Form-Based Codes:  
An alternative zoning method used to redevelop the Georgia Square Mall in Athens, GA  

by  

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This paper represents work done by a UNC-Chapel Hill Master of City and Regional Planning student. It is not a formal report of the Department of City and Regional Planning, nor is it the work of the department’s faculty.

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An alternative zoning method used to redevelop the Georgia Square Mall in Athens, GA

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Although not a new concept, form-based codes have become increasingly popular as cities, towns, and municipalities begin to develop and redevelop urban and suburban areas. Cities, towns, and municipalities that once encouraged sprawling suburban neighborhoods, shopping centers, and single-use buildings with conventional zoning codes are now looking to redevelop these areas into vibrant urban centers. Unlike conventional zoning codes, form-based codes provide a set of guidelines that address the design of public space through the regulation of the physical form, which includes building heights, form, location, types, façade standards, parking, park space, and community gathering space. Form based codes are seen as a prescriptive alternative to using conventional zoning codes and may be implemented in several different ways.

The following paper will briefly explore the history of conventional zoning codes in the United States, which are rooted in protecting the health, safety, and welfare of urban dwellers while cities expanded rapidly during the 19th century, and their effect on sprawling suburban development. In the early to mid 20th century zoning codes meant to protect urban dwellers quickly spread as residents began to leave cities for smaller towns, municipalities, and suburban locations, which has had a tremendous affect on the physical form of suburban development. By the late 1990’s and early 2000’s a shift began to occur in the habits of suburban dwellers.

During this time period many suburban shopping centers that had thrived for half a century began to decline, which can be associated with certain environmental, economic, and social issues taking place across the United States. Businesses located in suburban shopping centers began to relocate to more urbanized shopping areas, leaving behind empty shopping centers with an overabundance of surface level parking. Like many towns across the United States, Athens, GA experienced a rise and fall of suburban development during the past 50 years. An area located along the edge of the city that was home to the largest regional suburban mall in the United States is now struggling to attract businesses and consumers. Using a series of form based design and building standards, the mall site will transform from a dying suburban shopping area into a vibrant urban center.
It is widely thought the origin of conventional zoning codes are rooted in the Supreme Court’s ruling regarding the Euclid vs. Ambler Realty Co. case in the Cleveland Suburb of Euclid, Ohio. Although typical suburban zoning codes, also known as “Euclidean Zoning”, became increasingly popular after the court’s ruling in 1926, earlier versions of conventional codes existed many years before. Early zoning codes were meant to address the health, safety, and welfare of those living within city boundaries (Conner 2011, 7).

As urban populations increased during the mid to late 1800’s, coupled with the evolving technology used to construct larger buildings, zoning codes were used as a way to regulate the unprecedented and chaotic growth happening in many cities across the United States. Early regulations were a responsive measure in order to protect the city’s residents from natural disasters such as flooding and fires as well as poor living conditions, especially for those living in tenement housing (Chused 2001, 601) (Bartlett 1998, 131). Early zoning codes can be traced back to several cities growing at an exponential rate during the 1800’s, such as Chicago. During the mid 1800’s, the city of Chicago enacted several zoning codes restricting the use of certain properties within the city limits that would negatively affect the health of surrounding residents (Caspall & Schweiterman 2006). The Great Fire of 1871 in Chicago also played a large role in restricting the use of certain building materials within the downtown area, see exhibit I (Bartlett 1998, 130). At the time of the fire, many buildings located within Chicago’s central core were constructed out of wood, which proved to further fuel the fire (Bartlett 1998, 130). As steel became more readily available during the early 20th century, many cities began limiting the height of buildings within certain areas in order to protect the human scale and to allow for natural sunlight to continue reaching streets and sidewalks (Bartlett 1998, 131). The city of Boston enacted one of the first laws restricting the height of newly constructed buildings in order to preserve the amount of sunlight within certain areas and to protect it’s iconic skyline, see exhibit II (Welch vs. Swasey 1909).

By the mid 1800’s, several large cities in the United States had also experienced a large influx of immigrants from other countries. With several
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economic and social barriers in place, many immigrants were limited to living in tenement housing, which often proved to be overcrowded and had insufficient access to lighting, water, and clean air (Riis 1890). During the early 1900’s, several cities began passing housing laws, which regulated the layout and design of housing units. By 1916, the City of New York successfully passed a zoning ordinance becoming the first municipality to address several issues affecting the health, safety, and welfare of its residents, see exhibit 3. The ordinance passed by the city also served as a precedent for the Village of Euclid’s zoning laws (Bartlett 1998, 132).

Although not the first municipality to implement zoning laws, the Village of Euclid, Ohio set the precedent of using the typical zoning laws and ordinances, which are still used today, to protect the health, safety, and welfare of urban dwellers within the suburban environment. Unlike its urban counterpart, which includes dense urbanized areas, most suburban areas do not have physical or economic constraints that limit the amount of developable land. Specifically, the Village of Euclid established zoning codes to limit the amount of density allowed in residential areas. The zoning code also called for buffer areas between land uses in order to keep residential areas separated from other uses such as industrial or manufacturing facilities (Conner 2011, 7). The Town of Euclid’s zoning codes were created in 1922 and included six different use classifications as well as basic height restrictions and building setbacks (Steiner 2000, 362). In 1926, Ambler Realty Company sued the Village of Euclid, citing the codes limited their ability to develop privately owned land to its highest and best use. The court sided with the Town of Euclid, upholding the municipality’s right to restrict the use of private property within certain areas (Steiner 2000, 362). The court’s ruling set the precedent for land use zoning across the United States that promoted single separated uses. This type of zoning would ultimately influence the future form and development patterns of suburban areas (Steiner 2000, 362), giving rise to the sprawling, automobile oriented development seen in today’s suburban areas.

Exhibit I | The Great Fire of Chicago
The Great Fire of 1871 engulfed three miles of downtown Chicago, Ill. The fire burned for two days and caused more than $200 million in damage. It is thought the wood material used in the construction of all buildings prior to the fire served as an accelerant for the blaze. In the proceeding months, Chicago’s newly elected mayor attempted to pass an ordinance restricting the materials used for construction in the downtown area. Source: Caspall & Schweiterman 2006

Exhibit II | Boston’s Height Limits
In 1984, the City of Boston successfully limited the building heights of new construction to 125 feet. This ordinance was created out of fear that new, taller buildings constructed out of steel would ruin the existing Boston skyline. During the 1900’s, several more restrictive ordinances were placed to protect certain residential areas from tall buildings. After a private owner sued the city over the height limits, the court ruled in the city’s favor. Source: Welch & Swasey 1909

Exhibit III | 1916 Zoning Resolution
Often referred to as the first zoning regulation in the United States, the 1916 zoning resolution was the first law to regulate building heights and setbacks as well as distinguishing areas as either residential or industrial use. The code also enforced strict building setbacks to allow sunlight to reach the street surface. There were no specific building height limitations, but rather, lot sizes and other laws designating setbacks regulated building heights. Source: Bartlett 1998
From the early onset of the automobile, suburban development has driven the form and functionality of the spaces many Americans call home. Conventional zoning codes meant to protect the health, safety and welfare morphed into regulations that promoted low density, single use development. During the 1950’s, there was an increase in the development of suburban shopping centers to meet the need of an increasing amount of residents moving outside of city centers. Suburban shopping developments were not always commercialized strip malls and regional shopping centers with a sea of concrete parking spots.

Earlier developments attempted to mimic that which could be found on a typical downtown street. Early shopping centers, like Country Club Plaza in Kansas City, MO, included several buildings surrounding an “open aired” common space. The buildings housed a diverse mix of uses from retail to office space and institutional space. The space often included shops, and restaurants located beside or adjacent to government buildings and churches (Dunham–Jones 2011, 113). By the early 1960’s and continuing into the 1980’s, regional shopping centers became increasingly focused around “commercial consumption” (Dunham–Jones 2011, 113). Many developers created larger shopping centers and regional malls with a greater amount of retail space and little, if any, public space in order to attract a larger market of consumers. The reduction or exclusion of public space all together within new suburban commercial strips all but eliminated the chance for social interaction. (Dunham-Jones 2011, 61,113)

When transitioning from urban centers to suburban areas, streets get wider and often include more lanes to handle vehicular traffic, speed limits increase, and land parcels increase in size, creating a larger separation between businesses in order to accommodate automobiles (Forsyth 2008, 1) (Dunham-Jones 2011, 61-62,117). As a result of low-density development, required building setbacks, and buffer zones, many suburban corridors began to look less like “Main Street”, which includes a higher density of uses on small parcels and large amounts of public space that facilitates pedestrian social interaction. Rather, suburban corridors lined with strip malls and regional shopping centers are filled...
with chain retailers, fast food restaurants, automobile shops, and a sea of underused parking lots. Historically, the separation of uses found in suburban shopping centers have made areas less walkable, increasing pedestrians dependence on the automobile to travel to and from shopping areas (Franks 2007, 75). But as the demographics of suburbanites change, so will the development patterns.

**Urban Transformation**

In her book Retrofitting Suburbia, Ellen Dunham-Jones mentions this idea that suburban culture is centered around maintaining a certain “status quo of stability”, where everything is in balance and can meet the needs of residents. As demographics change, so do the needs of residents. An increasing amount of suburban residents are starting to reject the typical suburban lifestyle with bloated suburban strip malls or regional shopping centers and single-family homes. Residents are asking for more urbanized places which facilitate a greater amount of walkability and social interaction. These needs began to be reflected in development and redevelopment trends during the 1990’s and early 2000’s. The typical suburban regional mall development peaked in the late 1980’s (Dunham-Jones 2011, 113-114). Since then, many malls have reached a state of decline or abandonment, with chain stores that once served as the main lifeline for the developments survival opting to move to more urbanized locations. According to Dunham-Jones, declining and abandoned shopping corridors are ripe for development. The infrastructure – roads, utility lines, and grading – are already in place. She also states that many of these shopping centers are located on major arterial roads or adjacent to highways and are surrounded by a great amount of residential communities (Dunham-Jones 2011, 115).

According to several studies, suburban areas are transitioning from homogeneous communities with single-family residences to an increasingly urbanized and diverse area. More residents, who desire an urbanized lifestyle without giving up a certain quality of life found in the suburbs, are moving to areas supported by urban mixed-use development. Dunham-Jones writes that an greater amount of Americans are choosing to live in urbanized centers outside of the central city, with single millennials and empty nesters making up a large proportion of the suburban demographics (Dunham-Jones 2011, 17-18). Millennials and empty nesters are not looking for the typical single-family house surrounded by single-use suburban shopping centers. Rather, they are looking for multi-family housing, condos, and apartments surrounded by a mix of uses within walking distance. Since the early 2000’s,
there has been an increase in value per square foot of multi-family housing (condominiums, apartments, townhomes, etc.), while the value per square foot of many single-family homes has decreased (Parolek 2008, 4). Dunham-Jones writes a similar statement in her book, saying that the shift in demands within suburban communities will increase development and, more importantly, the redevelopment of failing suburban strip malls and shopping centers into urbanized areas that promote “higher density residential patterns, alternative energy systems, walkability, and increased access to public space.”(Dunham-Jones 2011, 20). She concludes by saying millennials and aging empty nesters, among other groups, are looking for areas that promote walkable, healthy communities that promote long-term sustainable growth. The southeast, known for it’s sprawling suburbs, is emerging as a center for suburban redevelopment.

Impacts
There are several factors influencing the redevelopment of suburban areas with the largest factors centering on social, economic, and health issues. An increasing amount of suburbanites desire to live in areas that are more socially connected, which typically means greater access to public space where a large amount of social interaction can occur. With frequently rising oil and gas prices, many suburban residents are also looking to cut costs by combining trips such as going to the grocery store and post office on the way home from work or by driving less all together. It is estimated that more dense developments with a greater mix of uses can lower external trips and reduce the overall vehicle miles traveled (VMT) by individuals (Frank et al 2007, 10) (Dunham-Jones 2011, 4, 10). Some residents are even locating near urbanized suburban centers that offer more options within a walkable area, thus becoming less automobile dependent. According to Dunham-Jones, an increasing amount of millennials and empty nesters desire to live in areas that are served by public transportation and/or offer alternative transportation options such as bicycle paths and pedestrian walkways (Dunham-Jones, 35).

Over the past several decades, studies have shown there is a positive correlation between the percentage of overweight and obese Americans and the time spent driving (Dunham-Jones 2011, 176). This is due, in part, to the existence of sprawled out, single use developments, which are guided by conventional zoning codes. Within the past several decades, obesity, especially among children, has become a growing problem in the United States. Since 1980, obesity rates among all children have more than doubled, increasing from 7% in 1980 to nearly 18% today (Ogden & Carroll, 2010). Obese children can have health risks that begin now and follow them well into adulthood. Early risks associated with childhood obesity include: type 2 diabetes, high blood pressure and cardiovascular disease as well as other social and psychological problems such as low self esteem and mental health (Freedman et al, 2007). Obese and overweight children have a much higher risk of staying or becoming obese in adulthood, which can lead to more health risks such as heart disease (National Institutes of Health).

According to the Trust for Public Land, residents are most likely to walk to places located within a 10-15 minute walk or within a quarter mile distance (Trust for Public Land). With busy lifestyles, many do not have the time to walk any further unless it is for work or exercise (Parolek 2008, 12). Studies have also shown that residents living in traditional neighborhood developments (TND) are more likely to exercise, thus leading to a lower body mass index, or BMI, than those living in sprawling suburban developments (Frank 2007, 76)

With the implementation of regulations that promote a mix of uses, such as form-based codes, cities, towns, and municipalities have the potential to create more urbanized communities where residents are healthier, more active, and less auto dependent than other sprawling subdivisions. Many cities and towns across the United States are creating design guidelines for suburban redevelopment projects. Places such as Charlotte, NC and Mount Pleasant, SC have used urban design standards to redevelop several suburban corridors into thriving urbanized centers.
Coleman Boulevard | Mt. Pleasant, SC

In what used to be a small village located across the Cooper River from Charleston, SC, the Town of Mt. Pleasant has grown into one of South Carolina’s largest cities. In order to promote sustainable long-term growth, the town partnered with a local private design and engineering firm to redevelop sections of Coleman Boulevard, which serves as the main corridor for Mt. Pleasant residents. Historically, the corridor has included several suburban style shopping centers and stand-alone businesses. But with the unprecedented growth in the area, the Town is looking to urbanize the corridor with a series of “districts” that will help transition the boulevard into a destination point rather than a thoroughfare to outlying islands and beaches.

Each district will include a theme as well as a mix of uses ranging from parkland and greenspace to residential, office and retail. Similar to specific transects within the smart growth manual, each district will also include specific density requirements, building heights, and pedestrian activity zones. Each district will be designed to increase development along Coleman Boulevard as well as encourage bicycle and pedestrian accessibility and mobility within the area. Along with a broad overall vision for the corridor, the plan also located specific areas for redevelopment along the boulevard. These areas include rundown automobile oriented shopping centers, isolated single-family homes, and stand-alone retail chains.

Source: Seamon Whiteside & Associates

City Park | Charlotte, NC

Located several miles southwest of downtown Charlotte on Tyvola Road, the 24,000 seat Charlotte Coliseum opened in 1988 and served as the home for the City’s NBA team, The Charlotte Hornets. The new coliseum served as the main focal point of the area along Tyvola Road and was surrounded by a sea of newly laid asphalt meant to adequately funnel fans in and out of the area. Like other growing suburbs in the 1980’s, the area around the Coliseum included low-density office parks, residential garden apartments, and a regional park and recreation area. Tyvola Road, a six-lane parkway built to increase the flow of automobile traffic, bisected the area and included office parks on both sides. But in 2002, the Hornet’s franchise owner opted to move the team to New Orleans. Although the city was awarded a new NBA franchise in 2004, the team chose to construct a new arena in downtown Charlotte, leaving the city with a large unused sporting venue.

In early 2006, the 154-acre coliseum site was purchased from the city by a private development company in hopes of transforming the site along with the surrounding area into a new urban center. Still under construction, the site once used as a single use will be redeveloped as a live, work, and play mixed-use area. The redevelopment project is slated to include 625,000 square feet of office space, 271,000 square feet of retail, 616 apartments, 91 townhomes, and 116 single-family homes. Also included is a large mix of greenspace and public space for social interaction all intended to ultimately bring life back to this dying suburban area.

Source: Charlotte Business Journal
Although form-based codes have risen in popularity over the past two decades as urbanized areas look for a solution to address physical form, the underlying ideas for these codes are much older. Ideas behind today’s form-based codes are rooted in historical plans that addressed the physical form by controlling both “land and building styles” (Talen 2009, 144) and ranged from urban blocks and neighborhood units to larger cities’ plans. Such plans include Clarence Perry’s Neighborhood Unit, Oglethorpe’s plan for Savannah, Penn’s plan for Philadelphia, the L’Enfant Plan, and Ebenezer Howard’s Garden Cities (Talen 2009, 144-151).

As U.S. cities began to increase in population during the 19th century, many zoning regulations were created to address the low living standards. Rather than addressing the physical form of cities, zoning regulations focused on the separation of uses and more specifically, the separation of residential areas to protect both the public from “noxious externalities” as well as the value of residential buildings (Talen 2009, 153-155). These conventional zoning regulations would soon become the standardized way to regulate different uses within the urban environment. Conventional zoning regulations typically address both minimal standards and restricted uses and have little association with the surrounding physical environment (Rangwala 2012, 35). Conventional zoning codes often leave little or no flexibility and can lead to a long development process. Recurring problems with conventional codes have led to the rise of Form-Based Codes.

Form-Based Codes first emerged as regulatory codes while forming the new urbanist community of Seaside, FL. Andres Duany, the lead designer for the project, wrote a set of codes to address the physical form through the regulation of building heights, setbacks, frontage, architectural standards and encroachments (Talen 2009, 155). Unlike conventional zoning regulations, which emphasize the land use with little regard to the finished result, form-based codes categorize structures in terms of specific densities allowed as well as defining public space through the use of height requirements, street frontage requirements, and various architectural standards (Rangwala 2012, 36). Codes, which are based on the idea that “nothing exists in isolation” (Duany & Talen 2002, 249), also provide a flexible framework for growth and adaptation as demand changes within the regional market, creating a mix of different uses within a relatively small area (Rangwala 2012, 38).
As defined by the Form-Based Codes Institute, Form-Based Codes are:

"a land development regulation that fosters predictable built results and a high-quality public realm by using physical form (rather than separation of uses) as the organizing principle for the code. A form-based code is a regulation, not a mere guideline, adopted into city, town, or county law....and is a powerful alternative to conventional zoning regulations."

Unlike conventional zoning regulations, form-based codes do not put an emphasis on use regulations for single land parcels with no regard to the surrounding physical context, but rather focus on creating a cohesive community or regional plan (Form-Based Code Institute). Codes serve as a strong regulating principle that focuses on how the physical form to help produce a specific place, with an emphasis on the public realm (Sitkowski 2006, 163-164). Where conventional zoning codes have encouraged single-use and sprawling development patterns, form-based codes are designed to promote the development and redevelopment of healthy, sustainable, and walkable communities with a diverse mix of uses, building types, and forms. In his book Form-Based Codes: A Guide for Planners, Urban Designers, Municipalities, and Developers, Daniel Parolek writes that form-based codes “are developed to empower communities by requiring better and smarter development patterns, improve environment, and fight effects of sprawl." (Parolek 2008, 4).

Typically, form-based code plans focus on the relationship between buildings and the public realm, addressing issues related to building form, massing, block scale, and street size, which ultimately affect the scale, character, and density of a specific place. Municipalities have the option of implementing codes in three ways: mandatory codes, optional codes, and floating zone codes. Mandatory codes are the most common and require development within area boundaries to follow the specified regulations. Optional codes provide an alternative to conventional zoning for developers within a specified area. Optional codes typically exist alongside conventional zoning regulations, although local government may offer incentives for private developers to choose form-based codes over conventional regulations. Floating-zone codes offer the greatest amount of flexibility since they are not tied to a specific land parcel. Like optional codes, floating-zoning codes exist alongside conventional zoning regulation and are not mandatory for developers (Rangwala 2012, 37-38). Floating-zoning codes are targeted towards large tracts of undeveloped and redeveloping land. Due to the limited land available for development and redevelopment within my study area, mandatory codes will be used to regulate the developing physical form within the downtown area.

Form-based codes typically have five specific elements: regulating plan, public standards, building standards, administration, and
definitions (FBCInstitute). The public and building standards are subdivided to address public and civic space, building form, frontage type standards, block standards, building types, and architectural standards (Parolek 2009, 28-64). Within the overarching form-based code principles, two specific types of codes have emerged as the most popular and widely used form of codes: Transect Zone planning and SmartCodes. Although not as common, other codes exist to specifically address buildings, streets, and street frontages (Parolek 2008, 25-26). Andres Duany of Duany Plater-Zyberk & Company writes that codes must differ based on the specific environment, should facilitate a variety of different, complex uses, and be flexible enough to allow for one environment to evolve into a denser environment (Duany & Talen 2002, 254). Individual cities should identify the environments that most closely relate to both the existing physical form as well as future density goals for each area. Cities, towns and municipalities can tailor both types of form-based codes to meet specific goals or address specific physical or environmental constraints.

Transect Zones

Often thought of as the most popular way to implement form-based codes, Transect zoning is a concept represented by a series of interconnected environments or zones (Parolek 2008, 18). The idea of transect zones was first thought of by Alexander Von Humboldt as a way to describe the different interconnected environments found in nature (SmartCode, VI). Using the “transect of nature” model coined by Von Humboldt, Andres Duany and his design firm adapted this idea to visually represent the built environment. According to Parolek, transect zones are a way to “organize on a continuum of intensity that ranges from rural to urban” (parolek 2008, 18). Like the transect of nature, transect zones within the built environment are meant to represent a series of interconnected zones that do not include hard edges between zones, but rather gradually transition from one zone to the next. See Image 5. Commonly referred as the Rural-to-Urban Transect, it includes six specific transect zones: most rural (T1), rural (T2), suburban (T3), general urban (T4), urban center (T5), and urban core (T6). The transect zoning method also includes several sub districts that incorporates special uses such as industrial, institutional, civic,
and transportation uses (Parolek 2008, 19). Zones are meant to evolve along the transect, with each zone having several unique and identifiable patterns that reflect desired density and building form (SmartCode vii). As with typical form-based code plans, transect zones should be modified based on specific locations. For example, the urban core of a large city like San Francisco includes large skyscrapers and very dense development. While a city such as Charleston, SC has an urban core that includes smaller, yet still dense, buildings with compact blocks protecting the city’s historic skyline. Different zones should also be designed to facilitate future growth and changes within it’s specific area. Specific zones should have the capability to transition and change in order to meet the needs of its communities.

Form-Based Code Standards
As mentioned earlier, Form-Based Codes typically include five specific elements. Under the code’s regulation plan, public and building standards provide a framework for creating walkable communities with a diverse mix of uses. Public and buildings standards are made up of six different standards: public and civic space, building form, frontage type, block, building type, and architectural standards. Each standard is place-based, meaning the location in which the codes are being implemented, as well as the specific transect zone, will dictate what standards are to be used. For example, the cities of Cincinnati, OH and Miami, FL have both implemented form-based codes based on the transect zoning method. But Cincinnati, which uses form-based code zones T3-T6 in only specific areas throughout the city, includes public and building standards that are specific to the urban form and layout of that particular city and, therefore, would not work in Miami. The city of Miami has taken a much broader approach by rezoning the entire city using transects T1-T6, as well as designating specific design districts. Like Cincinnati’s code, Miami’s transect zones are specific to the local environment and urban form, and thus not applicable anywhere else.

Although public and building standards are typically made up of the aforementioned six standards, this program will focus on only four standards: public and civic space, building form, block, and building types. These four standards make up the basic structure of form-based codes providing the regulatory framework needed to create a desired urban form.

Public Space: According to Parolek, there are two important types of public space: thoroughfares and civic space. Parolek writes that well thought out thoroughfares are essential to walkable, healthy communities (Parolek 2008, 28). Thoroughfares are arranged as an interconnected network with varying widths and design standards. Thoroughfares include boulevards, streets, roads, alleys, and bicycle pathways, and are typically assigned design standards based on where they are located within the transect model. Like other standards, thoroughfares are designed to meet the needs of pedestrian safety as well as vehicular flow through the designation of movement types, design speeds, road, and right of way (ROW) widths (Parolek 2008, 29-31). The design of civic space should also reflect specific transect zones, with large parks located in more rural and suburban zones and public squares and plazas located in an urban setting (parolek 2008, 36)

Building form: Parolek describes building form as the “primary role of defining the physical form of the built environment”. Building form standards regulate the placement and height of buildings within specific transect zones, which helps define the transition between public and private space (Parolek 2008, 44-45). Allowable uses are included within the standard to promote healthy mix of uses.

Block Standards: These standards are closely related to public space standards within each transect. Small blocks within more urbanized transect zones are critical in creating a walkable community. Typically, the smallest blocks are located in the most urbanized zones while larger, less linear blocks, are located in more rural locations.

Building Types: Unlike conventional zoning regulations where the use dictates the building type, building type standards within form-based codes are created first to address the building’s physical form followed by its function. These standards play a large role in creating a diverse mix of building uses and forms within each transect zone, which has the ability to improve the walkability and attractiveness of communities (Parolek 2008, 65-66)
Case study | Cincinnati, OH

The Cincinnati Form-Based Code was created in 2012 out of the realization that conventional zoning codes would not enable the city to meet its goals and objectives to create a network of interconnected and walkable communities throughout the city. The Code serves only a small portion of the overall Land Development Code and does not cover all land within the city limits. Like many cities using Form-Based Codes, Cincinnati chose strategic areas within the city to implement these codes. The city categorized areas as three types: natural places, walkable urban places, and drivable places. Within its Code manual, city planners chose to focus on areas labeled as walkable urban areas, ultimately leaving natural places, which do not exist for the most part within city limits, and drivable places to be regulated by other codes. While the primary goal of Cincinnati’s Form-Based Code is to address physical form, it also addresses specific uses allowed within each area as a secondary measure of code regulation.

Guided by city and neighborhood based principles such as reinforcing walkability patterns, removing barriers to revitalization, enhancing character, encouraging economic and social growth, and meeting the needs of residents, city planners and designers divided areas located within walkable urban places into three separate zones which, when viewed all-together, make up the Cincinnati Transect. The Cincinnati Transect is a location specific plan inspired by the transect zones created by Duaney Plater-Zyber. Because areas included within the Form-Based Code manual are largely developed, planners and designers chose to start with transect 3 (see image 5 on page 16), which is the first zone within the transect model to address urban neighborhoods. Zones are labeled from T3 to T6 and include several subsections to address different density, building height, and frontage type requirements.

The code manual is divided into nine sections, with sections 2-5 addressing transect zone definitions,

Case study | Miami, FL

The Miami 21 Code is the product of an initiative that started in 2005 to replace the conventional zoning ordinance for the city of Miami, FL. The original initiative was intended to usher the city into the 21st century with an up to date code that reflected the city’s goals of creating a healthier, sustainable, and more environmentally friendly Miami. The initiative consisted of several community stakeholders, city planners, government officials, and Duaney Plater-Zyberk as the private design consultant. After several hundred workshop and board meetings over a five year period, the Miami 21 Code was put into effect in May 2010. The main goals of the Miami 21 Code are to promote the health, safety, and mobility of its communities as well as conserve the surrounding environment, land and natural resources.

The Miami 21 Code is a citywide plan covering all land, water, structure and uses within the city limits and divides the entire city into specific transect zones labeled T1 through T6. The code also includes several civic zones (C) and districts (D). Like other Form-Based Codes, Miami 21 Code is unique in that it is location specific to the city’s built and natural
appropriate building types, frontage types, and supplemental design standards. Transect zones within the code are accompanied with a brief explanation of the zone, desired form, general, use and intent of the specific zone. The section addressing transect zones also includes a guide for allowable subzones, building types, building form, building placement, parking, encroachment and signage. Graphic representations as well as a table explaining acceptable uses accompany each code. Listed below each transect guide is a list of acceptable uses within each specific zone. Similar to the transect zone section of the code, buildings types include a visual and written description of the number of units allowed, frontage types, building size and massing, pedestrian access locations, and the size of private open space. The supplemental design standards are included to address specific issues related to non-conforming uses, terrain issues, and the location of historic properties.

Source: Cincinnati Form-Based Code

environment. Transect zones 1-3 are the least dense, emphasizing the natural environment over development. Transect zones 4-6 emphasize the built environment and require a certain level of density. Like other Form-Based Code manuals, the Miami 21 Initiative identified certain guiding principles at the city, neighborhood, and block level that were used when created with the Miami 21 Code. A few principles include: maintain visual character derived from its location, encourage infill redevelopment, include framework for alternative transpiration use, emphasize interconnected networks, and to distribute open space within communities and neighborhoods.

Code standards for the Miami 21 Code are divided into seven categories including: transect zone descriptions, code summary, building function related to uses, density, building function related to parking, frontages, and civic spaces. The transect zone description provides a detailed written description and graphic representation of what each zone should look like. The code summary provides a table that is broken down by transect zone and use types. Specific uses in each zone are categorized as allowable by right, allowable by warrant, allowable by exception, or not allowable. The table provides specific guidelines for acceptable uses such as lot occupation, building setback, frontage, and building height standards. The Code also provides illustrated definitions for each specific design guideline. The Code then goes into detail regarding building disposition, building configuration, parking standards, architectural standards, landscape standards, building function and density for each zone.

The Miami 21 Code is one of the most extensive and forward thinking examples of Form-Based Codes. The code written for the city provides a strategic framework to increase the walkability and long term sustainability of the entire city.

Source: Miami 21 Code
Section III

Suburban Redevelopment in Athens, GA

Like many towns across America, Athens, GA experienced an exodus of commercial retail from downtown storefronts to suburban strip malls located on the outer edges of the county. One of the major corridors that attracted several suburban strip malls and regional shopping centers was a 2-mile stretch along Atlanta Highway. During the late 1970’s and extending into the early 2000’s, this area along Atlanta Highway included a bustling mix of commercial and retail stores typically located in single use buildings that attracted consumers from all across the northeast Georgia region. In recent years, this area along Atlanta Highway has entered into a stage of decline with several businesses opting to move elsewhere.

What was once the Atlanta Highway Corridor’s main attraction, the Georgia Square Mall, now sits upon a sea of empty surface parking lots. Like many other shopping centers along Atlanta Highway, the mall has fallen into a stage of decline. With demographics shifting, increasing amounts of declining suburban shopping centers are redeveloping into vibrant urban centers for residents. The area surrounding the Georgia Square Mall is primed for redevelopment from a large inward focused building into an urbanized area with walkable blocks and a mix of uses in outwardly focused buildings. The redevelopment has the potential to create a walkable, sustainable, and aesthetically pleasing urban center. While Downtown Athens has long stopped catering towards local residents, shifting its focus towards attracting university students, the area surrounding the Georgia Square Mall has the potential to serve as an urbanized area of communities as well as other Athens residents.

In order to plan, design, and construct a project that meshes with the existing suburban form surrounding the site, the redevelopment process should include the use of form-based codes. Using the transect model to establish specific zones and codes within the development will result in creating a community center that will reflect an urbanized development while meeting the needs of residents. Based on existing and future development projects which include single-family residential units, multi-family housing, adjacent planned communities, and transit corridors, a series of form-based codes will need to be established to redevelop the Georgia Square Mall site into a thriving urban center.
History of Athens
Located in Clarke County, Athens, Georgia is 70 miles northwest of Atlanta. With an area of roughly 125 square miles, Clarke County is the smallest of the 159 counties within the state of Georgia. Due to its small size, citizens of Clarke County and the City of Athens passed a referendum in 1990 to consolidate the City and County Governments to form Athens-Clarke County (ACC) Unified Government (ACC Unified Government 2014).

The City of Athens was initially established as a site for the University of Georgia (UGA). UGA was chartered in 1785 and opened its doors in 1801 (ACC Unified Government 2014). As the University grew in population, the land surrounding it began to develop and in 1806 was incorporated as the Town of Athens. Given its strategic location along the Oconee River, the town quickly grew in size, attracting several textile mills and becoming a central railroad hub for the state of Georgia. By the early 1900’s, Athens was home to three regional railroad lines and several textile mills (Rice, Marion J. 2001). As the textile industry began to dwindle in the mid 1900’s, the University increasingly became the main driver of the local economy. As suburban development increased during the late 1970’s, many commercial retailers began to move to space located along the Atlanta Highway Corridor.
Rise & Fall of Atlanta Highway

Atlanta Highway is currently part of the U.S. Highway 78 Business Corridor. Historically, the Atlanta Highway served as part of U.S. Highway 78 travelling from Memphis, TN to Charleston, SC, before being rerouted through Oconee County after the construction of Highway 316 to the south and Highway 10 (commonly referred to as the Athens Perimeter Highway) see image 6. Prior to the rerouting of highway 78, Atlanta Highway as well as Broad Street in downtown Athens served as the main roadway for travellers going to and from Atlanta. The area known today as the Atlanta Highway Corridor was not developed until the mid to late 1970’s when construction of the Georgia Square Mall took place on a section of the Atlanta Highway located outside of the Athens Perimeter Highway, which was not constructed until after the mall was built (Lonnee, 2014).

Located roughly 5.5 miles from Downtown Athens near the western edge of Athens-Clarke County, the Georgia Square Mall serves as an enduring terminus for development along the Atlanta Highway Corridor. Prior to the construction of the Mall in 1979, this area was largely undeveloped. Until then, the closest development was located 2 miles east on Highway 78, towards downtown Athens and included several small strip malls, a hotel, and several car dealerships (Rowland, 2014). But with the completion of the Athens Perimeter Highway near the site of the mall in the late 1980’s, the surrounding area along Atlanta Highway began to develop rapidly.

By the mid 1990’s, this two mile stretch near the Mall along Atlanta Highway was already developed with several large suburban retail centers, chain restaurants, automobile repair shops, car dealerships, and a sea of parking lots to adequately accommodate each business (Lonnee, 2014). After the last large development was constructed in 1997, the Atlanta Highway Corridor had peaked in terms of attracting commercial development projects and regional consumers. The area surrounding the Georgia Square Mall included major retail tenants as well as several national chain stores and restaurants. By 2000, a shift in land use had occurred and projects were now planned for development across the Oconee County line near Highway 316. During the early 2000’s, a series of developments opened along Epps Bridge Road, which turns into Highway 316, anchored by major tenants such as Wal-Mart, Lowes Home Improvement, and a Kroger Grocery Store. In the early 2000’s, plans were approved to build a 450,000 square foot regional shopping center at the intersection of Highway 316 and the Athens Perimeter Highway (Bishop Company, 2015). The new shopping center is located closer to town and along major road corridors, making it easily accessible. The development was successful in attracting businesses that were previously located along the Atlanta Highway Corridor or inside the Georgia Square Mall.

The area near the mall along the Atlanta Highway has consistently declined over the past years and is now a shell of its former retail
identity. The mall, still home to several tenants, is surrounded by empty parking lots reminding us of its former success as a highly sought after regional consumer attraction. Several national chain retailers and restaurants have moved to other locations within the area leaving the spaces they once inhabited vacated. Shopping centers, once home to well-known retail chains, now include small shops and stores serving a secondary market.

**Georgia Square Mall**

Seen as the prime driver for development along the corridor in the 1980's and 90's, the Georgia Square Mall opened to much fan fare in 1979. Located on 72 acres at the intersection of Atlanta Highway and the Athens Perimeter Highway, the mall includes 500,215 square feet of retail space split between two levels and was one of the largest malls at the time to be built in a predominantly rural area (Georgia Square Mall, 2015). Before the mall opened, many commercial businesses in Athens were located downtown. The mall was the first major commercial project in the region and attracted several retail businesses from downtown due to the large amount of parking available and ease of access, both of which were difficult to find in downtown Athens. This move to the mall area, all but ended the retail era in downtown Athens (Sky City, 2008). The mall initially included a 4-movie cinema within the main structure and later built 5 more cinemas in a separate building behind the mall. While the 4 original theaters are gone, the cinema behind the main building continues to serve the Athens area as a dollar theatre. While the mall still includes its four original anchor tenants, the structure and outlying parcels have all experienced a rapid reduction in commercial cliental.

As trends continue to change, an increasing amount of suburban residents are searching for a more urbanized environment, The Georgia Square Mall area of the Atlanta Highway Corridor is primed for urban redevelopment. The area surrounding the mall includes primarily low-density office and residential uses with a few garden apartment complexes located on either end of the mall site. The mall backs up to several single-family residential neighborhoods where curvilinear streets and cul-de-sacs abound. Using a set of form based codes to drive the redevelopment of the Georgia Square Mall, this once thriving suburban area has to potential to re-emerge as a sustainable and walkable vibrant center.

**Adjacent Development**

Approved in 2004 by the mayor of Athens-Clarke County, Winslow Park is a 216 acre planned community that is to be built near the intersection of Dakota Drive and Atlanta Highway. The development is bounded by Atlanta Highway to the south, Dakota Drive to the west, Coggins Park to the east, and an inactive railroad line to the north. Winslow Park is projected to include a mixed-use
commercial center with a village green that would be accessible from Atlanta Highway. Residential apartments, townhomes, single-family homes are proposed towards the north of the project site. The development will provide on-street parking as well as a large 2-story parking facility near the commercial center. The development is planned to connect to Coggins Park, the office park located east of the site. The existing office park is located to the north of Atlanta Highway, just west of the Georgia Square Mall. To provide service by the Athens-Clarke County Bus system, the project will include several transit stops near the commercial center. As an agreement with the local government, the developer has also set aside 5 acres to the north of the site along the inactive railroad and potentially be the future site of a commuter rail facility.

Although the planned community was approved in 2004, only the first phase of construction was completed and the project has since been placed on hold. With horizontal infrastructure including streets, curb cuts, utility lines, and lighting in place, the project is still considered active and is slated to be completed at a later date (Winslow Park, 2007)

**Commuter Rail**

The Georgia Department of Transportation (GDOT) has conducted several studies on the feasibility of creating a commuter rail program between Atlanta and Athens, GA. The 72-mile trip would run on a mix of existing and new tracks. GDOT plans to use the tracks located less than a mile north of the Georgia Square Mall site, see image 6, which is owned by Norfolk Southern Corporation. Like the Winslow Park development, which has plans to benefit from the commuter rail line, the redevelopment plans for the mall site will include plans to facilitate potential growth generated from the rail line. This will be possible through the use of form based code transect zones which allows and encourages growth and transition zones (Georgia Department of Transportation factsheet, 2006).

**Location & Site Analysis**

The Georgia Square Mall is located along Atlanta Highway near the western edge of Athens-Clarke County. The mall is located on four land parcels totaling 72 acres. The property is bounded by Atlanta Highway to the south, Huntington Road to the east, Marilyn Farmer Way to the west, and a residential community to the north. The mall includes a 500,215 square foot 2-story building which is home to several chain retail stores as well as a food court. A second building is located on an out parcel behind the main buildings. This building is 15,576 square feet and is home to the Georgia Square Value Cinemas, a dollar theatre. The remaining 60 acres of the site are covered with asphalt surface parking lots and a four-lane service road located around the perimeter of the property. Six adjacent land parcels, totaling 9 acres, are located between the mall and Atlanta Highway. The outlying parcels include one building each surrounding by parking lots. The Georgia Square Mall includes two entrances on Atlanta Highway and two entrances on Huntington Road. The Athens Perimeter Highway also includes a designated lane on the exit ramp to direct vehicles from the perimeter to the mall via Huntington Road.

The Mall is located within a transition area between major land uses. The area to the north and east, between the mall and the perimeter, is mainly single family residential communities while the area south of the mall, along Atlanta Highway, includes several commercial shopping centers and chain retail stores. The area west of the mall includes a mix of multi-family garden apartment communities and office buildings. Ben Burton Park, the nearest park to the mall, is located roughly 2 miles northeast of the site, see image 9. The park includes several walking and jogging trails as well as picnic areas and wildlife preserves. The Bogart Sports Complex is located 4 miles west of the mall on Atlanta Highway. The complex is a 33-acre park that includes six lighted baseball and softball fields as well as two playgrounds, picnic areas, and a jogging trail. Although both parks are located within a relatively close driving distance, they are both too far away for residents to safely walk. There are two major commercial shopping centers within a two mile radius of the mall. The first, Perimeter Square, has 321,549 gross leasable areas and has experienced a decline in retail tenants. Recently, the shopping center has become home to a Goodwill store and donation center.
as well as a regional church. The second shopping center, which was described above, is located two miles from the mall on Epps Bridge Road.

Because the site and outlying parcels are already developed, there is a minimal grade differentiation from the highest to the lowest point on the site. The mall site is serviced hourly by Athens-Clarke County public transportation system route 20, which travels along the mall service road before heading towards downtown Athens on Atlanta Highway. The area is currently served by Athens-Clarke County Public Utilities for water, wastewater, and waste and is served by Georgia Power for electric utilities.

Physical Form

Images 10 - 13 shows the relationship between the mall and the surrounding physical form. Images 10 and 11 represent the physical form within a quarter and half mile walking distance of the mall site. Image 12 represents a one mile distance, which serves as a transition period where walking becomes a less viable mode of transit. Image 13 represents the physical form within a two-mile area of the site. Within the quarter and half-mile zone, the mall is the dominating form. Because the mall is located near the center of a 72-acre parcel, the quarter mile buffer located around the mall consists mostly of the mall parcel and provides little information about the physical form surrounding the site. Other outlying land parcels within a quarter mile buffer consist of several single-family residences, garden apartments, retail space, gas stations, and office buildings see image 10. It is not until a half-mile, mile, and two-mile buffers

Image 9: Half-mile, mile, & two mile buffer and park locator map
are constructed around the mall site that an understanding of the interconnected physical form, or lack thereof, takes place. Image 13 shows the mall is isolated by a large buffer consisting of void space which serves as a barrier between the shopping center and the surrounding physical form. Although the surrounding form was built after the mall’s construction, there is very little interconnectivity flowing between the mall and the surrounding shopping centers and residential neighborhoods.

Demographics
A total of 8,889 employees work within a two-mile radius of the Georgia Square Mall. Roughly half, or 4,248, of those employees work within a mile, while 1,310 employees work within a half mile of the mall (BA0). Because the area is surrounded by suburban shopping centers, roughly 50% of employees within a two mile area work in the retail trade industry (food stores, apparel, auto dealers, and gas stations), while 40% of employees work in the service industry (hotels, automotive, health, legal, and educational). The remaining 10% are employed by the finance, insurance, and real estate industry (ESRI Business Analyst, 2015).

Within a two mile radius of the mall, the largest population groups include young adults, ranging from 20 to 29 years of age, as well as empty nesters and retirees, ranging from 50 to 69 years of age. The population living within a half-mile radius of the mall increased at an annual rate of 2.63% from 2000 to 2010, growing from 533 to 691 people. In 2010, the 55-59 year age group made up roughly 10% of the total population living within a half mile of the mall. The 60 to 64 year age group consisted of 9% of the total population while the 25 to 29 year age group includes 8% of the total population. From 2000 to 2010, the population living within a mile of the mall increased at an annual rate of 3.08%, growing from 2,634 to 3,567 people. In 2010, the age group ranging from 20 to 24 years made up 11% of the total population while the 25 to 29 year age group made up 9% of the population within the mile radius. The 30 to 34 and 55 to 59 year age groups both consisted of roughly 8% of the total population living within a mile of the mall site. The population living within a two mile radius of the mall increased at an
annual rate of 3.38% from 2000 to 2010, growing from 9,050 to 12,616 people. In 2010, the 20 to 24 year age group made up 16.5% of the total population living within a 2 mile radius while the 25 to 29 and 30 to 34 year age groups consisted of 9.5% and 7% of the same population (ESRI Business Analyst, 2015).

From 2000 to 2010, the number of housing units within a half-mile of the mall increased at an annual rate of 4.59%, growing from 279 in 2000 to 430 on 2010. The number of housing units within a mile radius increased at a similar annual rate, 4.69%, growing from 1,204 units in 2000 to 1,904 units in 2010. Following the same trend, the number of housing units within a two mile area of the mall increased by 4.62% a year, growing from 3,944 units in 2000 to 6,198 units in 2010. Of the 430 housing units within a half-mile of the mall, 385 units are occupied, while 1,746 of the 1,904 units within a mile radius and 5,733 of the 6,198 units within a two mile radius are occupied. In 2010, 35% of households within a half-mile radius included one person while 65% of households included two or more people, with only 21% of those units having children. The household numbers for units within a mile radius are almost identical to those within a half mile radius of the mall while units within a two mile radius included one less person households and a slightly greater percentage of two person households and households with children (ESRI Business Analyst, 2015).
In 2000, Athens-Clarke County updated their zoning regulations. These new development regulations are a combination of traditional zoning (use regulation and FAR) and form-based code standards (design districts, lot coverage, building heights, and building placement) (Lonnee, 2014). The development regulations allow for a wide mix of permitted uses, which often overlap between specific zones. For example, dwellings above buildings are allowed in both RM: Mixed-Density Residential Districts and C-G: General Commercial districts. The regulations also include several “special district overlays”, which, like other traditional regulations, promote the health, safety, and welfare of residents through the permitting of specific uses within the district. Unlike traditional codes, these districts also promote the reduction of urban sprawl, protection of specific characteristics, and development of communities to conserve economic and natural resources including several design guidelines to promote the protection of existing visual and architectural character of the specified district. Guidelines typically include allowable architectural styles, building height, tree canopy cover, primary entry, minimum lot coverage (Code of Ordinances, 1993). Also within the regulations is a detailed list of site design standards for the Commercial Downtown District. Much like the structure of form-based codes, this section includes site and building design standards addressing sidewalk placement, allowable exterior building materials, building transparency, maximum setbacks and minimum wall frontage. These standards are accompanied by diagrams and tables to visually represent the district design standards. Other sections in the ordinance address street right-of-way dedications, off-street parking, and subdivision regulations.

The Georgia Square Mall site and outlying parcels along Atlanta Highway are currently zoned as C-G: General Commercial District, see image 14. ACC Zoning Ordinance includes uses that are either permitted outright (P), subject to approval under special use (S), or prohibited (N) for the C-G General zone. The code may also include more strict guidelines for uses permitted outright or approved under a special use, which are marked as l(#), with each number representing a different, more detailed use restriction. For example, In C-G General districts, single-family dwellings are labeled as “S.L(11), where “S” shows that the use may be approved as a special use and “L(11)” shows that the use must follow the general regulations found under RS-5 zoning regulations. Listed below are the uses permitted outright, allowed by special use, or not permitted within the C-G General district:

Permitted: dwellings above buildings, personal care homes groups, personal care home congregates, community gardens, home occupation, hostels, hotels, motels, bed and breakfast, retail sales & service, convenience store, theaters (less than 1,000 seats), restaurant or bar, drive through facility, professional service and office, quick vehicle servicing, vehicle repair, auto & RV sales, laundry facilities, indoor recreation, administrative or research facilities, broadcasting or production studios, temporary uses, temporary special events, printing, bakeries, bottling plants, wholesale sales, distribution center, self-storage facility, construction materials sales, kennels, veterinary clinics, basic utilities, community service, parks and open area, churches, business & trade schools, day care, colleges, nursing homes, hospital, medical center, cemeteries, mortuaries, and drug rehabilitation centers.

Special Use: single-family dwellings, accessory dwelling units, personal car homes for individuals and families, boarding house, dormitory, halfway house, commercial outdoor recreation, commercial parking structures or lots, major event entertainment, and fraternity or sorority housing.

Not Permitted: agriculture, duplexes, class a manufactured homes, class b manufactured homes, sales of products grown on site, equestrian faculties, manufacture of non-odiferous foods, feed lots, slaughterhouses, heavy manufacturing, wholesale nurseries, outdoor storage, wholesale storage and distribution, junk yard, auto wrecking, transfer stations, sanitary landfills, landfills, commercial incinerators, asphalt plants, mines, mining, surface mining, and quarries.

Along with specified uses, the code also includes general regulations for C-G General districts. The table includes standards regulating the
residential density, minimum lot area, width, FAR (floor area ratio), and building height. Specific regulations are listed below:

Maximum residential density: 24 bdrms per acre, minimum lot area: 2,500 square feet, minimum lot width: 50 feet, minimum lot depth: 50 feet, minimum front and side yard: none, minimum yard when abutting residential zone: 10 feet, maximum FAR: 1.5, maximum lot coverage of 80%, minimum landscaped area of 20%, and maximum building height of 65 feet (Code of ordinances, 1993).

While the current development regulations set by Athens-Clarke County provides several options to promote a diverse mix of uses within a specific area as well as a well thought out and detailed guide for each land use type, the regulation’s prescriptive measures and separation by specific land use are still structured very much like traditional zoning codes. Unless the area is within a specific design or historic district, which focuses on both preserving the visual and architecture by promoting healthy and sustainable development through the use detailed design guidelines, the current codes cannot regulate how each individual parcel within a specific zone will visually connect with the surrounding built environment. In order to place more emphasis on reducing sprawl, protecting specific characteristics, and developing communities that conserve economic and natural resources, more districts should be designated throughout Athens-Clarke County. Newly created districts should focus on addressing the interaction of public and private space within the built environment while creating a visually pleasing and architecturally cohesive area by providing district specific design and building standards.

**Image 14: Current zoning map of the Atlanta Highway Corridor**
The Georgia Square Mall will be redeveloped using a floating overlay district, which will include the use of form-based codes as well as standards used within the existing ACC development ordinance. Instead of zoning the site as a general commercial district, which refers to the use of the land, the site will be rezoned as an urban center and compact neighborhood. The rezoning will correlate with the physical form that will occur through the redevelopment project. Like other designated districts in Athens-Clarke County, the mall redevelopment district will include specific site and building design standards as it relates to public space, building form, block standards, and building types. The 72 acre site will be divided into three zones using the transect zone model.

Because the historic downtown district serves as the main urban center for the City of Athens, transect zones assigned for the mall redevelopment will be established using the downtown center as an example of a T6: Urban Core Zone. The redevelopment site will include three of the six transect zones, ranging from T3 to T5. The T5 zone will serve as the urban center of the district and will include several one and two story single and multi-family residential units, which will further connect the site with the surrounding single-family suburban form. The T5 zone will be located along Atlanta Highway as well as towards the center of the mall site while the T4 and T3 zones will serve as a seamless transition between the existing physical form and the new urbanized center, see image 16.

Public Space Standards
The public design standards for the mall redevelopment will include a mix of main commercial thoroughfares, secondary commercial streets, neighborhood streets, and alleyways. Bicycle lanes will also be present on main thoroughfares and secondary commercial streets throughout the development. Main commercial streets will be located within the urban core zone and will include a 90-foot right of way. The street will be 50 feet in width and will include 5-foot wide bicycle lanes and street parking on both sides. The remaining 40 feet, 20 feet on each side of the street, is designated for medium sized street trees and 15 foot wide sidewalks, which will include outdoor seating, see table 1 & diagram 1.

Neighborhood streets are located throughout the compact neighborhood zone (T3). The right of way for neighborhood streets will be 50 feet in width. The street will be 30 feet wide and will include street parking located on the right side of the street. The remaining 20 feet, 10 feet on each side of the street, will include 5-foot wide sidewalks and landscaping strips with mature street trees, see table 1 & diagram 3.

Alleyways are located throughout both the urban core (T5) and general urban (T4) zones. Alleyways will serve as one-way streets with an unmarked bicycle lane on the right side. Alleyways will be 15 feet wide and will include 5-foot sidewalks on either side, see table 1, diagram 4, & diagram 5.

Block Standards
The development will include block form standards, which will increase the walkability while maintaining traditional urban building form found elsewhere in the county, specifically within the historic downtown district. Urban center (T5) and general urban (T4) mixed use zones will include block
### Table I: Public Space Standards

<table>
<thead>
<tr>
<th>Thoroughfare Type</th>
<th>Commercial Main Street</th>
<th>Streets (secondary)</th>
<th>Streets (tertiary)</th>
<th>Alley</th>
<th>Bicycle Lane</th>
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</thead>
<tbody>
<tr>
<td>Transect Zone</td>
<td>5</td>
<td>5.4</td>
<td>3</td>
<td>5.4</td>
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<td>30'</td>
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<td>5'</td>
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<td>Yield</td>
<td>Yield</td>
<td>Slow</td>
<td>Yield</td>
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<td>Vehicular Speed</td>
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<td>25</td>
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<tr>
<td>Ped Crossing Time</td>
<td></td>
<td></td>
<td></td>
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<tr>
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<tr>
<td>Parking Lanes</td>
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<tr>
<td>Walkway Type</td>
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<td>10’ walkway</td>
<td>5’ walkway</td>
<td>5’</td>
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<tr>
<td>Planter Type</td>
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<tr>
<td><strong>Landscape Type</strong></td>
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<td>medium urban trees 30” 0.c., low lying plans</td>
<td>medium large tree 35’ o.c., lw lying plants</td>
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</tr>
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</table>

### Table II: Block Standards

<table>
<thead>
<tr>
<th>Transect Zone</th>
<th>T5</th>
<th>T4</th>
<th>T3</th>
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<tbody>
<tr>
<td>Regulations</td>
<td>Commercial Mix-use</td>
<td>Mixed-Use</td>
<td>Residential</td>
</tr>
<tr>
<td>Maximum Length (Feet)</td>
<td>300’</td>
<td>300’</td>
<td>400’</td>
</tr>
<tr>
<td>Maximum Perimeter (Feet)</td>
<td>1200’</td>
<td>1200’</td>
<td>1400’</td>
</tr>
</tbody>
</table>

---

**Diagram 1**: T5 public streetscape  
**Diagram 2**: T4 public streetscape  
**Diagram 3**: T3 public streetscape  
**Diagram 4**: T5 alley streetscape  
**Diagram 5**: T4 alley streetscape
standards with a maximum length of 300 feet and maximum total perimeter of 1200 feet (see table 2). General urban (T4) residential and compact neighborhood zones will include block standards with a maximum length of 400 feet. General urban residential zones will have a maximum perimeter of 1400 feet, while compact neighborhood zones will have a maximum perimeter of 1800 feet, see table 2.

**Block Standards**
As mentioned in section III, building form helps to define both the physical form and transition between public and private space within a specific area. Building form standards include lot size, building placement, building types, maximum height, ground floor height, and ground finished floor elevation. While the building form will vary based on zone location, the overall form will create space that mirrors a vibrant urban center.

**Building Form Standards**
The building form located within the urban center zone will resemble the form found in the historic downtown district. Lot sizes range from 40 to 150 feet in width and must be at least 100 feet in length. The building must be constructed at the right of way and cover 100 percent of the lot area. Building form within the urban center zone should include attached structures, ranging from three to five stories in height. The ground floor must be a minimum of 15 feet in height while the ground finished floor elevation may be no more than 1 or one foot above the sidewalk, see table 3, diagram 7, & diagram 11.

The building form for general urban residential zones (T4) will serve as a transition between the urban and compact neighborhood zones. Lot sizes must be a maximum of 40 feet in width and 80 feet in length. Buildings must have a front setback between 5 and 15 feet from the property line, side street setback between 5 and 10 feet from the side property line, side (non-street) setback between 5 and 15 feet from the side property line, and a rear setback of at least 25 feet from the rear property line. The building will include detached structures, which will serve as single-family units. Buildings will be a maximum of two stories in height, must cover a maximum of 35 percent of the lot area, and include a ground finished floor elevation that is a minimum of 2 feet above the sidewalk, see table 3, diagram 9, & diagram 13.

**Building Type Standards**
Like building form, building type standards help to create a district with a distinct visual and architectural style. The mall redevelopment will include detached single-family houses,
## Table III: Building Form Standards

<table>
<thead>
<tr>
<th>Transect Zone</th>
<th>Regulations</th>
<th>Building Placement (property Line)</th>
<th>Front</th>
<th>Side Street</th>
<th>Rear</th>
<th>Lot Size</th>
<th>Building Form</th>
<th>Off-Street Parking</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Commercial Mix-use</td>
<td>Build at ROW</td>
<td>0’</td>
<td>0’</td>
<td>0’</td>
<td>40’ Min: 150’ Max.</td>
<td>Attached</td>
<td>residential</td>
</tr>
<tr>
<td></td>
<td>Mixed-Use</td>
<td>Build at ROW</td>
<td>0’</td>
<td>0’</td>
<td>0’</td>
<td>40’ Min: 100’ Max.</td>
<td>Attached</td>
<td>1 per Unit</td>
</tr>
<tr>
<td></td>
<td>Residential</td>
<td>Small Front Setbacks</td>
<td>5’ Min: 15’ Max.</td>
<td>10’ Min: 15’ Max.</td>
<td>25’ Min.</td>
<td>40’ Max.</td>
<td>Attached &amp; Detached</td>
<td>1 per Unit Min.</td>
</tr>
<tr>
<td></td>
<td>Residential</td>
<td>Small Front Setbacks</td>
<td>5’ Min: 10’ Max.</td>
<td>15’ Min: 15’ Max.</td>
<td>30’ Min.</td>
<td>40’ Min: 50’ Max.</td>
<td>Detached</td>
<td>1 per Unit Min.</td>
</tr>
</tbody>
</table>

### Diagrams:

- **Diagram 6:** T5 building form
- **Diagram 7:** T4 building form
- **Diagram 8:** T4 residential building form
- **Diagram 9:** T3 building form
- **Diagram 10:** T5 block form
- **Diagram 11:** T4 MU block form
- **Diagram 12:** T4 residential block form
- **Diagram 13:** T3 block form
detached single-family homes located in the general urban residential (T4) and compact neighborhood (T3) must be one to two stories in height. The main access from entry must be located along the front street. Porches covering the ground floor only must also be present along the front street. Access points to the porch from the street may be located on the front or side of the porch.

### Table IV: Building Type Standards

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Height</th>
<th>Frontage Type</th>
<th>Pedestrian Access</th>
<th>Transect Zones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached House: Single Family</td>
<td>1-2 Stories</td>
<td>Porch: Ground Floor</td>
<td>Main access from entry along front street</td>
<td>T3, T4</td>
</tr>
<tr>
<td>Duplex</td>
<td>1-2 Stories</td>
<td>Porch: Ground Floor</td>
<td>Main access by individual entry along front street</td>
<td>T4</td>
</tr>
<tr>
<td>Rowhouse</td>
<td>2-3 Stories</td>
<td>Stoop</td>
<td>Main access from entry along front street</td>
<td>T4</td>
</tr>
<tr>
<td>Multi-Family Apartments</td>
<td>2-5 Stories</td>
<td>Porch, Stoop</td>
<td>Main access by common entry along front street; Access to individual units by interior common space</td>
<td>T4, T5</td>
</tr>
<tr>
<td>Low-rise Mixed-Use</td>
<td>2-3 Stories</td>
<td>Shopfront, Terrace</td>
<td>Ground-floor units have main individual access along front street; Upper-floor units have main access by common entry along front street</td>
<td>T4, T5</td>
</tr>
<tr>
<td>Mid-Rise Mixed-Use</td>
<td>3-5 Stories</td>
<td>Shopfront, Terrace</td>
<td>Ground-floor units have main individual access along front street; Upper-floor units have main access by common entry along front street</td>
<td>T5</td>
</tr>
</tbody>
</table>

Source: http://www.fullcircleathens.com
Duplex

Duplexes located in the general urban residential zone (T4) must be one to two stories in height. The main access from entry from one entrance point must also be located along the front street. One access from entry may be located along the side for the duplex to resemble a single-family structure. Like single-family homes, duplexes must also include a porch covering the ground floor along the front street. Access points to the porch from the street may be located on the front or side of the porch.

Rowhouse

Rowhomes are attached structures located within the general urban residential zone (T4). Rowhomes must be two to three stories in height. The main access from entry must be located along the front street. Duplexes must include a ground finished floor elevation above the sidewalk, as specified in the building form standards, as well as a stoop, which access from entry along the front street.

Multi-Family Apartments

Multi-family apartments located in the urban center (T5), general urban mixed use and residential (T4) zones, must be two to five stories in height. A single main access from entry, shared by all residents, must be located along the front street. Access to individual units, including ground floor units, must be located on the interior of the building. Apartments must include a ground finished floor elevation above the sidewalk, as specified in the building form standards, as well as a stoop, which access from entry along the front street.

Low Rise Mixed-Use

Low-rise mixed-use buildings located within the urban center (T5) and general urban mixed use (T4) zones, must be two to three stories in height. Ground floor units must have an individual access from entry as well as an approved street level shop front or terrace. Units located on the upper floor must have a single access from entry that is separate from ground unit level entry points. Access to individual upper-level units must be located on the interior of the building.

Mid Rise Mixed-Use

Mid-rise mixed-use buildings located within the urban center (T5) zone must be three to five stories in height. Ground floor units must have an individual access from entry as well as an approved street level shop front or terrace. Units located on the upper floor must have a single access from entry that is separate from ground unit level entry points. Access to individual upper-level units must be located on the interior of the building.
Using the form-based codes described in tables 1-3 the Georgia Square Mall will be redeveloped into a vibrant urban center with a cohesive visual form and wide mix of uses. The mall site will transition from an 80 acre site with eight buildings and 60 acres of surface parking, into mixed-use districts with 21 buildings, four multi-story parking decks, and 165 residential units, see image 16.

The urban center zone (T5) will be located along the Atlanta Highway Corridor and will extend four blocks in into the redevelopment, forming the community and social center along with the adjacent greenspace. The greenspace, as well as other natural areas placed throughout the development, will serve as a much needed activity space for the area. General urban mixed-use zones (T4) will be located surrounding the urban center zone along Huntington Road to the east as well as several garden apartments and small businesses to the west. General urban residential (T4) and compact neighborhood (T3) zones will be located towards the rear of the site along Huntington Road. The mix of attached and detached family residences will serve as a transition between the urban center and the surrounding single-family neighborhoods, see image 17.

Currently, the site includes 80 acres of land area with 60 acres used for surface level parking. The 500,000 square foot mall is located towards the center of the site and is surrounded by parking lots, which serve as a barrier to the surrounding physical form, see image 18. The redevelopment will reduce the amount of surface level parking by using several multi-story parking decks, which will allow for denser development to take place on the remaining site area. Instead of concentrating development within one building, the redevelopment will focus on creating a populated area with a mix of uses in different buildings spread throughout the site. The redevelopment will focus on connecting with the surrounding physical form by building along the edges of the site instead of concentrating development towards the center, see image 19.

The existing site circulation relies heavily on Atlanta Highway and Huntington Road, both of which are located adjacent to the site. There is only one road that services the interior of the site.
This road circulates around the perimeter of the site making it difficult to efficiently travel the site from end to end. The existing site also includes a large number of parking isles to connect commuters to the building, see image 20, creating a greater circulation barrier. The proposed development will remove several existing barriers and improve the overall level of circulation within the site boundaries by including several main corridors located within the urban center zone as well as a series of secondary and tertiary streets located within all three zones. The circulation pattern also connects with the surrounded physical form creating a greater amount of accessibility between the site and the surrounding area. Three main commercial streets are located within the redevelopment. One street connects the urban center with Atlanta Highway while the two remaining streets provide access through the site from Huntington Road. The redevelopment will also include several secondary streets, tertiary streets, and one-way alleys that are meant to provide circulation throughout the site for consumers and residents. The improved circulation also provides a well-connected physical form, which will increase the walkability of the site, see image 21.

Along with poor circulation, the existing site includes a minimal amount of entrance points. Two entrances are located along Atlanta Highway, while two other entrances are located along Huntington Road, see image 22. The redevelopment will keep the existing four entrance points, while increasing accessibility by creating several main, secondary, and tertiary entrances along the western and eastern edges of the site, see image 23.

The redevelopment of the mall site will increase the connectivity between the mall site and the surrounding environment. A greater amount of access points and improved circulation, as well as a mix of uses located in buildings spread throughout the site, will provide the framework for a walkable vibrant urban center in what used to be a disconnected suburban development.
Main Entrances
Secondary Entrances
Tertiary Entrances
Alley Entrances

Main Circulation
Secondary Streets
Tertiary Streets
Alley

Image 20: Current circulation
Image 21: Proposed circulation

Image 22: Current site entrances
Image 23: Proposed site entrances
Sources

Athens-Clarke County Planning Department


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