Richard B.



Georgia

Russell Parkway



HISTORY

In 1941 the United States Air Force established a military depot in what was then known as the hamlet of Wellston. The Air Force was attracted to the area because of its geographic assets.

3,100 acres of land were sold to the United States government for one dollar. The base was built for 15 million dollars in 1941.

The city was named in honor of Brigadier General Augustine Warner Robins, the father of modern Air Force logistics. The city Warner Robins first chartered by the the State of Georgia in 1943.

The base was established during World War II. In 1945, at the termination of the war, the operations at the base were minimized. As a result, the city went into a recession. The outbreak of the Korean conflict in 1950 revitalized the town, firmly establishing the Robins Air Force base and its associated urban counterpart - the City of Warner Robins.

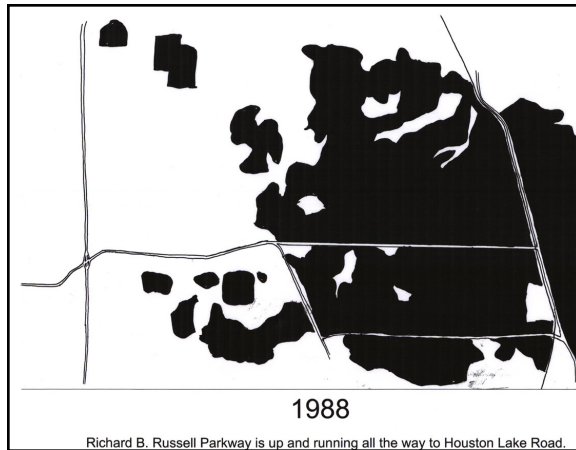
The economy of Warner Robins and the surrounding regions are determined by the base. Billions of dollars are infused into Georgia's economy from the base. It is the State's largest employer.

A multitude of businesses are supported by the base, and in turn provide services to the military personnel stationed in Warner Robins.

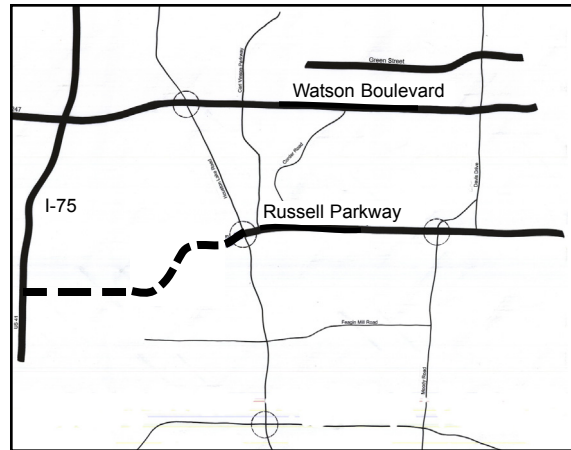
Warner Robins is a solid community with military roots. The residents come from all over the United States, and most have traveled extensively abroad. Some have spouses from other countries. This international flavor has enriched community life in the city. For example, the international offering of cuisines is notable, especially for a town this size. There is a great deal of potential for the city to develop a unique identity based on this varied cultural milieu. It is labeled Warner Robins "Central Georgia's International City."

Warner Robins

Richard B.



The population is rapidly growing. The 2000 census accounted for 48,804 people in Warner Robins. The growth rate between 1980 and 1999 was 9.9% and between 1990 and 2000 it was 11.3%. Houston County as a whole grew tremendously within the last 10 years - growing from 89,208 in 1990 to 110,765 in the year 2000. This is a rise of 24.2%.



LOCATION

Warner Robins is centrally located in Georgia. It is 200 miles from the Atlantic Ocean and the Gulf of Mexico. It is approximately 15 miles from Macon, Georgia, and there is a sizable population who commute into Macon for work, or conversely, hold jobs on the Air Force base and live in Macon.

Warner Robins holds the potential of being a convenient tourist destination as people are traveling North from Western Florida. With careful marketing, the town has the potential to profit from this choice locale.

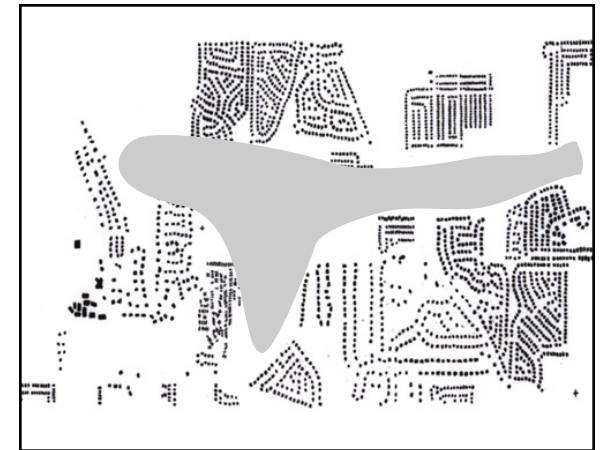


FIGURE GROUND

The figure-ground map shows spatial patterns of existing or proposed structures. This plan reveals a very finely textured urban fabric, most of which is in the typical suburban pattern of curving roads and cul de sacs. The center reveals an interesting phenomenon - it contains a large area of undefined space in its center. This is along the corridor which will be occupied by the Russell Parkway extension.

This pattern clearly suggests a need for a certain level of density along this corridor. This has the potential to create a "heart" in the center of Warner Robins.

INITIAL INTERVIEWS

After accomplishing the site analysis, the students then participated in a two day charrette process, from February 7, 2004 to February 8, 2004. The first step in that process was meeting with community leaders, property owners, and other interested citizens to garnish their input. They spent about three hours meeting in small focus groups with these individuals, and took extensive notes.

THEMING

Some visions were reoccurring. One, in particular, seemed to be of critical importance - the search for a defining theme so that this new entrance would create an identity for the city. Theming is currently a very popular approach to tourism. Through careful planning, this tool can allow tourists an identifiable unity to the city. Branding is a term associated with the theming. Used in marketing, a brand name creates a consistent logo to identify the product. This is now being applied to tourism, with the theory that a catchy "brand" can entice visitors. If carefully crafted, this can both reflect and create a strong identity and sense of place. This "brand" can be used for all tourism products, such as brochures, web-sites, and

road signs.

The students sought different possibilities for a special identity and brand for Warner Robins. They included flight, agriculture, urbanity and conservation. These will be shown in the next section, Designs: Visioning the Future for the Russell B. Parkway.

BEAUTIFICATION

Everyone agreed that they wanted the Russell B. Parkway to be a beautiful road, in contrast to the current city entry of Watson Boulevard. At all the meetings there was a strong presence of members of the organization "Keep Warner Robins Beautiful", and they were very vocal about their concerns. Many participants had ideas of both what they wanted to avoid (mainly based on their current situation), and visions for what they wanted to see that was better. Desire for more vegetation was very prevalent, both in the form of conservation areas and cultivated plants. Other ideas included a sense of unity in the design and more rigid architectural standards. The concept of creating a "soul" for Warner Robins was introduced. Elements to avoid include billboards, strip development and overhead wires. More things to avoid can be found in the chart to the right.

WELCOMING

Participants in the charrette expressed a desire for this parkway to serve as a welcome mat to the city. They wanted it to be inviting, new, and filled with surprises. Residents wanted to avoid anything that would degrade this image. Of grave concern were the presence of adult entertainment in the city. In particular, the extensive advertising for these establishments stretch for miles on I-75. The image they evoke is one that many find offensive and would seek to avoid. To counter this marketing, the City itself will need to establish its new image and market it along I-75 well before the Russell Parkway entrance. This will entice travelers well in advance of the turn off so they can make the decision to explore Warner Robins.

TRAFFIC MODIFICATION

Many expressed an interest in changing the experience of moving through Warner Robins. Participants wanted to avoid traffic congestion, and interference with a pleasurable trip. Suggestions included reducing traffic lights, reducing pavement cover and fewer curb cuts.

VISION FOR THE PARKWAY

THEME: Uniformity

Flight and Air Force
Agricultural
Conservation
Urban Nodes

BEAUTIFICATION

Include:

Maintained Plantings
Natural Areas
Grandeur and Classicism
"Soul"

Avoid:

Bill Boards
Wires and Utility Poles
Strip Development Centers
Mobile Homes
Huge Signs
Massive Clear-cutting

WELCOMING

New
Sense of Surprise
Inviting
Different
Prevent Unwelcome Activities

TRAFFIC CONTROL

Minimum Traffic Lights
Minimal Paving Areas
Minimal Congestion

CHARRETTE ANALYSIS

It is very difficult to imagine a vision for a new future design. Typically residents will react either for or against something that already exists in their community. In the case of Warner Robins, participants reacted strongly against two elements - the existing conditions along Watson Boulevard and the negative portrayal of the city via billboards advertising adult entertainment.

Watson Boulevard

In order to create a new entry sequence for the traveler, it is useful to look at what does not work, in order to avoid it in the future. Watson Boulevard offers a rich example of what the city should avoid in the future. And in fact, this was cited often as an undesirable place.

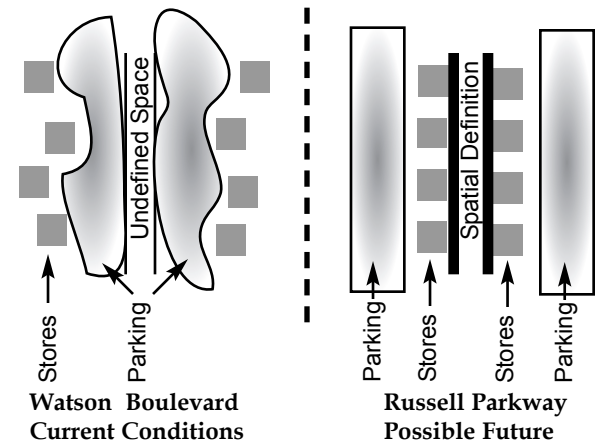
Watson Boulevard portrays the most extreme form of strip development malls. In some case the stores are two layers deep. This development pattern results from minimal development codes, with excessive set-back requirements. As a result of a number of factors, this development pattern typically negatively impacts the experience of driving, cycling or walking. This is due to a number of factors.

Anonymous Architecture

With the exception of a few notable cases, the buildings along Watson Boulevard are bland and often standard fast food buildings. This detracts from any sense of uniqueness or specialness in Warner Robins.

Parking Lots

The parking lots overwhelm the experience of driving down the Boulevard. The parking lots are in front of the buildings, and so prevent any sense of enclosure and spatial definition.

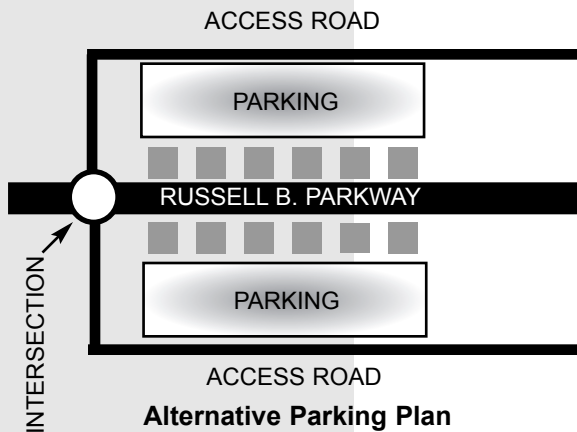


Edge of Road Conditions

CHARRETTE ANALYSIS (continued)

Parking Lots (continued)

Excessive parking fronting the major thoroughfare also has the effect of hindering easy traffic flow. This results from multiple curbcuts leading onto the major artery from the parking lot. If parking is shifted to the rear of the buildings, then access to Russell B. Parkway can be minimized, encouraging smoother traffic flow.



Road frontage can be designed to encourage pedestrian activity. Wide, tree lined sidewalks with ample sitting areas will create an amenity for the community. Delightful place-making elements can be included, such as fountains and public art.

Entry Sequence

Most participants at the charrette considered the building of Russell B. Parkway as an opportunity to create a new entry and identity for the city.

Of grave concern was the billboards advertising adult entertainment. Many felt that this clouded the image of the city that they were trying to create. While the billboards on I-75 are outside the scope of the development of a new parkway, they do have a crucial impact on the overall impression of the town. Many participants were adamant about this.

These particular billboards were of concern, however, the idea of billboards in general were considered counter to the vision for the parkway. There is a desire to minimize and/or eliminate them along the route.

Well designed signage fitting in with the theme and image of the city will be key in countering any negative images promulgated by the existing advertisements. Consultation with a graphic design firm is an important step in ensuring that clear, readable, and imageable signage is developed. This can also assist the visitor in

wayfinding upon arrival to the city. "New", "A sense of surprise", "Inviting", and "Different" were all terms used to describe the desired entry. Creating a theme will assist in defining this. Also, a design competition is one way to city can get multiple ideas, many of them new and exciting.

Greenery

The participants at the charrette agreed that they wanted to see more greenery in their city. "Keep Warner Robins Beautiful" were well represented. They were interested in increasing manicured vegetation - that is, vegetation which is maintained, such as flower beds and shrubbery. Others also wanted to see more natural areas, such as woods and meadows, along the route. Currently there is a generous amount of forest cover. There was an interest in selective cutting to maintain a natural feel. Both interests can easily be accommodated in the new parkway. As you will see, one of the student groups proposed nodes of development and nodes of nature. In the developed areas higher maintenance plantings can be used.

Theme

Warner Robins is a town in search of a marketable identity. This was discussed multiple times throughout the charrette. However, this is sometimes difficult for a community to articulate, as they are so close to their own experiences in a town.

During the charrette, the students formed four groups with four different approaches. These are as follows:

Vision One: Agriculture

Vision Two: Conservation and Scenic

Vision Three: Poly-Nucleated

Vision Four: Smart Growth

After the charrette was complete, another group elected to continue the project. They incorporated ideas from other groups, but mainly followed the smart growth model. They also carried out the theme of aviation, relating to the Air Force base and the aviation museum.

These will be discussed at length in the next section, Visions.



Forestry/Agriculture Vision

Initial Statement: *Development that is clustered within and in-between more natural environments and agricultural production.*

Approach: *Dense development with imposed architectural standards set inside preserved natural landscape with a conscious effort to improve visual character while providing economical and biological production.*

This group recognized the rich agricultural production occurring in this region. Much of the land that the new parkway is spanning is currently in forest or agricultural production. They see this the preservation of this landscape as one approach to creating a defining and special character to the parkway. The plan on the right delineates the various zones where different uses occur. These are as follows:

1. The Welcome Center

The welcome center would advertise the agricultural theme through a memorable building: the welcome center in the shape of a giant peach. This can be seen from the highway and serves as an enticement to visitors to further explore this community.

The peach building sits in a peach orchard. As the visitor approaches, they get the feeling of being a farmer surveying their crops. A hotel could be in rear, with fast food and gas stations. The lot will be backed by a pecan orchard, with a pine standblocking views and noise pollution.

2. Large Scale Development

These are large commercial buildings set behind a stand of pines. They would be built around central parking area to reduce paving. Signage for this development would be short. The style would be determined by design guidelines.

3. Pine Buffer

A pine buffer would span the length of the parkway, creating a unified look to the entire stretch of road. It would also reduce the visual impact of large scale development. For the motorist the trees can reduce glare and eye strain.

4. Small Scale Development

This development is high density, with a small town character. It would contain stores that would service the neighborhood and tourists alike. The development would not be set back from the road. Parking will be accommodated in the rear.

5. Church Lands

This is property owned by the church. They have developed extensive plans for development and recreation consistent with this scheme.

6. Tree Crops

These areas would be primarily planted with pecan trees, as that is characteristic of this region of Georgia. Areas that are in peach orchards would maintain that until the trees died, then they would be replanted with pecans.

7. Community Park

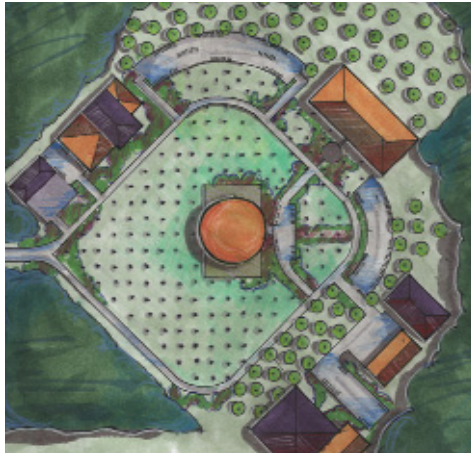
Park with bicycle paths, picnic areas, ponds and pecan trees. Wetland areas allows for ephemeral ponds (when it rains), creating rain gardens. Tall native grasses would be allowed to grow in the wetter areas. A bike path runs through the park under the pecan trees and through the open greenway.

8. School

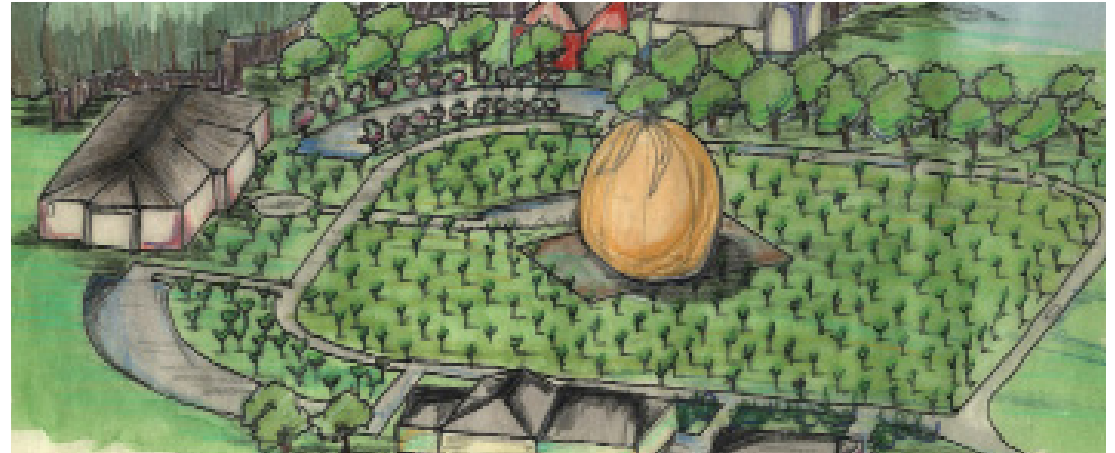
Being developed by Warner Robins.

9. Natural Area

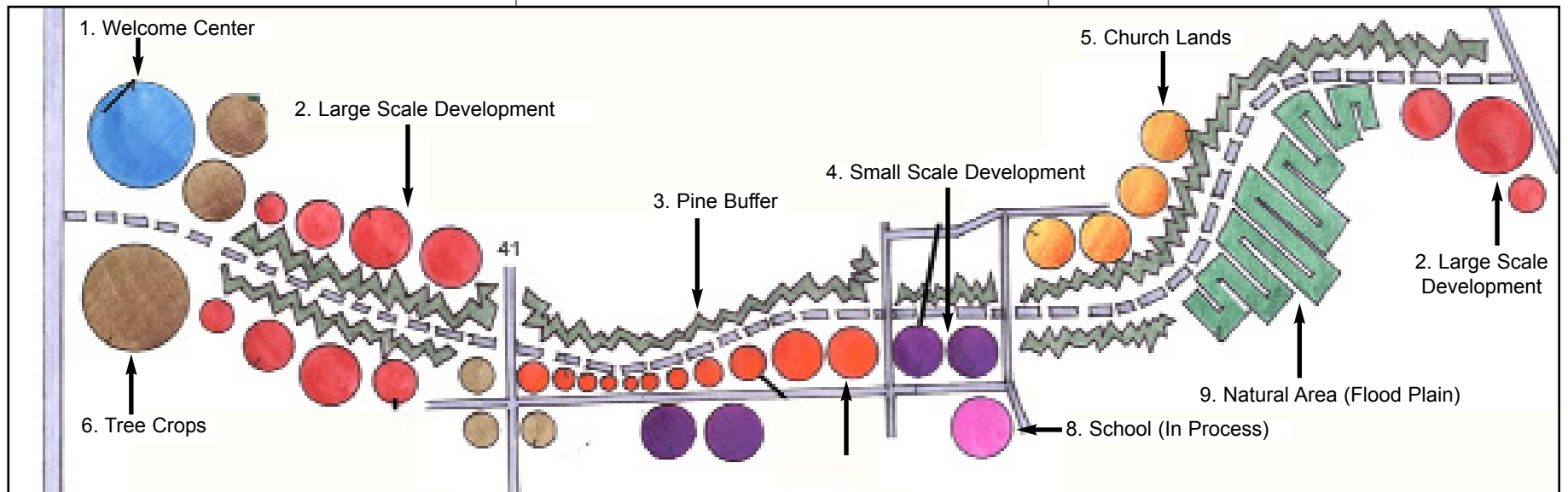
An existing flood plane, to include pines, wetlands and natural areas.



Welcome Center : Plan View



Welcome Center : Perspective



Georgia

Russell Parkway

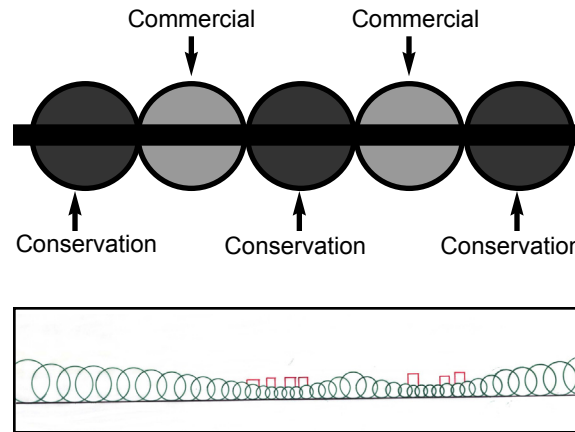
Conservation

Initial Statement: *Economically balanced, with passive recreation and preservation lands. Maintain scenic vistas, and create connectivity along a greenway.*

Approach: *Maintain "green" buffer. The buffer would be an organic form bordering the new Russell B. Parkway. Tall vegetation will be planted in the natural areas, and smaller vegetation will lead to the more developed areas. Extensive vegetated buffers will be planted between the residential areas and the road. Conservation subdivisions will be planned in this corridor.*

The conservation group was interested in balancing the needs for economic growth with the very real desire for maintaining eco-system health in the region. Their plan showed how these two seemingly contradictory desires can be resolved. In a sense, their proposal was most reflective of the original intent of parkway - a park with a road through it.

Not only have the established a green corridor along the entire length of the Parkway, but they devised a system to highlight each of the uses.



DEVELOPMENT ZONES

Alternating zones is represented in the diagram. The vegetation "swoops" down, revealing a commercial center. The conservation areas thus offer a relaxing experience for the motorist, and prevent driving hazards, such as excessive glare. The natural vegetation serve as a lovely entry sequence into the city, showing it off at its best.

The zones are as follows:

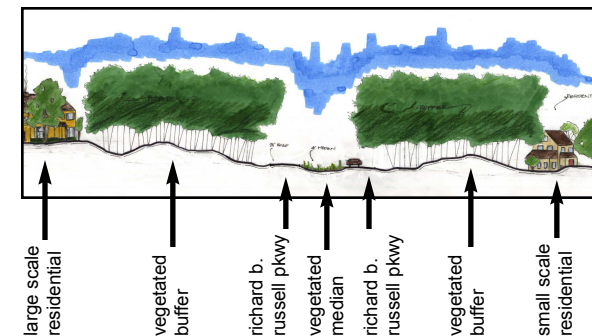
1. Commercial

Vegetation scaled back to view the commercial establishment. Built within a strict development envelope. Allow taller buildings and restrict horizontal development. Commercial development pedestrian

friendly with sustainable details for parking lot construction.

2. Residential

This group spent a lot of time focusing on the idea of incorporating the conservation subdivision as a major form of residential growth. Features of the conservation subdivision include major vegetated buffers from the road to the houses (see section below), smaller lot sizes and community green spaces. For more detailed information on the conservation subdivision see page X.

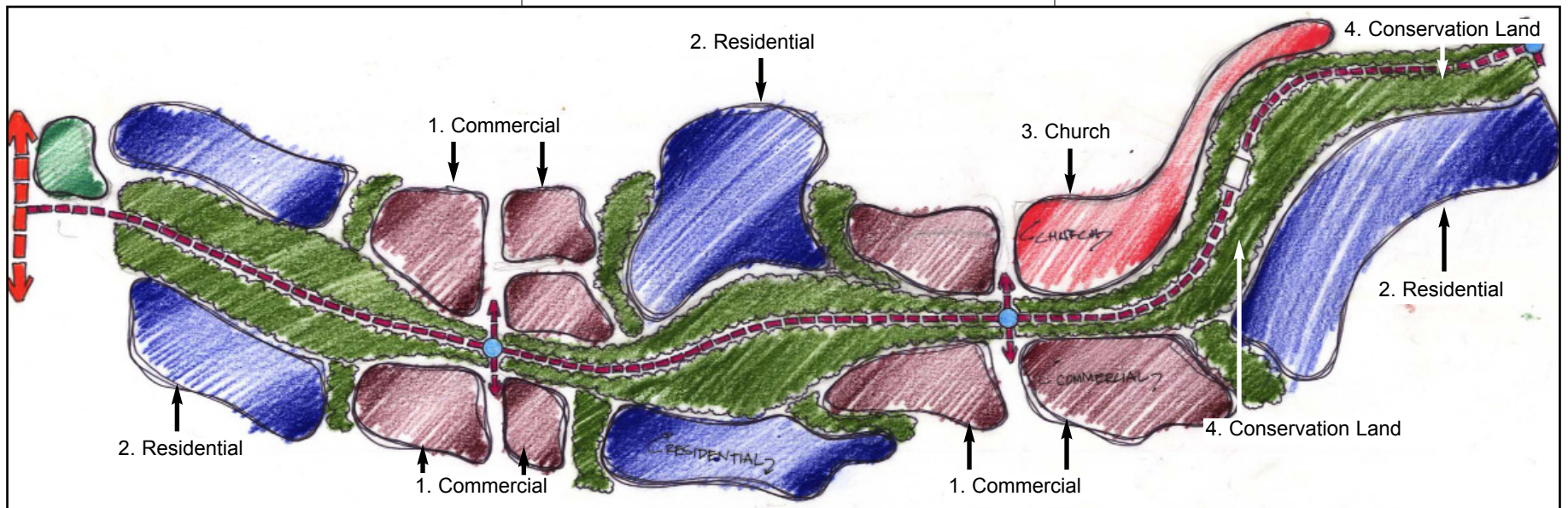


3. Church

The church plans are consistent with the conservation approach. They include ample green space for recreational use.



Conservation Subdivision



Georgia

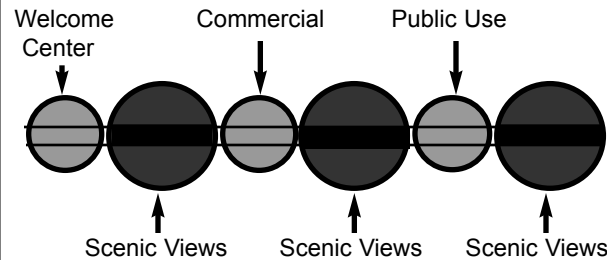
Russell Parkway

Multi-Nodal

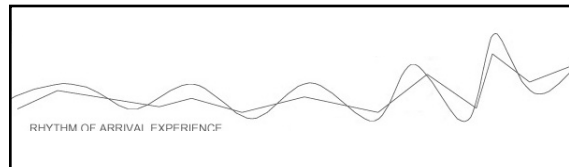
Initial Statement: Nodal development based on a progression of developed urban and vegetated spaces. The pattern is as follows: Developed: I-75, Nature, Developed: Retail/Residential Mix, Nature, Developed: Enter city.

Approach: Concentrate nodes of development at appropriate locations, such as intersections. Maintain a generous green buffer everywhere else along the corridor.

Vision 3 shares many common ideas with the conservation approach. Like the conservation model, the nodal concept highlights the possibility of alternating intensive development with natural landscapes. Functionally, this would serve the same purpose as the conservation model, as it would allow the city to maintain a natural scenic corridor along the Russell B. Parkway. It departs from the conservation ideas in one significant way: the conservation approach included an intense landscape buffer along the entire route, whereas the nodal model alternates the natural system with intensive development - creating an urban ambiance.

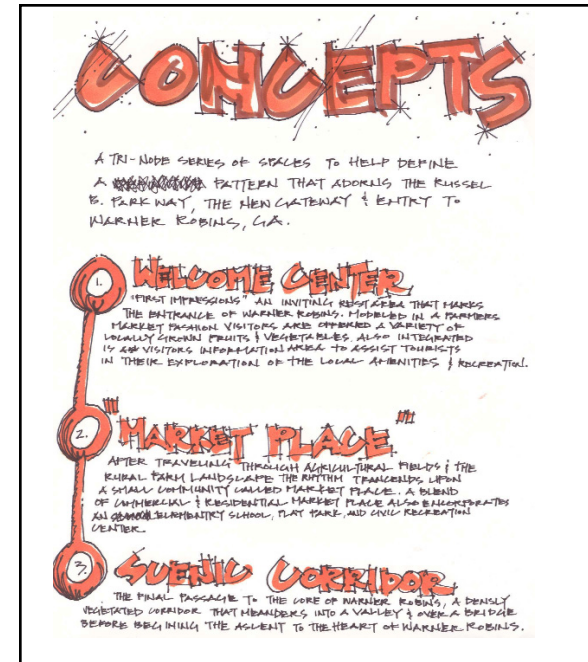


This diagram highlights the major pattern of the nodal scheme. It departs from the conservation approach in that it recommends clear definition between the built environment and the green scenic landscape. A further discussion on the differences between conservation and scenic preservation can be found on page X.



Another feature of this plan is the rhythm it sets up as one moves from I-75 into town along the Richard B. Russell Parkway. As one progresses east, the scale of the built form grows, representing the move from the rural to the urban. This image can be seen in the above diagram.

The major area included in the nodal concept are as follows:



Conceptual Statement

1. Welcome Center

An inviting first impression that is open and airy (see drawing on right). It also contains a farmers market selling local produce.

2. Market Place

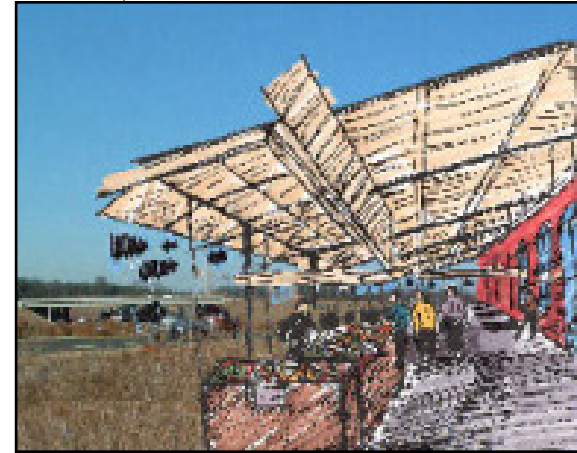
A mixed use area that contains markets, houses and schools.

3. Scenic Corridor

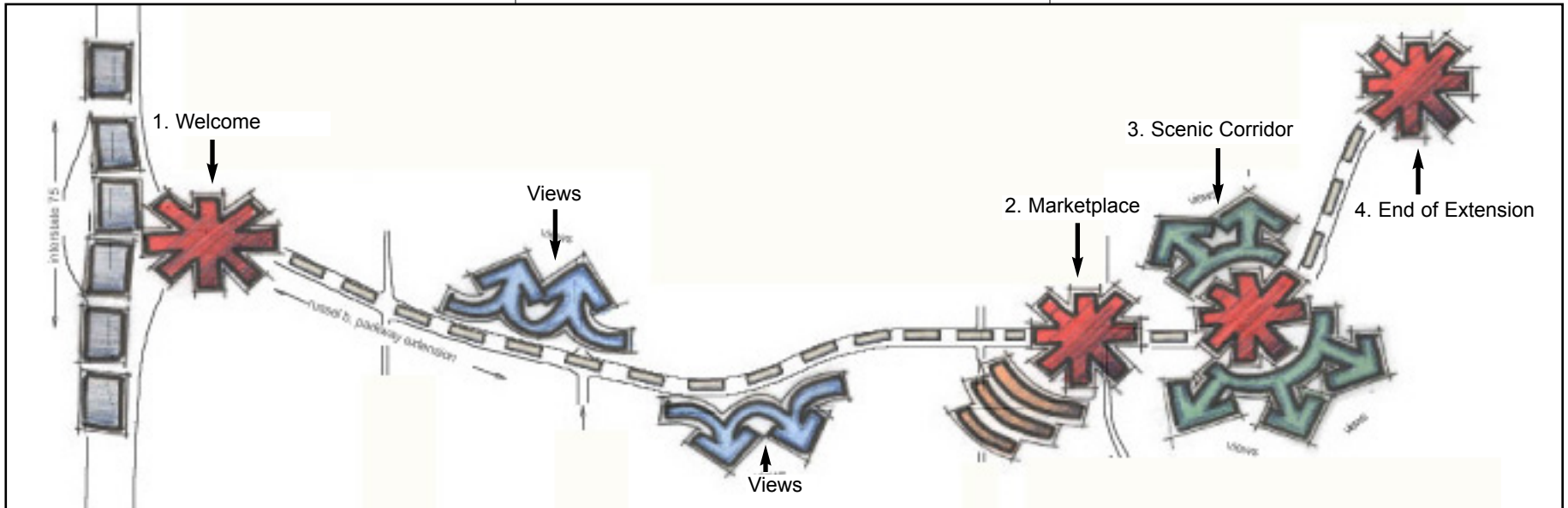
Heavily vegetated, giving a delightful entry into Warner Robins.



Marketplace



Welcome Center



Russell Parkway

Georgia

Smart Growth

Initial Statement: The Smart Growth concept is an attempt to direct the inevitable growth along Russell Parkway with environmentally and socially conscious principles while considering the interests of all property owners on Russell Parkway. By providing opportunities for commerce, education, and social interaction, Russell Parkway can become a thriving center of public life in Warner Robins.

Approach: Use a mixed-use development approach to create a sequence of viable urban centers. Permit landowners to intensively develop a portion of their land in exchange for leaving some of their land holdings either natural or rural in character.

The students in this group were intent on creating a scheme which was economically viable. It is the most intensively developed of the four schemes, with numerous centers of interest along the route.

THEME

In addition to the land use decisions, the students also developed an imageable theme to tie the parkway together. This can function to create a memorable and gives the town a sense of pride and identity.

The image was drawn directly from Warner Robins history and present day focus - the air force. All details incorporate a feeling of motion, and are constructed out of metallic reminiscent of aircraft metal. The forms include graceful graceful arcs. All lamp posts, benches, and site fixtures reflect this image. The details of the gateway pedestrian bridge and the nature center signage reveal the envisioned image.

THE SCHEME

The scheme shown at right is intensively developed, with significant "green" relief. This includes landscape buffers, and greenway trail and nature center.

1. Welcome Center

Welcome center with information on the city, and traditional interchange amenities like service stations, fast food restaurants and hotels.

2. Mixed Use

Development type as described on page X.

3. Landscape Buffer

Natural landscape buffer.

4. Pedestrian Bridge and Gateway

Visual entry to the city reflecting the image of Warner Robins. See right for image.

5. Greenway

Nature trail system (refer to page X).

6. Farmer's Market

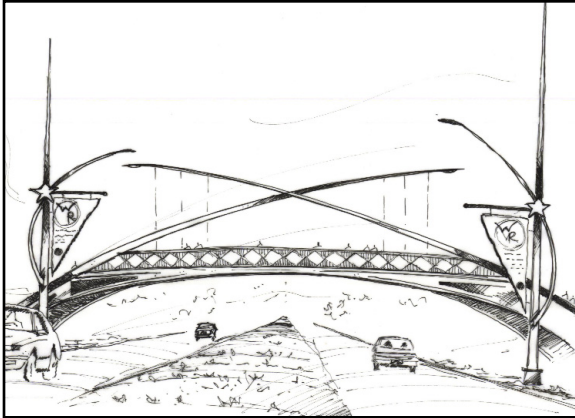
They also have provided for a farmer's market, which can serve as a weekend festival ground for impromptu folk music. A farmer's market is an excellent land-use for a multitude of reasons. It can help promote local farmer's and craftspeople by giving them a place to sell their goods, it is a wonderful gathering place for the community, and it can foster tourism. Images and information can be found on pages X and X.

7. Airforce Memorial

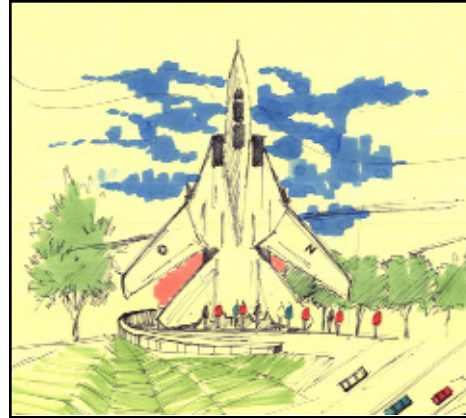
In honor of the air force troops who were lost in action, an Air Force memorial is proposed. The design portrayed here is of a lone jet flying in the (XXX) pattern - straight up in the sky. This is an evocative and sensitive design. However, it is common for memorials to be developed out of a competition process. This not only serves the town well by presenting numerous ideas for consideration, but it also helps to widen interest in the town through advertising the competition and its winners.

8. Nature Center

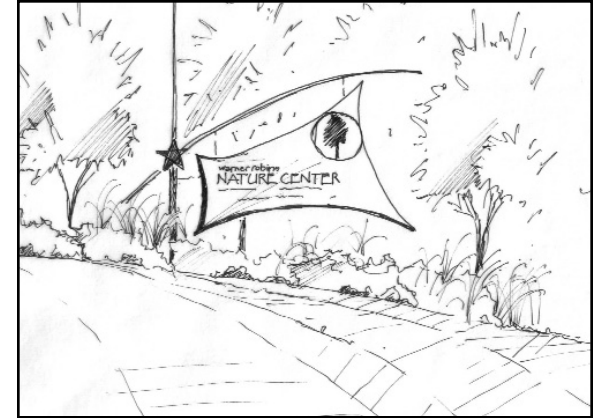
This nature center is furnished with a stage for nature demonstrations.



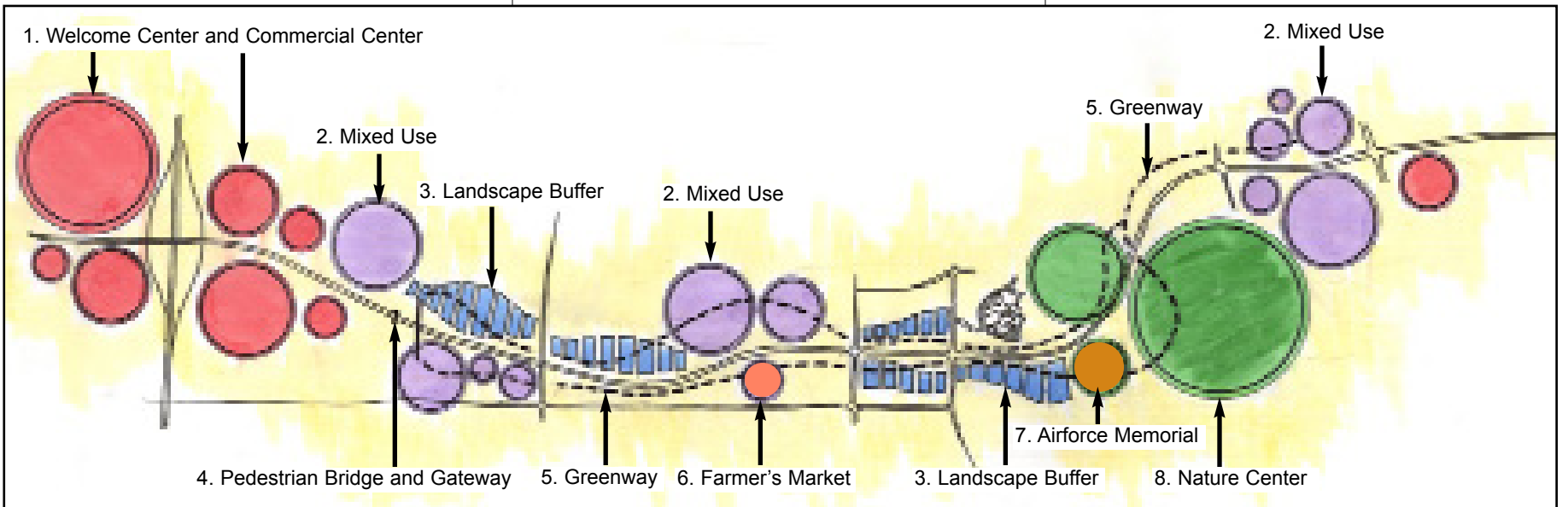
Pedestrian Bridge and Gateway



Airforce Memorial



Nature Center Signage



Georgia

Russell Parkway

Some of the students expanded the project and developed specific ideas and structures for the route. The first one is the site plan for the air force memorial (the elevation is found on the previous page). The building footprint carries out the aerodynamic theme in its streamlined form.

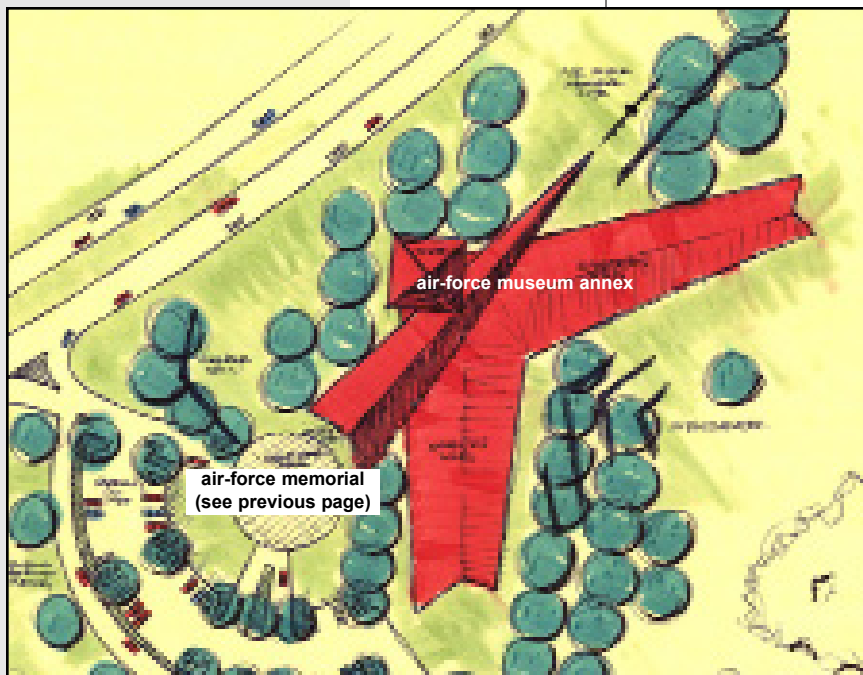
The second plan is of the farmer's market. This was based on Ithaca's Farmer's Market in Upstate New York. Images of



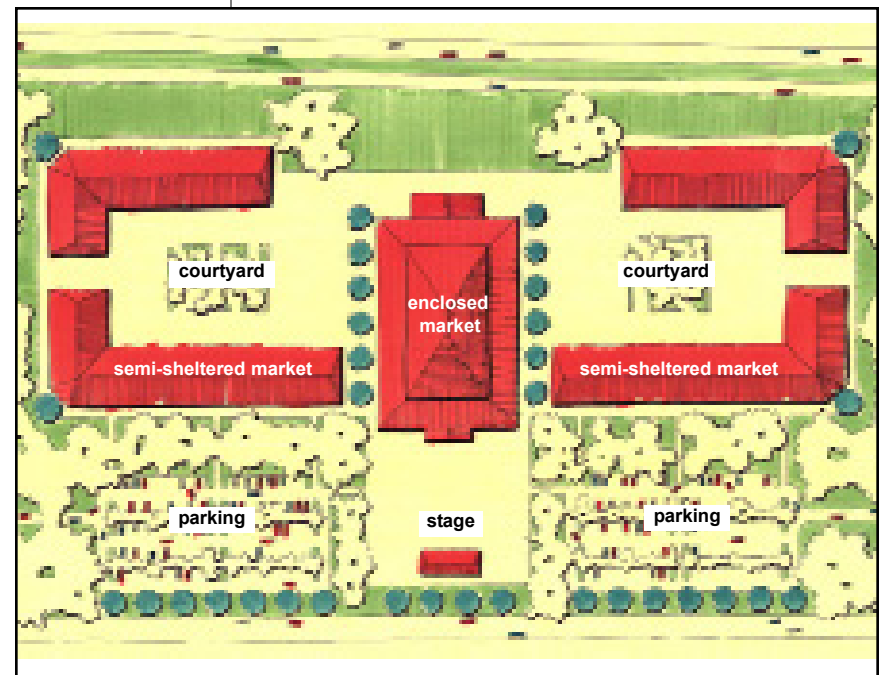
Fiddler's at the Farmer's Market: Ithaca , New York



Ithaca Farmer's Market: Ithaca, New York



Airforce Memorial

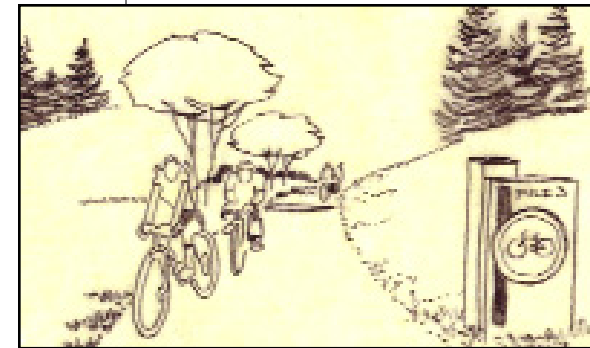


Farmer's Market

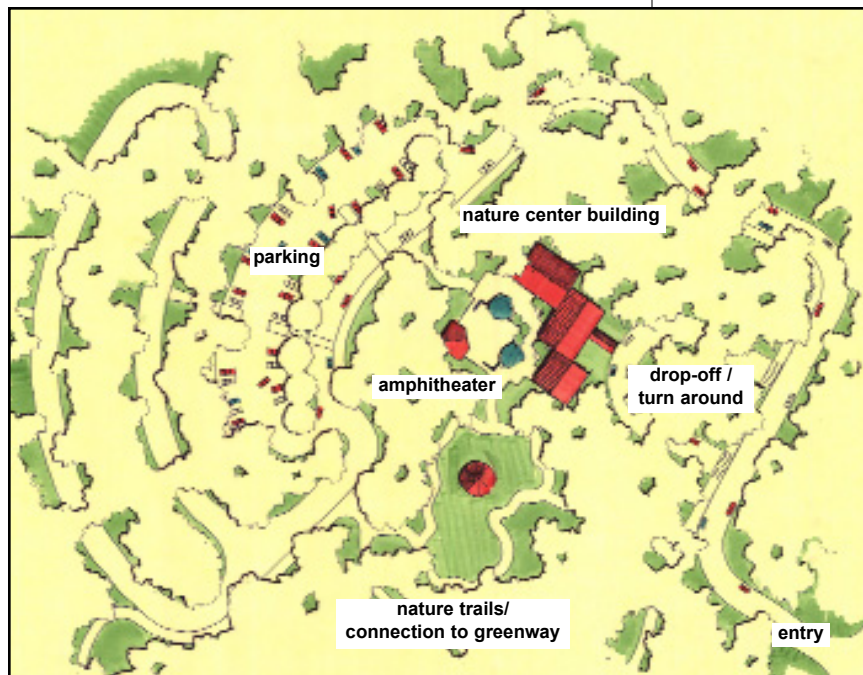
the market can be seen on your left. Information on the farmer's market can be accessed at www.ithacamarket.com/. Here you will find contact people to help you set up your own farmer's market. The plan also contains an outdoor theater area.

The nature center is to be found below. It features an amphitheater and connections to the greenway.

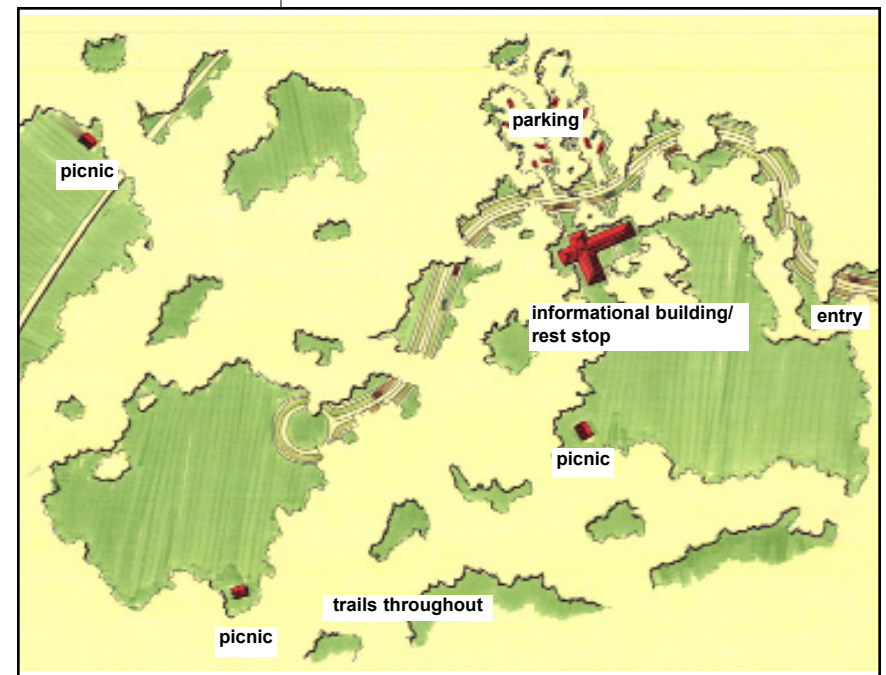
The greenway entrance site plan contains small service building (with cold drinks and bathrooms), picnic shelters and trails.



Greenway



Nature Center



Greenway Entrance

Georgia

Russell Parkway

Descriptions/References - 6 -

CONSERVATION SUBDIVISIONS

The conservation is interested in the idea of the *conservation subdivision*. This is a form of development, guided by zoning regulations, which creates more environmentally sound communities. Randall G. Arendt is one of the best authors to read on this subject. Two very useful books are Rural by Design: Maintaining Small Town Character, and Conservation Design for Subdivisions: A Practical Guide to Creating Open Space Networks (published by Island Press).

Conservation Subdivision Guidelines

Develop 1/2 total acreage as a maximum, the rest remain as conservation land or park
Do not develop on wetlands, floodplains or steep slopes
Houses face and share open space
Maintain series of forested areas, meadows and ponds
Develop a trail system
Design in places for alternative transport (such as bicycles)
Lots are 1/2 - 1/4 of an acre

CONSERVATION vs. SCENIC LAND

There is often confusion about the distinction between conservation and scenic land preservation. It is subtle, yet important to know when making land use decisions.

Conserving land for preservation purposes implies some inherent ecological value is being preserved. This could be for the purpose of a wildlife corridor, endangered species preservation, or watershed protection. These may or may not have a direct scenic benefit for humans (for example swamplands are not often considered beautiful or scenic, however they contain one of the most productive biotic communities.) These landscapes have inherent worth, and can have side benefits, such as increased interest for bird watchers.

Scenic lands are judged on different criteria. Determining scenic value is a somewhat complex endeavor. One's appreciation of the landscape is, to a large part, determined by the landscapes they are accustomed to. Certain values do seem universal, such as a subtle mix between complexity and legibility. But within that criteria there is a wide spectrum. Some see the rural landscape as being beautiful, and the proliferation of painters portraying the rural landscape attests to this aesthetic. Others prefer the wild and rugged landscape, with specific focal points, such as a distinct old tree or rock outcropping. Rachael and Stephen Kaplan are environmental psychologist who have studied landscape preferences. Their work could

be useful in making decisions about preservation of scenic corridors (see box below).

References

Kaplan, Rachel and Stephen. 1989. *The Experience of Nature: A Psychological Perspective*. New York: Cambridge University Press.

Kaplan, Rachel and Stephen. 1978. *Humanscapes: Environment for People*. N. Scituate, Massachusetts: Duxbury Press.

MIXED USE DEVELOPMENT

A major feature of this plan is the ideas of mixed use development. This idea is not a new one, it is a copy of the older urban centers, where apartment dwellers lived above stores, and there is round the clock activity in the area to insure safer streets.

These ideas have been resurrected and popularized by the New Urbanist, led by individuals such as Andreas Duany, Elizabeth Plater-Zyberk and Peter Calthorpe, to name a few. There ideas are represented by the organization *Congress for the New Urbanism*. This can be accessed on the following Web site: www.cnu.org/. Many of them have written books and articles, which could be of interest, and they have accomplished a number of successful projects around the world.

Warner Robins

Richard B.

MIXED USE DEVELOPMENT

(continued)

The ideas they espouse have inherent ecological implications. An important aspect of their message is to make cities more livable. One way to do this is to lessen the reliance on the automobile. This forces cities to condense and become more walkable.

For more information refer to the following sources. There is also a great deal written in contemporary urban design, architecture and landscape architecture journals on this topic.

References

Calthorpe, Peter. 1993. *The Next American Metropolis: Ecology, Community and the American Dream*. New York: Princeton University Press.

Calthorpe, Peter. 1993. *The Next American Metropolis: Ecology, Community and the American Dream*. New York: Princeton University Press.

Calthorpe, Peter, William Fulton, forward by Robert Fishman. *The Regional City: Planning for the End of Sprawl*. Washington DC: Island Press.

References

(continued)

Duany, Andres, Elizabeth Plater-Zyberk and Jeff Speck. 2000. *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream*. New York: North Point Press.

Duany, Andres and Elizabeth Plater-Zyberk; edited by Alex Krieger with William Lennertz; essays by Alex Krieger. 1991. *Towns and Townmaking Principles*. Cambridge Mass: Harvard University Graduate School of Design; New York: Rizzoli.

Van der Ryn, Sim and Peter Calthorpe. 1986. *Sustainable Communities; New Design Synthesis for Cities, Suburbs and Towns*. SandFrancisco: Sierra Club Books.

Warren, Roxanne. 1997. *The Urban Oasis: Guideways and Greenways in the Human Environment*. New York: McGraw Hill.

GREENWAYS

Greenways were promoted by Frederick Law Olmsted. Boston's Elmerald Necklace is an excellent example. It works there and it can work in your town as well.

The basic concept is this: the greenspaces are connected along a pedestrian trail so one can easily experience nature no matter where one is. It promotes non-polluting

forms of transportation and hold other ecological benefits such as watershed protection and wildlife corridor maintenance.

Greenspaces can vary along the corridor, at times being more urban, and at other times being left natural.

There is a great many references available. See below for a choice few:

References

Flink, Charles A, LoringLaB. Schwarz ed., Charles A. Flink and Robert M. Searns contributors. 1993. *Greenways: A Guide to Planning, Design, and Development*. Washington, DC: Island Press.

Jongman, Rob, Gloria Pungetti, John Wiens, Lenore Fahrig, Bruce Milne, Peter Dennis, Richard Hobbs and Joan Nassauer editors. 2004. *Ecological Networks and Greenways: Concept, Design, Implementation*. Cambridge, England: Cambridge University Press.

Little, Charles E. 1990. *Greenways for America*. Baltimore: John Hopkins Press.

National Park Service Rivers and Trails Conservation Assistance. 1995. *Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors*. Washington, DC: National Park Service.

INTRODUCTION

This Regulatory and Policy Solutions section is designed to give the City of Warner Robins some potential legal tools and policies to effectuate any of the "Visions" prepared and presented by the CCDP during the Russell Parkway design phase. Warner Robins currently has a traditional zoning code which encourages separation of uses and does not incorporate most of the tools suggested below. Therefore, this section provides general advice on how to create these regulatory and policy solutions. Where available and appropriate, model ordinances and references to other sources are provided in the appendices.

There are several regulatory tools and land use policies that can be used to fulfill any of the visions presented during the design process. In fact, the City may find it desirable to "mix and match" some of the approaches to meet the economic development and environmental needs of the community, while promoting the desires of landowners and community leaders for a more attractive, less congested, welcoming and "green" parkway as a gateway for the City. For ease of use the tools are listed in alphabetical order. At the beginning of each section is also a description of which design scenarios might be served by an individual tool.

TOOLS AND POLICIES

Agricultural zoning and Tools for agricultural preservation

In the "Agricultural Approach," pecan and peach orchards are proposed at some points along Russell Parkway, intermingled with commercial development. The land targeted for this proposal is currently in productive agricultural use or orchards. Most of it is zoned in a residential classification. Warner Robins does not have agricultural zoning, except for a "Residential Agriculture (R-AG)" designation that allows residential development on 1 acre lots. The Future Land Use Map in the Year 2025 Land Use Plan for the Warner Robins Area Transportation Study indicates that this land will be variously zoned commercial and residential, with some "general agricultural/open undeveloped land." However, there is legitimate concern that once commercial uses begin to encroach on the land, it will become too valuable to remain in agricultural production.

There are two potential approaches to retaining agricultural land along the corridor. First, the City may adopt an agricultural zoning category suitable for continued production while allowing for some residential and farm-related commercial uses. Also, in order to maintain affordability of the land and ensure continued viability for agricultural production, the City can

encourage landowners to place permanent conservation easements on the land. Conservation easements can provide favorable income and property tax treatment on the land, with the easement ensuring that the land will always be used for agriculture or open space uses. For landowners who cannot afford to voluntarily place easements on their land, a program to purchase easements may be put in place by the City. Sometimes known as "Purchase of Development Rights," these programs use public and private funding to purchase the right to place a conservation easement on the land, allowing the landowner to afford to continue to farm or enjoy the open space uses of the property.

AGRICULTURAL ZONING

There are two types of agricultural zoning: exclusive and non-exclusive. Exclusive agricultural zoning allows use of the land for agriculture only, permitting only a limited amount of non-farm development. However, exclusive agricultural zoning is most effective in the Midwest, where large intensive farm operations prevail. In Georgia, where farms tend to be smaller, non-exclusive agricultural zones are usually more effective. These zones often allow residential and farm-related commercial uses (1). This type of zoning may be an option in Warner Robins.

There are several varieties of non-exclusive agricultural zoning based upon density limitations on residential development. Local governments usually require large minimum lot sizes. These density limitations typically must correspond to the minimum size of commercial farms in the area in order to be effective. In Warner Robins, orchards require 5 or more acres to be viable, and so minimum lot sizes might be in that range.

The other option for non-exclusive agricultural zoning is the area-based allocation. Unlike the minimum lot size method, this system bases the amount of development allowed upon the total size of the parcel. Under this system, the landowner is still permitted to build a certain number of houses per amount of acreage, as under the minimum lot system. However, the number of houses permitted decreases as the size of the landowner's parcel increases. For example, an ordinance with the sliding scale system might permit two landowners, one owning a 50 acre parcel and the other owning a 100 acre parcel, to both construct three dwelling units and four dwelling units, respectively, on their properties (2). The idea behind this system is to save larger parcels for productive agricultural use.

Finally, some localities permit development only in areas where the soil is of marginal quality for farming. This zoning type allows the landowner to create a certain number of lots, regardless of lot size, and, in this way, it is similar to cluster zoning in agricultural areas.

Attached as *Appendix a* are summaries of agricultural zoning ordinances promoted by the American Farmland Trust. Some of these ordinances allow agricultural zones in which "pick your own" farms and limited commercial uses such as farm markets and "eco-tourism" farms are allowed by right. This blend of commercial development with agriculture might be suitable in some areas along Russell Parkway.

CONSERVATION EASEMENTS

A conservation easement is a voluntary agreement between a property owner and the easement holder in which the property owner agrees to forgo developing the property. The Georgia General Assembly has authorized the creation of conservation easements in the Uniform Conservation Easement Act (3) for use in preserving the natural, scenic, or open space values of land.

There are many incentives for landowners to donate conservation easements. Some of the biggest incentives are tax advantages. The

donation of a conservation easement can be used to reduce the landowner's income, estate, and property taxes (4). The property owner retains title to the land and can continue to live

1. Examples of some other non-farm uses that are permitted in some non-exclusive agricultural zoning schemes include: forestry uses, nurseries/greenhouses, wildlife refuges, fish hatcheries, schools, beekeeping, non-commercial recreation (such as family pools and tennis courts).

2. The Shrewsbury Township and York County, PA ordinance is an example of a sliding scale, area-based ordinance:

Size of Parcel	0-5 acres	5-15 acres	15-30 acres	30-60 acres	90-120 acres	120-150 acres
# of Dwellings Permitted	1	2	3	4	5	9

3. O.C.G.A. section 44-10-1 *et. seq.*

4. A property owner in Georgia who grants a conservation easement is entitled to a revaluation of their property for tax purposes (O.C.G.A. section 44-10-8). The donation of an easement may also qualify for a charitable deduction for income tax purposes and a reduction in the value of the owner's taxable estate. See the Georgia Environmental Policy Institute website at: <http://www.gepinstitute.com/concease.htm#TAX> for information on conservation easements and their tax implications.

on it, sell it, or bequeath it by will. Conservation easement agreements are written to allow certain uses on the land, such as farming, fishing, or hunting. Unlike zoning, which may be altered by future zoning board decisions, conservation easements can be perpetual (5). The local government can therefore be assured that the land will remain undeveloped despite any future zoning changes.

Conservation easements are currently being used by many jurisdictions in Georgia to preserve land. The Oconee River Land Trust has been accepting conservation easements for property along the Oconee River for over a decade to prevent development in this watershed (6). The Altamaha Scenic Byway project, a combined effort among McIntosh and Glynn Counties, the City of Darien, the St. Simon's Island Land Trust, and the Nature Conservancy, will use conservation easements to help preserve a 17 mile stretch of historic and scenic land along the Georgia Coast that is facing development pressure.

If Warner Robins decides to use conservation easements to preserve undeveloped land, the City should take the following steps (7):

1) Identify or create easement holding organizations.

A local government may designate itself as a land trust for purposes of accepting and holding conservation easements or choose to partner with an existing non-profit land trust or other organization that holds conservation easements (8). Often non-profit land trusts will have funding, staff, and experience to aid in effectively managing a conservation easement program.

2) Prioritize the properties that need to be preserved.

Acceptance of conservation easements should be in line with the goals of the local government's land preservation plan. If, for example, the goal is to preserve land along Russell Parkway, properties located on or near the corridor should be given the top priority. This may be accomplished by soliciting property owners to donate a conservation easement over their land. If a landowner responds positively, the managing group should assess the property to be certain that it meets the goals of the master plan before accepting the easement.

3) Negotiate with landowners to develop conservation plans for properties.

Once the easement offer has been accepted, the parties should negotiate to develop a conserva-

tion easement agreement for the property that fits the needs of the landowner as well as the conservation goals of the local government (9). Once a satisfactory agreement has been reached, the parties should close the deal and the easement holder should promptly record the conservation easement in the county recording office. The easement holder should also take responsibility for monitoring the property to be sure that the protective covenants contained in the easement agreement are not violated.

Conservation easements have many advantages as tools for protecting property from development. If used in combination with PDR and acquisitions, conservation easements can help a local government attain its goals of preserving land along a scenic corridor, agricultural district, or other key conservation area.

PURCHASE OF DEVELOPMENT RIGHTS

PDR programs are helpful for agricultural preservation, environmental conservation, or protection of open space. The most common type of PDR programs buy development rights to protect agricultural land facing pressure from encroaching urban areas. PDR programs in Georgia are authorized by state statute and administered at the county or municipal government level (10). They are created by a local

ordinance authorizing PDR, and often creating a land trust or advisory board to administer the program (11). The ordinance should also provide for the membership of the administrative body and funding sources, and should outline the process and methodology to be used for making PDR decisions.

Membership of the administrative body typically consists of at least one member of the local government's planning department. Other members often include land preservation specialists, and members of the agricultural community. These boards oversee the application process for the PDR, solicit offers to prospective sellers, administer the PDR ranking and valuation processes, conduct the PDR transactions, and monitor the properties once the development rights have been purchased.

A PDR program also needs a system for determining the purchase price of the development rights. Two common methods are appraisal and point based valuation. Appraisal involves having a certified appraiser determine the development value of the land and the value in its preserved state. The difference between these two figures is the value of the development rights. Appraisal has been disfavored by some jurisdictions because of the cost of hiring a private appraiser increases the cost of the PDR

transactions. Points systems are another method of appraising property values. Howard County, Maryland used a point bases system utilizing factors such as acreage, soil type, and proximity to urban areas to formulate a per acre price for development rights (12). Point based systems have the advantage of lower costs and reduced disparity between appraised prices of similar properties.

PDR programs can be funded in a variety of ways. One of the most common ways is by voter-approved bond issues. Other options are property or sales tax revenues. Often this is accomplished by getting voter approval to increase property tax millage rates or to implement a Special Purpose Local Option Sales Tax (SPLOST) for the purpose of funding the PDR purchases and program administration (13). Some jurisdictions have found unique ways of funding their PDR programs. Lancaster County, Pennsylvania, which has one of the most successful PDR programs in the nation, initially used a cigarette tax to fund a portion of their program's financial needs. Farmland

5. According to O.C.G.A section 44-10-3 (c), conservation easements are assumed to be perpetual unless the duration is limited by agreement.

6. The Oconee River Land Trust has helpful information on land trusts and conservation easements available on its website at <http://www.orlt.com>.

7. See: Georgia Department of Community Affairs, [Toolkit of best practices](http://www.dca.state.ga.us/intranonpub/Toolkit/Guides/ConsEasmt.pdf), available at: <http://www.dca.state.ga.us/intranonpub/Toolkit/Guides/ConsEasmt.pdf>

8. According to O.C.G.A (sec) 44-10-2(2), the holder of a conservation easement may be a government entity empowered to hold interests in land or a charitable organization whose purposes comply with the statute. Refer to the Georgia Environmental Policy Institute website (<http://gepinstitute.com>) or the Georgia Department of Natural Resources website (<http://www.gadner.org>) for a list of conservation organizations in your area.

9. Conservation easement agreements may be tailored to fit the needs of both parties by adding provisions that allow certain activities such as development of only one or a few additional structures, environmentally friendly timber management practices, and hunting and fishing. A sample conservation easement agreement is available at <http://www.gepinstitute.com/consease.htm#DEED>.

10. O.C.G.A 36-66A-1 *et seq.*

11. A helpful example of a PDR ordinance is the Dunn, Wisconsin ordinance 4-3, which can be accessed online at <http://www.userpages.chorus.net/towndunn/pdordinance/htm>.

12. Howard County's pricing guidelines for development rights available at: <http://www.co.ho.md.us/DPZ/DPZDocs/criteria&pricing/pdf>.

13. Athens-Clarke County (GA) recently authorized a SPLOST in order to help provide funding for a greenway on the Oconee River. For authorized uses of SPLOST funds, see O.C.G.A. section 48-8-11.

Protection Program grants from the United States Department of Agriculture may be available to match local PDR program funds. Lastly, donations from private individuals, conservancies, and Land Trusts may help provide funding for PDR programs (14).

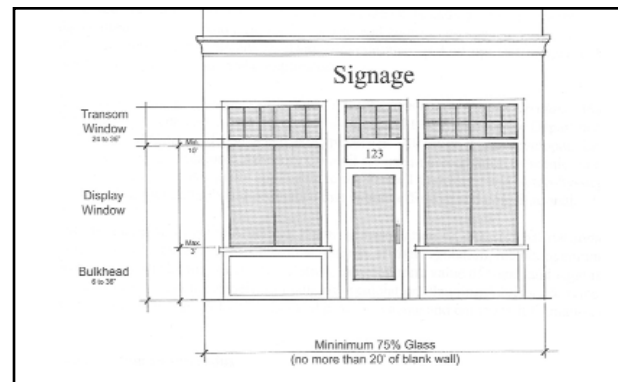
ARCHITECTURAL STANDARDS DESIGN GUIDELINES

This tool relates to all four of the "Visions." The idea of creating uniform architectural standards was mentioned throughout the design process, due to the desire to develop a standardized "look" for buildings along the corridor.

Architectural standards and design guidelines are used to promote aesthetics and appropriate architecture, and to provide a unique sense of place to the community. Wherever they are used, architectural design guidelines should have a clearly defined purpose. This serves to inform builders of the reasoning behind requiring such standards and to give credence to their enforceability. The creator of a design ordinance should consider the community's unique characteristics in its recommendations and proposals. Compatibility with historic sites, natural features and existing buildings (to the extent appropriate) should be taken into consideration when creating architectural design guidelines. Typically, local governments adopt an ordi-

nance describing how the design guidelines are applied, along with text and graphical design guidelines used when projects are reviewed. The more successful design guidelines do not focus on dictating style, but on illustrating spatial elements such as building type or form, proportion, scale, height, and setback, as well as delineating acceptable and unacceptable building materials.

Illustrations are important in a design ordinance, to give visual representations of the types of acceptable and unacceptable development. For example, to the right is a potential illustration of an "appropriately" designed storefront.



(Source: Caleb Racicot: Tunnell-Spangler-Walsh & Associates, Atlanta, Georgia.)

INCLUDE: Setbacks

Minimum setbacks requiring buildings to "address the street."

Building Shape and Height

Buildings should be proportionally designed and in context with their surroundings. Requirements for upper stories and attractive façades are highly recommended for good design and relationship to the street.

Roof Line and Overhang

For example, buildings with flat roofs should have cornices or decorative bands to "cap" the façade.

Window and Door Proportions and Grouping

Generally, there should be more glass and less wall at the storefront level, which these "fenestration" requirements help achieve.

Storefront Standards

Storefront design should not be allowed to stray out of its natural place within the façade. Storefronts should be as transparent as possible.

Lighting Standards

Lighting should be appropriate for the context, and balance visibility and safety against light pollution problems.

Landscaping Standards and Greenspace Requirements

Landscaping and requirements for green areas and "pocket parks" help create aesthetically pleasing sites and encourage pedestrian use. (For more on this topic see the Tree and landscaping ordinance section.)

Parking Lot Design

Requirements that parking be placed behind and beside retail and office buildings minimizes the "acres of parking in front" phenomenon.

Site Grading

Grading should be minimized to reduce environmental damage and to encourage "context sensitive" design. (See the "Better Site Design" section.)

Signage requirements

Should balance visibility with aesthetics. (See the "Billboard and Signage Requirements" for more on this topic.)

To implement the design guidelines, communities often create a design review board,

although smaller communities tend to have the City Council oversee the design review process. Creation of design review board is often preferable because experts or those with architectural experience or training can be appointed to oversee the review process. This strengthens the authority of the board and defensibility of its decisions. Normally the design review board should be an advisory body which makes recommendations to the Council. Also, the design guidelines should be objective in nature, and the board should be required to approve all projects that meet those objective standards. This will help avoid charges that the board's recommendations are arbitrary or capricious and therefore open to legal challenge. Like any administrative process, the board must ensure due process by following its procedures and making justifiable decisions based on a reasoned-and well documented-application of the design guidelines to the proposed project. There should also be an appeals process.

Since design guidelines are unique to each community, model ordinance language is generally unhelpful in creating and implementing these guidelines. An additional helpful resource is "Making Your Design Review Process Defensible," available at www.planning.org/thecommissioner/summer01.htm.

BILLBOARD AND SIGNAGE RESTRICTIONS

Billboard regulation was listed as a desire of landowners and community leaders during the charrette process. Reduction of billboards and appropriate signage is key to improving aesthetics along any roadway with commercial development. Sign regulation is also a very contentious and complicated issue.

Two resources can be very helpful. The first, Sign Control on Rural Corridors: Model Provisions and Guidance, was developed by the Land Use Clinic for the Department of Community Affairs, and is attached as *Appendix b*. Although it was developed for a Northeast Georgia Regional Advisory Council for use in preservation of scenic rural corridors, its advice is equally applicable to the Russell Parkway. It is a step-by-step guide to designing a billboard ordinance that is both effective and constitutional.

14. For information on conservation organizations interested in partnering with local governments in managing a PDR program or providing funding, contact the Georgia Land Trust Service Center (<http://www.gepinstitute.com>) or the Georgia Department of Natural Resources (<http://www.dnr.state.ga.us/greenspace/pdfs/sources.pdf>).

The second resource is the American Planning Association's Context-Sensitive Signage Design. It is an excellent resource on all aspects of sign regulation, including community involvement, the history of sign regulation, the economic value of signs, and legal issues. To gain access, visit the American Planning Association Planning Advisory Service - www.planning.org/signs/Login.asp - and provide a name and company information to log in.

CONSERVATION SUBDIVISIONS

Conservation subdivisions are a key component of the "Conservation and Scenic Approach." Unlike conventional subdivisions, conservation subdivisions preserve a significant portion of their total area as common open space by clustering houses on smaller lots. This open space is typically preserved using a conservation easement. Benefits to developers include lower infrastructure costs and higher property values. Benefits to homeowners include proximity to open space, which can be used for passive recreation such as hiking.

The purpose of a conservation subdivision ordinance is to permit flexibility of residential design in order to promote environmentally sensitive and efficient uses of the land, to conserve open space and open space networks (including public trails and greenways) in per-

petuity, to protect sensitive natural resources, water quality, wildlife habitat, and important historical sites, and to reduce infrastructure construction and maintenance costs by providing for clustering of houses and structures.

Planner and conservation subdivision advocate Randall Arendt has written the seminal guide, *Conservation Design for Subdivisions: A Practical Guide to Creating Open Space Networks*, (1996), which contains model ordinance provisions. Conservation subdivisions are becoming increasingly popular in Georgia. Laurie Fowler and Seth Wenger of the UGA Institute of Ecology have created a model ordinance for Georgia, which is attached as *Appendix c*. This ordinance is part of an Atlanta Regional Commission Quality Growth Toolkit, along with a guide to conservation subdivisions and case studies. The entire document is available at www.atlantaregional.com/quality-growth/planning/Toolkits/CONSERVATION_SUBDIVISION_TOOL.pdf.

"GREEN" DEVELOPMENT AND REDUCTION OF PAVING

The ideas of reduction of paving and design of building sites that are "green" were mentioned by property owners and community leaders as values to be promoted in the development process. These tools relate particularly to the

"Smart Growth," "Conservation and Scenic," and "Poly-Nuclear" Approaches.

Better Site Design

Better site design employs a variety of design techniques to reduce impervious cover, increase the amount of natural, vegetated lands set aside for conservation, and use "pervious areas" for more effective stormwater treatment (15). Streets, parking spaces, setbacks, lot sizes, driveways, and sidewalks are all reduced in scale to reduce paving and increase green areas. At the same time, better site design includes use of creative grading and drainage techniques that will reduce stormwater runoff and encourage more infiltration.

While use of better site design practices have a hugely beneficial impact on communities, they are often hard to implement because existing zoning ordinances, subdivision regulations, street and parking standards, and drainage regulations hinder rather than help the implementation of better site design. Furthermore, developers are often not willing to change old practices because doing so may risk delay or rejection of site plans that are expensive and time consuming to create (16). However, many resources exist to help change that regulatory picture.

For example, in 2001, the Center for Watershed Protection (CWP) published Smart Site Practices for Redevelopment and Infill Projects, containing specific practices and programs that local governments, developers, and communities can implement (17). *Smart Site Practices* makes several broad recommendations to preserve greenspace and decrease impervious cover. These recommendations can be adopted in whole or in part.

First, at the planning stage, governments can require an environmental site assessment, to help identify opportunities for natural resource restoration, reclamation and preservation. Also, the developer's site plan and design should preserve naturally vegetated areas, and, when feasible, include plans for re-vegetation, soil restoration, and use of native or non-invasive plants. Developers should also utilize existing impervious cover as efficiently as possible and minimize the size of parking lots and streetscapes.

Smart Site Practices also includes many recommendations for improving stormwater management and encouraging public transit and other non-automotive transportation forms. Parking lots should be designed to reduce, store and treat stormwater runoff using techniques such as functional landscaping and incremental min-

imization of lot size. Streets should minimize, capture, and reuse stormwater runoff. Governments can accomplish this by mandating narrower streets, and requiring landscaped areas and/or trees along street front. Also, source control of pollutants is a simple and cost-effective way to reduce stormwater pollution at many commercial sites, and techniques include designing better loading docks, covering potentially polluting materials stored outdoors, and containing dumpsters and fueling areas. Finally, local governments can encourage alternative transportation forms by increasing non-automotive connections to adjacent land uses, providing links to mass transit, and using alternatives to traditional sidewalks.

Because better site design impacts so many different development practices, the best way to determine which types of land use regulation need to be changed, and what the community is already doing right, is through the use of CWP's "Code & Ordinance Worksheet," available at www.cwp.org/COW.pdf. This worksheet allows in-depth review of zoning, subdivision, and other local codes.

Parking

Another, less ambitious way to reduce paving is reduction of parking lots through better parking planning. As with many communities,

Warner Robins has fairly high minimum parking requirements for new development, particularly commercial development. Industry studies show that parking requirements can be set lower, and made maximums instead of minimums, to make important reductions in paving and improvements in aesthetics and environmental protection. The following are suggestions for achieving the optimal level of parking.

Identify Parking Demand: Parking demands vary. The best way to make a determination of parking needs is a periodic survey of current and planned land uses, local travel patterns, and parking problems at different locations in the community. This type of community-specific data collection can help Warner Robins adjust its parking requirements over time.

15. Pervious areas are streets or parking lots paved with pervious materials that permit water to enter the ground by virtue of their porous nature or by large spaces in the material. See: City of Austin's Green Building Program, Sustainable Building Sourcebook, available at: <http://www.greenbuilder.com/sourcebook/PerviousMaterials.html>.

16. Center for Watershed Protection, An Introduction to Better Site Design 1. 2003. Available at: http://www.cwp.org/Downloads/ELC_PWP45.pdf

17. The full text can be found at <http://cwp.org/smartsites.pdf>.

Parking Plans: One way to ensure that parking issues have been fully considered for a particular development is to require a parking plan be submitted with development permit applications. A parking plan incorporates site-specific data and explains how the development plan meets existing parking regulations. Developers could also be asked to submit plans that vary from existing parking requirements to reduce the amount of on-site parking.

Parking Structures: When land is at a premium or walking distances from parking spaces are too great (generally more than 1,000 feet), parking structures should be considered. Although parking structures are more expensive than surface parking (sometimes more than five times as much per space), parking structures can add aesthetic, environmental, and overall cost-saving features if placed in an ideal location. In addition, depending on the site and purpose of the parking structure, the structure may house additional uses. For example, a large shopping center could include a parking structure with small shops on the ground floor and parking on the upper levels.

Other helpful sources on parking include: Tri-State Transportation Campaign, Parking Management: A Brochure, <http://www.tstc.org/pricing/parkman;>

Urban Land Institute, *The Dimensions of Parking*, 4th ed. (2000); Institute of Transportation Engineers, *Transportation Planning Handbook*, John D. Edwards, ed., 2nd ed. (1999); and T.P. Smith, *Flexible Parking Requirements*, Planning Advisory Service Report No. 377, American Planning Association (1983).

GREENWAYS

Greenway is a term for a linear open space that provides connections and fosters movement. The *Greenway* concept is used in the *Smart Growth Approach*, and could also be an element of the *Conservation and Scenic Approach*.

There are many different approaches to greenway development, from multi-million dollar programs with significant infrastructure to footpaths along local streams. Creating a greenway requires planning, creation of public and private partnerships, building public support, organizing funding, and creating appropriate regulation and management practices. One resource designed to guide communities through the entire process is *The Conservation Fund's Greenways: A Guide to Planning, Design, and Development*, Loring Schwarz, ed. (1993).

MIXED-USE ZONING

Like many communities in Georgia, Warner Robins has a traditional zoning scheme that separates commercial, office, and residential uses in separate districts. However, there is a growing trend to create *Mixed-Use* developments to reduce traffic, make options for development more flexible, and generally create a community that brings people closer to work, play, and shopping options. This encourages more pedestrian activity and increases convenience for residents and workers alike. Concepts related to mixed-use development are heavily referenced in the Russell Parkway planning process. For example, the *Smart Growth Approach* includes mixed-use facilities providing housing, restaurants, and stores in the same building, to create an active pedestrian population, increase revenue for developers, and reduce the impacts of development on surrounding land. The *Agricultural Approach* includes a "high density small town commercial center" which allows surrounding residents to walk or bike to the store and creates opportunities for neighbors to interact. The *Poly-Nuclear Approach* is at heart a mixed-use approach, clustering the uses around key intersections to create a retail/residential mix surrounded by natural spaces.

The implementation of mixed-use districts essentially requires the replacement of existing zoning regulations with a new scheme. Fortunately, as mixed-use zoning gains acceptance in communities, more planning guidance and model resources are available. For example, the Atlanta Regional Commission has an excellent section on mixed-use development in its "Community Choices Toolkit." The Mixed-Use Model Ordinance from that toolkit is attached as *Appendix d*. This model ordinance is flexible and may be used by Warner Robins to create one to four zone districts with varying characteristics, from neighborhood centers to commercial corridor districts. The entire document is available at www.atlantaregional.com/qualitygrowth/toolkits.html#mixed. It covers concepts such as using mixed-use development to reduce overall parking requirements, relating mixed-use zoning to the community's comprehensive plan, appropriate height and scale of development, the legal framework of mixed-use zoning and many other topics. It also contains a comprehensive list of additional resources and case studies of how communities implement mixed-use zoning.

NODAL DEVELOPMENT

Nodal development and mixed-use zoning are closely-related topics, as development nodes

usually contain a mix of uses. The "Poly-Nuclear Approach" developed during the Russell Parkway charrette is derived from an approach also known as "development pulsing" or "nodal development." This planning concept is often used to prevent uncontrolled strip-style development along a corridor. Growth is confined to dense, interconnected clusters or nodes, with open space or residential areas in between (18). By concentrating a wide mix of commercial and residential uses at the nodes, consumers are placed within walking distance of offices, stores, and transit stops. A grid-style street system within the nodes allows traveling consumers to exit main thoroughfares, park, and walk to their desired locations instead of driving from store to store. This cuts down on vehicular traffic congestion and pollution, and improves the appearance of commercial districts, attracting consumers, new businesses, and increased sales and property tax dollars. Zoning the land between pulse points for low density residential or open space can create or conserve green space.

Nodal development is becoming popular in Georgia. For example, the City of Atlanta employed development pulsing in its Donald L. Hollowell/Bankhead Highway Redevelopment Plan (19). For this strip corridor redevelopment project, eight pulse points were chosen to

serve as commercial and mixed use centers along the corridor. The criteria for choosing pulse points included population density and demographics, proximity to MARTA stations, and ability to handle traffic, as well as input from the community expressed at public meetings.

Similarly, the City of Dalton is implementing nodal development at several key intersections along the Walnut Avenue corridor, near residential areas. The purposes of the ordinance are to reduce cluttered, strip-style development along the corridor, and reduce traffic by creating pedestrian destinations and live-work areas. Their nodal development ordinance should be ready by July, and might be an excellent model for development at a similar scale to Warner Robins and the Russell Parkway. Dalton's Quality Growth Director Gaile Jennings is willing to provide that ordinance, and answer any questions, if contacted at GJennings@whitfieldcountyga.com.

18. For more information on development pulsing, please see the Urban Land Institute's "Ten Principles for Reinventing America's Suburban Strips" by Michael D. Beyard and Michael Pawlukiewicz. This article is available online at: <http://www.uli.org>.

19. Information on the Donald L. Hollowell Redevelopment Project can be found online at: http://apps.atlantaga.gov/citydir/DPCD/Bureau_of_Planning?BOP/Plan_Study/Hollowell_Draft.

OVERLAY ZONING

The design concept ultimately chosen for Russell Parkway can be implemented through an overlay district. Overlay districts are special zones placed "on top" of existing zoning and planning regulations. The overlay district contains requirements that either supplement or replace the underlying regulations. This approach allows local governments to maintain current codes while addressing the special needs of particularly sensitive areas. This is an attractive option for communities wishing to revitalize a particular corridor without more extensive amendments to the jurisdiction's underlying zoning ordinance.

The overlay district is a tool that is widely used by local jurisdictions in Georgia. No additional statutory authority beyond state-granted zoning and planning powers is required. However, creation of an overlay ordinance is a zoning action, and the appropriate state and local notice and hearing requirements should be followed. The mapped boundaries of the overlay district do not necessarily have to coincide with other zoning district boundaries, and may not follow parcel boundaries. Instead, natural features, roads, etc. often define the perimeter of the overlay district.

Two sample overlay ordinances are attached as *Appendix e* and *Appendix f*. The first, which was developed by the Land Use Clinic for Dalton, Georgia, is designed to encourage strip corridor redevelopment, and contains some provisions similar to those suggested in this document. The second, also created for regulating a road corridor, is part of the "Uses of Overlay Districts" portion of ARC's Quality Growth Toolkit. This document is available at www.atlantaregional.com/qualitygrowth/OVERLAY_DISTRICTS_TOOL.

When enacting an overlay district, it is important to consider the language of Warner Robins comprehensive plan. Well-written comprehensive plans should provide goals, objectives, and policies to substantiate the need for, and public purpose of, overlay districts. It may even be advisable to amend the comprehensive plan to further reflect the purposes of the overlay ordinance.

TREE AND LANDSCAPE ORDINANCE

The "Agricultural Approach" suggests the use of pine stands along Russell Parkway as buffers from commercial development. Also, the use of trees and landscaping in general are often part of corridor regulation. Similar to sign regulation and architectural standards, a tree and landscaping ordinance could be beneficial for

any of the design scenarios. Warner Robins currently has no tree or landscape regulations. The critical elements of a tree ordinance are discussed below. Also, the Greensboro, North Carolina tree ordinance is attached as *Appendix g*. Another extensive source of sample tree ordinances is on the website of the Forest Service's Southern Region at www.urban-forestrysouth.org/ordinances/index.asp.

Street-Side Planting Areas

To create an appealing and pedestrian friendly atmosphere, it is important to require planting areas along the street. Many tree ordinances require only that a development include a certain number of trees, usually calculated based upon the total acreage. This type of ordinance is not sufficient to develop and maintain a tree-lined streetscape. Therefore, within the overlay district the tree requirements should call for street-side planting strips. These planting strips should be along the right of way, whenever possible, and allow for reasonable entry and exit to properties along the corridor. Whenever possible, existing mature trees should be preserved and included in the landscape plan for the property.

Size and Quantity of Plantings

When developing guidelines for tree planting, it is helpful to take a long term perspective. It is recommended that tree placement and design be determined by the prospective ten-year growth of the tree species being planted. Planting trees without adequate space may result in added future cost, as the trees will need to be pruned more frequently or possibly replaced. The size of the tree may vary depending on the type of native species. The goal should be to maximize canopy coverage without endangering the health of the trees. Also, it is important that the tree ordinance allow for flexibility in cases where buildings or above ground utilities must be accommodated in the landscape plan. By using various sizes of trees and requiring shrub planting, the goal of continuous street-side vegetation can be accomplished.

Canopy Trees

Large, street-side canopy trees are the most appealing aesthetically and environmentally. They provide large amounts of shade to people and buildings, while helping reduce the environmental impact of development. A canopy tree is one with a height of 40 feet and a crown of 30 feet at maturity. For canopy trees within the street-side planting strip, it is recommended that a planting density be set, and the number

of trees determined by the street frontage of each lot. For example, an ordinance might say, "street-side planting areas shall include two canopy trees in the first forty feet and one canopy tree per forty feet thereafter or fraction thereof, if the remaining distance is twenty feet or more." Best practices require a width of at least 8 feet for the planting strip, with an optimum width of 12 feet. A canopy tree should never be planted in a strip with less than 4 feet of separation from an impervious service, because this could prevent the root system from having adequate access to soil and water. Also, it would increase the likelihood of root systems damaging the sidewalk or roadway.

When possible, "water wise" tree species should be used, as they require minimal watering for health growth. A water wise canopy tree should be a minimum of 2 inch caliper, measured six inches above grade, when planted. All other canopy trees should be a minimum of three inch caliper, measured six inches above grade. The difference encourages property owners to plant water wise species (21).

Understory Trees

When buildings or utilities come into conflict with larger trees, smaller understory trees should be substituted. When mature, an understory tree should be 25 to 40 feet high (22).

Understory trees may be used in areas where overhanging utility lines make the planting of canopy trees impracticable. For every one canopy tree required, two understory trees should be substituted (23). A water wise understory tree should be a minimum of 1 inch in caliper, measured 6 inches above grade, when planted. Other understory trees should be a minimum of 2 inches in caliper, measured 6 inches above grade, at time of installation.

Shrubs

Recommended species of shrubs should be of a locally adapted nature so as to limit maintenance costs and avoid the introduction of invasive and/or foreign species. To minimize the need for watering, an arborist should develop a recommended list of water saving species. Shrubs can help large trees around them by lowering the amount of evaporation from the soil. Also, shrubs can provide an eye-pleasing buffer along the side of the roadway. A recommended density for street-side planting strips is 17 shrubs per 100 feet of frontage, because maintaining street level vegetation is important to create the desired aesthetic effect.

20. See, e.g. Zoning Procedures Law, O.C.G.A. 36-66-1 et seq.

21. Greensboro, N.C. Tree Ordinances, section 30-5-4.9 (2003).

22. Id.

23. Id.

Above Ground Utilities

Planting tall growing trees under and near overhead lines will ultimately require the utility company to prune the tree in order to maintain safe clearance from the wires. Frequent pruning may give the tree an unnatural appearance and shorten its life span, as frequently pruned trees are more susceptible to insects and disease (24). To avoid these hazards, the size of the tree at maturity should be considered. Proper selection and placement of trees in and around overhead utilities can eliminate potential public safety hazards, reduce expenses for utilities and their rate payers, and improve the appearance of landscapes.

Underground Utilities

It is increasingly common for utility lines to be buried underground. The large underground root systems of street-side trees will rarely interfere with utility lines. Most commonly, conflict between trees and underground utilities occurs at the time of planting. This can be avoided through proper planning and use of reasonable care. When making repairs to underground utilities, it will be important for local utility companies to be cautious so as to not damage the root systems of street-side trees.

Trees in Parking Lots

Requiring shade trees to be planted in and around parking areas has aesthetic and environmental benefits. Un-shaded parking lots retain a large amount of heat in warmer climates. This contributes to both the urban "heat island" effect (25) and increased air pollution (26). Also, a vehicle parked in shade requires less air conditioning and is less susceptible to gasoline evaporation. Finally, providing shade over parking areas will provide a more pleasant and environmentally friendly atmosphere.

For maximum environmental benefit, property owners should be required to maintain a tree canopy that will provide 50% shade coverage over the parking surface. The amount of shade coverage provided should be calculated based upon the predicted size of the tree crown fifteen years after installation. It is important that shade falling outside of the parking area not be counted. Also, within the parking area, overlapping shade should only be counted once towards total coverage.

Maintenance and Public Awareness

Property owners should be responsible for maintaining healthy trees and shrubs, since few local governments have the budget to fund an extensive tree maintenance program. Maintenance may include periodic pruning,

replacement of mulching, or even replanting dead trees and shrubs. It is important that property owners are educated on how to properly care for the trees on their lots. An arborist should develop proper care guidelines and recommend preventative maintenance measures. Without adequate guidance, property owners may end up incidentally harming trees in efforts to maintain them. This is especially true when it comes to pruning a maturing tree. To counter this problem, some local governments have adopted provisions that allow for the government to perform tree maintenance, funded by the property owner. The size of the jurisdiction may determine whether these steps are economically feasible.

Every effort should be made to make the public aware of the benefits that trees provide and encourage citizen participation in monitoring the condition of existing trees. This can be accomplished through the establishment of a voluntary local tree board. The tree board serves as an advisory committee on the needs of improving and maintaining the urban forest. Other responsibilities may include assisting the local arborist in selecting proper species for the area. Some jurisdictions ask the tree board for advice when determining budget issues for parks and other tree related services. Whether or not the tree board has these types of author-

ity, it is beneficial to have an organized body devoted to monitoring the status of the trees in the district.

Compliance

To achieve compliance, it is important to clearly delegate the authority to enforce the provisions of the tree and plant ordinance. In a smaller jurisdiction this duty may fall upon the planning department when reviewing the site plan or issuing permits. Approval of landscape plans might be required when issuing building or occupancy permits.

Another problem is that many times the trees and plants reflected in the plan are never planted or are removed by property owners after receiving the necessary permits. Penalties for violations will depend largely upon budgeting for enforcement. Penalty provisions in tree ordinances range from nominal dollar fines to complete revocation of building or occupancy permits when a violation is discovered. Whatever method is chosen, it is important that compliance measures provide adequate deterrence from violating the planting provisions.

24. More information from the International Society of Arboriculture (ISA) about managing tree growth amongst utilities can be found at :
http://www.treesaregood.com/treecare/avoiding_conflicts.asp.

25. On warm days, a city can be 6-8 degrees fahrenheit hotter than surrounding areas. These cities are called "urban heat islands." The cause is believed to be the large amount of impervious cover in certain areas, which absorbs large amounts of heat from sunlight. Shade trees can greatly reduce the problem.

26. Scott, K.I., Simpson, J.R., and E.G. McPherson. 1999. Effects of tree cover on parking lot microclimate and vehicle emissions. *Journal of Arboriculture* 25(3):129-142. Online at:
http://www.ucufre.ucdavis.edu/effects_of_treecover_on_parking.htm.

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- a. Agricultural Zoning Ordinances
- b. Sign Control On Rural Corridors
- c. Conservation Subdivision Model Ordinances
- d. Mixed Use Model Ordinance
- e. Walnut Avenue Overlay District Ordinance
- f. Model Ordinance Parkway Village District
- g. Advisory Committee on Trees (ACT)

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