# CHAMBLEE

















Prepared for the City of Chamblee, Georgia

# ADOPTED

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# **Executive Summary**

The Chamblee Sustainability Plan is a single document which provides a vision for the future sustainable development of Chamblee. Residents, organizations, and the City of Chamblee identified the need for such a plan that identifies seven priority sustainability issues for the City.

Chamblee represents the next step in the maturation of sustainability in metro Atlanta. Small cities with transit, wise land use policies, and an engaged population will accommodate large amounts of the region's growth. With its industrial past, Chamblee has substantial redevelopment potential for reducing pressure on green fields. The key to Chamblee's sustainable redevelopment is evolving its urban development approach to include initiatives to address regional and national issues. These issues include:

- Land Use:
- Transportation
- Materials Management;
- Energy;
- Water;
- Food: and
- Governance & Outreach.

# Land Use

The plan focuses on two land use subtopics – urban heat islands and urban tree canopy. While these subtopics are linked, they have diverse solutions and so are addressed distinctly. The

related risks of urban heat exacerbate extreme heat-related stressors as well as air quality risks – both of which affect Chamblee's most vulnerable populations (elderly, children, and residents with low income) compared to other populations. The urban heat island is a metro-scale issue; however, local mitigating actions do have local and regional benefits. Contributing features to urban heat island in Chamblee include pavement, parking areas, impervious areas, and rooftops. Mitigating the influence of these features on urban heat island will require multiple strategies, some of which Chamblee is already implementing. These strategies include tree canopy tracking, No Net Loss of Trees Policy, Front Yard Tree Program, Tree Preservation Ordinance, and a cool roof strategy.

The urban tree canopy provides ecological services to the City of Chamblee, such as urban heat island mitigation, air quality improvement, stormwater management, and habitat. In addition, the canopy provides direct benefits to residents through attenuating noise pollution, providing traffic calming services, and general aesthetics.

# Transportation

Transportation is a key component of sustainability. Vehicle emissions are one of many contributers of climate change, and reducing emissions through increasing the accessibility to other modes of transportation is one way to increase environmental sustainability. One of the goals of the City's Mobility Plan is to "contribute to fiscal responsibility and sustainability." Each project in the plan was evaluated on how it met environmental sustainability principles, particularly how the effects that new impervious surfaces have on stormwater runoff and quality and the effects of vehicle-based transportation has on air quality. In order to fulfill sustainability, transportation projects sought to minimize the amount of new asphalt and decrease vehicle miles where possible. Projects recommended by the comprehensive plan complement those proposed by the Mobility Plan, further increasing sidewalks, trails, and new street connections.

# Materials Management

Nearly all of a community's activities can contribute to the waste stream. Due to Georgia's abundant landfill space and relatively low tipping fees, it's difficult to make the business case for sustainable waste management. The City of Chamblee provides roll-off recycling carts for single-family homes, offices, multi-family residential, restaurants and other commercial establishments. Although

recycling services are widely available, there is a lack of education resources on recycling practices. Ongoing education is critical to the success of programs, despite the general understanding of processes and benefits of reducing waste. Recommendations for Chamblee to increase sustainable waste management include:

- · Multi-family recycling code;
- Community recycling education program; and
- Construction and demolition waste reduction.

# Energy

Chamblee's electricity is sourced from Georgia Power, so it is recommended that municipalization be considered at renewal of the franchise agreement. As of 2019, 64% of Georgia's electricity generation comes from carbon-based fuels – all of which contribute to global climate change. However, there are significant measures with immediate impact. Chamblee's leadership in energy sustainability can be expanded with three initiatives:

- Improved energy codes;
- Benchmarking; and
- · Clean energy goal.

## Water

Chamblee is in the headwaters of the Chattahoochee River and split by two subwatersheds: Nancy Creek and the North Fork of Peachtree Creek. Due to the location at the headwaters, the City has a responsibility to make sure that the water in those streams is as clean and healthy as possible for downstream neighbors, while also maintaining manageable volumes and discharge rates. Additionally, the metro Atlanta region, of which Chamblee is a part, is a waterconstrained area, further highlighting the need for alignment with stormwater management standards. Recommendations for Chamblee to sustainably manage water include:

- Adoption of a regional watershed-based planning strategy;
- Set green infrastructure goals beyond state requirements;
- Establish green infrastructure maintenance and inspection protocols;
- Promote water harvesting for reuse; and
- Benchmark and audit municipal and commercial buildings.

#### Food

Urban agriculture policy in Chamblee would support the community vision by bringing community together through the desire and need for access to healthy food. In addition to generating food, urban agriculture provides economic and health benefits and creates a sense of community. It is recommended that Chamblee adopt urban agriculture typologies in appropriate zoning districts.

# Governance & Outreach

An internal staff team responsible for sustainability initiatives is recommended with the task to:

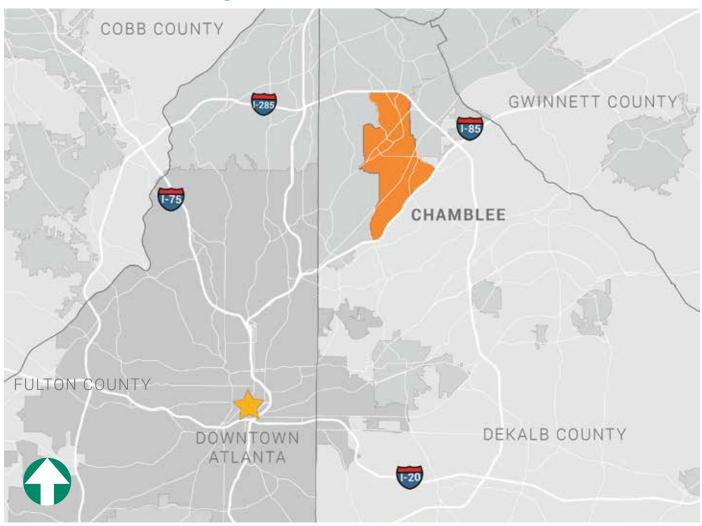
- Empower organizations working on sustainability issues;
- Provide continuity for ongoing efforts;
- Facilitate professional input for municipal initiatives; and
- Raise awareness among citizens.

Additionally, it is recommended that Chamblee strive toward a Director of Sustainability position when the civic infrastructure has developed to the point that major initiatives are being undertaken.

# **About Chamblee**

Located just 14 miles from downtown Atlanta, in northern DeKalb County, Chamblee is a vibrant city with a diverse community and international flair. Chamblee is bordered by Dunwoody to the north, Doraville to the east, and Brookhaven to the west. Two major interstate highways that border the city limits, I-285 to the north and I-85 to the southeast, provide easy access to and from Chamblee. For commuters, roadway access is complemented by a MARTA rail station and ten MARTA and GRTA bus routes. Chamblee is also home to DeKalb-Peachtree Airport (PDK), the second busiest airport in the state.

#### Location of Chamblee, Georgia





# History

Originally called "Roswell Junction," Chamblee began as a small rail town and was formally incorporated in 1908. During World War I, the city was home to Camp Gordon, which served around 40,000 servicemen and ushered in a building boom. After World War II, the General Motors plant in neighboring Doraville brought growth in the city's blue-collar industries, bringing in new residents. By the 1980s, much of Chamblee's industrial base had downsized, but experienced growth in its immigrant and refugee population partially due to its stock of affordable housing. During the early 2000s, Downtown Chamblee began to experience significant commercial and residential development, all while maintaining its vintage buildings and architecture. Through multiple annexations during the 2010s, Chamblee has grown to more than 7 square miles with more than 29,000 residents.

Sources: City of Chamblee website; Georgia Place-Names: Their History and Origins

# One Chamblee Comprehensive Plan

The One Chamblee Comprehensive Plan, adopted in 2019, envisions the long-term future of the City of Chamblee and outlines the steps to fulfill it. The plan's vision statement is as follows:

"The City of Chamblee aspires to be a healthy, vibrant, affordable, and safe environment where residents live, work, play, and grow in a diverse community that values its neighbors and the historic qualities of the city."

As time passes and as conditions change, the plan will serve as a guide for cooperation and coordination of nearby municipalities, other service providers, and current and future property owners. The goals, policies, and strategies contained in the plan were carefully crafted to support new development and redevelopment that is beneficial to the community and supports its vision. The plan will be the guide used to support decisions regarding growth management, transportation, housing, economic development, sustainability, and the community's quality of life over the next few decades.

The Comprehensive Plan outlines six policies for natural resources and sustainability:

- Promote development that is environmentally-sensitive and protects valuable community, historic, and cultural resources;
- Ensure adequate and high-quality water through protection of ground and surface water sources;
- Continue to support enhanced and develop solid waste reduction and recycling initiatives;
- Encourage sustainable policies, practices, and programs to better protect the natural environment and for the health and wellbeing of future generations;
- Maintain and advance Chamblee's status as a sustainable city; and
- Promote conservation planning through low impact development, sustainable food systems, and the protection of watersheds, urban forests, and wildlife habitats.

One key item from the plan's recommendations is for the City of Chamblee to achieve Platinum Certification through the Atlanta Regional Commission (ARC)'s Green Community Program. The program aims to reduce the environmental impact of local governments, encourage communities to reduce their environmental impact, and provide public education and outreach on sustainability issues. This sustainability plan outlines the City's ongoing sustainability program in pursuit of Platinum Certification. In addition, this plan will be adopted as an addendum to the One Chamblee Comprehensive Plan.

# Current Issues - Metro Atlanta Growth

Chamblee represents the next step in the maturation of sustainability in metropolitan Atlanta. Small cities with transit, wise land use policies, and engaged citizens will accommodate large amounts of the region's growth. Chamblee, with its industrial past, has substantial redevelopment potential for reducing pressure on further flung green fields. The key to Chamblee's sustainable redevelopment is evolving its urban development approach to include initiatives to address regional and national issues. These issues are outlined as follows:



Land Use



**Transportation** 



Materials Management



Energy



Water



Food



# Plan Metrics

While a final set of metrics should be established to ensure support for improvements, a base set of metrics applicable to Chamblee and recognizable to the public should be established, tracked, and reported regularly with a dashboard that graphically represents metrics the City is tracking. The dashboard should be easily readable and relate to Chamblee citizens' understanding of sustainability. The dashboard should contain metrics for both government operations and community indicators. It should relate current conditions and anticipated progress on the metric.





# Base Set of Metrics

- Land Use
  - Green space: 109 acres
  - Walkability
    - Sidewalks: 56.9 miles
    - Rail Trail: 1.1 miles
- Materials Management
  - Diversion rate
  - Weight of non-municipal materials
  - Compost
  - Hazardous Household Waste
  - Electronics
  - Tires
- Energy
  - Electricity: municipal and community wide
  - Natural Gas: municipal and community wide

- Water
  - · Number of gallons of municipal water used
  - Per capita community usage
- Food
  - Number of Acres cultivated in city limits
  - Number of days farmers markets are open

The base set of metrics to be tracked have a wide variety of implications. Energy is the most impactful, therefore municipal energy usage should be undertaken first. National median benchmarks for municipal building types in Chamblee's portfolio include:

Building Type	Source Energy Use Intensity (kBtu/ft²)	Site Energy Use Intensity (kBtu/ft²)		
Courthouse	211.4	101.2		
Police Station	124.9	63.5		
Meeting Hall	109.6	56.1		



After entering baseline data, the ENERGY STAR Portfolio Manager® will generate a weather adjusted Energy Use Intensity for each building.

Water benchmarking is the next most impactful. Energy audits have been conducted for many years, and there is a well-established cohort of service providers trained to perform them in accordance with standards developed by ASHRAE and others. These standards define the process and quality of work that should be achieved for energy performance audits. However, a corresponding level of industry maturity, and an understanding of what should be included, does not yet exist for auditing water performance. A recently developed guide by the City Energy Project is an initial attempt to develop such guidance based on a multi-year process drawing upon input from a working group of industry experts. Building water audits offer clear benefits to facility managers and owners, municipalities encouraging greater efficiencies throughout their service areas, and occupants of commercial and residential buildings. Water and energy efficiency upgrades can result in lower operating costs and increased comfort for building occupants. Resulting savings can also contribute to overall municipal goals. It is vital that audits from various professionals and for different geographical locations are comparable and consistent in format

to help standardize the industry. This guide provides both an outline for procedural execution of audits and a detailed format for audit reports. The goals of City Energy Project's document are to:

- Provide a common basis for conducting water audits;
- Define levels of effort for water audits;
- Establish a standard for water audit reports;
- Provide guidance for building owners, managers, and governments for conducting water audits; and
- Serve as a guide to best practices for water auditors.

Chamblee should adopt the guide at a level 2 audit as a framework for conducting thorough and consistent commercial-grade water audits. The guide assumes that those performing these audits will have the necessary background in water management or building water systems. Training events to support this guide are encouraged; however, those who receive the training should not be beginners to the arena of water management. The guide can be found at: https://www.cityenergyproject.org/wp-content/uploads/2019/05/City\_Energy\_Project\_Resource\_Library\_Water\_Audit\_Guidance\_For\_Commercial\_Buildings.pdf

Benchmarking utilities will assist Chamblee in several ways:

- Improves the understanding of energy and water consumption patterns and key drivers;
- Helps prioritize operational adjustments and capital investments;
- Improves bottom line by ensuring best return on investments; and
- Often, an average of 2% savings\* uncovers in the process, with a typical payback period of four months.

Chamblee should establish building utility benchmarking "accounts" using the U.S. Environmental Protection Agency's ENERGY STAR Portfolio Manager®. The accounts will be populated with year to date data for each city asset utility service. Chamblee should also establish data upload and reporting templates to assist with ongoing management of the accounts. Steps for this include:

- Determine benchmarking goals to inform the structure of the benchmarking accounts.
   Chamblee's plans for utility data collection, frequency of data entry and reporting should also be determined.
- Review the list of property specific information needed to create accounts.
   Types of information include building type, building gross floor area, number of workers on main shift, weekly operating hours and number of computers calculated per Portfolio Manager® definitions.

- Populate accounts with available historic billing data back to the baseline year for each property. The preferred method to retrieve utility data is from online utility accounts. Following the completion of utility waivers and approvals for online account access, download utility data for all utilities including electric, natural gas, water, and waste water.
- Prepare templates for the Chamblee's use to batch upload utility data and maintain the accounts, and a reporting template based on reporting metrics determined by Chamblee.

In the energy section of the Sustainability Plan chapter (pages 32-41), additional information on ENERGY STAR Portfolio Manager® can be found.

\*2% savings is across a portfolio of buildings, typical benchmarking effort is assumed at 4 hours.



# Stakeholder Engagement

Various models exist for sustainability engagement. Chamblee has a strong but nascent community voice on sustainability issues. In order to build citizen awareness of sustainability issues, leadership by the government and sustainability experts and professionals is necessary. Large topic issues like climate action planning, clean energy goals, resilience planning, and municipal certification (ENERGY STAR, LEED City, etc) would be topics to be undertaken. The civic infrastructure necessary for major initiatives such as this would need to be built over time and require staffing.

Conversations on sustainability issues were held through community meetings and stakeholder interviews. A community education session on sustainability was given on June 20, 2019 during the development of the One Chamblee Comprehensive Plan. The goal of this session was to show the intersections of design and sustainability and to encourage people to consider how different sustainable techniques could be applied to Chamblee to promote quality design. The session explained the importance of sustainability and how using low-impact development and conservation planning techniques can reduce adverse environmental impacts.

In addition to the community education session, stakeholder interviews were conducted with local leaders, including residents, local organizations, and government representatives.

# Stakeholder Conversations

Themes and notes from the conversations are below. It should be noted that these are perceptions that may not be entirely accurate.

#### Background of Stakeholders

- Georgia Native Plant Society.
- Ecologist.
- Park Ranger.
- · Government representatives.

# Stakeholders' Understanding of Chamblee's Efforts To-Date

- Rail Trail plans.
- Purchase of Dresden Park.
- Construction of LEED and EarthCraft certified facilities in parks.
- Partnering with Trees Atlanta to provide training with respect to invasive species, Front-Yard Tree Program, and other education programs.

Chamblee's efforts far exceed the list identified through stakeholder outreach, so it is evident additional outreach and educational measures are necessary

# Stakeholders' Understanding of Roadblocks

- Inertia and people not being used to embracing new ideas.
- Lack of innovation.
- Developers and home builders are unwilling to change their ways of doing things.
- The plan updates have not been on the developers' and home builders' minds.
- The right people haven't been in the room.
- Chamblee's ecological knowledge is very limited.
- Chamblee needs a Sustainability Department or expert within another department, or they need consultants to implement the plans.
- Chamblee is pro-development and urban density, but they need to start considering green building technologies.
- Lack of trust that plans will be implemented by the City.

# Chamblee Sustainability Initiatives to Focus On

- Tree preservation and planning and development of an Urban Forest Management Plan are top priorities.
- Native plants and habitat loss are very large issues: "You can't recreate undeveloped land."
- · Revisit the tree ordinance.

- Invasive species control in parks and greenspaces.
- Develop standards for tree plantings in the right-of-way.
  - Parking lot islands: require the use of engineered soil mixes for the trees to grow into the small spaces.
  - Look at what Alpharetta is doing as an example.
- Create and enforce a tree list.
- Who handles this issue within the City?
- Development of a tree ordinance.
- A recycling guide exists for curbside recycling.
- The City is not being consistent in the offering of recycling services.
  - Only single-family residential has the option right now.
  - Multi-family units and businesses are a case-by-case basis depending on the property owner.
- Green infrastructure and low impact development.
- Urban heat island mitigation.
  - High reflectivity pavement.
- Create an action matrix for the sustainability plan which includes funding allocation and location of funds.
- Smart growth.

# Ongoing Outreach Efforts

The City has consistently performed outreach with the community to educate on municipal efforts to advance sustainability and how residents and property owners can contribute.

#### Website

The City's website has a page devoted to sustainability that enumerates how buildings, landscaping, transportation, and energy conservation are regulated as they relate to sustainability. The website also lists existing plans and initiatives that the City is participating in, along with links so that viewers can get more information.

#### Collaborations

Chamblee has partnered with Trees Atlanta to develop a successful Front Yard Tree Program. This program provides trees and maintenance to private land-owners in exchange for planting trees in the front yards of their properties.

#### **Events**

The City collaborates with Keep Chamblee Beautiful to host recurring events and programs, like the Household Hazardous Waste (HHW) event at Plaza Fiesta in August 2019 and the Rain Barrel Workshop in May 2019. The City plans to host these events each year. The City regularly attends community events to distribute information on recent and upcoming initiatives.

#### Youth Outreach

The City partners with students at Chamblee Charter High School. Not only do the students volunteer for park clean-ups and recycling events, the City has engaged the Environmental Science Club to serve an ongoing advisory role in planning efforts. Students were involved in making recommendations for the recent Multi-Modal Transportation Plan. The City plans to continue to seek input and participation from its youth population.





# Sustainability Plan

# How to Use This Plan

This section outlines recommendations for seven issues to meet the plan's goals:











Water





Land Use Transportation Materials Management

Energy

Food

Governance & Outreach

Throughout this section, key recommendations will be called out. Recommendations include policies, programs, regulations, and action items. The graphics below describe what each of these recommendations entail.



# POLICY

Guidelines that provide direction for the implementation of this plan's goals.



# **₩** PROGRAM

This may include a plan of action to accomplish a specified end, or a recommendation to make changes to existing programs.



# **REGULATION**

A rule or directive to be made by the City to improve sustainability (e.g. zoning code changes, new ordinances, etc.)



# **ACTION ITEM**

A task that is to be accomplished by the City or its partners to realize the goals of this plan.

Pages 58-83 explain each of these recommendations in more detail, citing timelines, funding sources, responsible parties, etc.

# Land Use

Walkable Urban Places (Walk UP) are identified as ideal growth areas for the region, and Chamblee is a burgeoning Walk UP. The sustainability benefits of walkable land use patterns are numerous, and Chamblee is demonstrating these benefits in its development plans. Therefore, within the land use topic, we will focus on two land use sub topics:

- Urban heat islands; and
- Urban tree canopy.

While the subtopics are linked, they have diverse solutions and so are addressed distinctly.

#### Urban Heat Island

Urban heat islands are the presence of excess temperatures in urbanized areas due to high emissivity materials used in infrastructure and building, such as expansive parking lots and rooftops. Commonly, urban heat island is measured as a temperature difference between an urban area with respect to a climatologically similar rural area. These temperature gradients can be in excess of 15° F.

In 2000, the National Oceanic and Atmospheric Administration (NOAA) and the Centers for Disease Control and Prevention (CDC) found that there are more heat related deaths in the United States than all other catastrophic weather events.

Extreme heat events are becoming more common – according to the CDC and NOAA, 20-year heatwaves could occur as frequently as every 2 years by the end of the century, and the number of extreme heat days will increase by 10 to 20 days per year. These acute stressors affect Chamblee's most vulnerable populations (elderly, children, and residents with low income) more than other populations.

The related risks of urban heat exacerbate air quality risks as well. High temperatures create conditions which more readily convert car exhaust into dangerous NO,, SO,, and ozone. These air pollutants cause increases in respiratory stress and health risks. These disproportionately affect vulnerable populations and affect the time people can spend doing outdoor activities.





The urban heat island is a metro-scale issue; however, local mitigating actions do have local and regional benefits. Contributing features to urban heat island in Chamblee include:

- 1. Pavement;
- 2. Parking areas;
- 3. Impervious areas; and
- 4. Rooftops.

Mitigating the influence of these features on urban heat island will require multiple strategies, some of which Chamblee is already implementing and will be addressed in the urban tree canopy section:

- 1. Tree canopy tracking;
- 2. No Net Loss of Trees policy;
- 3. Front Yard Tree program;
- 4. Tree preservation ordinance; and
- 5. Cool Roof Strategy.

Along with an urban tree canopy, Chamblee can focus on creating a cool roof strategy to bring additional mitigating impact.



Examples of reflective roofs

#### Cool Roof Strategy

Cool Roofs are roofing products that reflect more solar energy than traditional building materials. Traditional asphalt shingles or other dark mineral-based materials absorb greater quantities of thermal energy than cool roofs. The amount of heat absorbed and radiated back to the ambient air is a result of the type and color of building materials. Dark materials absorb more solar energy. Cool Roofs are commonly 50° F cooler than traditional roofs.

Section 230-27(a)(11) of the City's Unified Development Ordinance (UDO) states that "all (non-single-family residential) buildings shall have roofs surfaced with a heat-reflective material." This measure is designed to decrease the severity of urban heat island. In addition to this requirement, it is recommended that an enhanced cool roof strategy be implemented for all other building types. The City should consider requiring that roofs for all new buildings have a reflectance of at least 0.25. By enhancing this requirement, the City can reduce its contribution to urban heat island, reduce the acute public health stressor caused by heat waves, and reduce the energy loads on buildings.

#### Considerations

The cost and difficulty of conversion to these materials is no different than a standard roof replacement. The primary issue is to specify the appropriate materials at design. Roofs near DeKalb-Peachtree Airport should be completed in consultation with airport to minimize risk of glare in flight paths. In these locations, green roofs can provide the same benefits but at additional costs. Refer to the chart published by EPA in 2008 of comparable costs for traditional and Cool Roof materials (on next pages).



Require all renovations of City-owned buildings to include a Cool Roof retrofit.

# PROGRAM

Develop program to strategically retrofit existing municipally owned buildings' roofs to Cool Roofs. Identify which buildings best suited for immediate retrofit based on current energy load of building and absence of Cool Roof. Utilize the following protocol for prioritization of remaining buildings:

- 1. Dark roofs in <u>first third</u> of expected life: schedule for Cool Roof coating.
- 2. Dark roofs in <u>last third</u> of expected life: schedule for Cool Roof replacement and upgraded insulation.
- 3. Dark roofs in middle third of expected life: When located in area contributing highly to urban heat island, schedule for Cool Roof coating.



Enhance cool roof regulations in the UDO to include all building types and require a reflectance of at least 0.25.

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# Comparison of Warmer and Cooler Roof Options

	Warmer Roof Options					
Roof Type	Reflectance	Emittance	Cost (\$/ft²)			
Built-Up Roof With dark gravel With smooth asphalt surface	0.08-0.15 0.04-0.05	0.80-0.90 0.85-0.95	1.20-2.10			
With aluminum coating	0.25-0.60	0.20-0.50				
Single-Ply Membrane Black PVC	0.04-0.05	0.80-0.90	1.00-2.00			
Modified Bitumen With mineral surface capsheet (SBS, APP)	0.10-0.20	0.80-0.90	1.50-1.90			
Metal Roof Unpainted, corrugated Dark-painted, corrugated	0.30-0.50 0.05-0.08	0.05-0.30 0.80-0.90	1.80-3.70			
Asphalt Shingle Black or dark brown with conventional pigments	0.04-0.15	0.80-0.90	0.50-2.00			
Liquid Applied Coating Smooth black	0.04-0.15	0.80-0.90	0.50-0.70			
Concrete Tile  Dark color with conventional pigments	0.05-0.35	0.80-0.90	1.00-6.00			
Clay Tile  Dark color with conventional pigments	0.20	0.80-0.90	3.00-5.00			
Wood Shake Painted dark color with conventional pigments	0.05-0.35	0.80-0.90	0.50-2.00			

Cooler Roof Options					
Reflectance	Emittance	Cost (\$/ft²)			
		1.20-2.15			
0.30-0.50	0.80-0.90				
0.50-0.70	0.80-0.90				
0.75-0.85	0.80-0.90				
		1.00-2.05			
0.70-0.78	0.80-0.90	1100 =100			
0.40-0.60	0.80-0.90				
		1.50-1.95			
0.60-0.75	0.80-0.90				
		1.80-3.75			
0.60-0.70	0.80-0.90				
0.05-0.08	0.80-0.90				
		0.60-2.10			
0.25-0.27	0.80-0.90				
0.25-0.27	0.80-0.90				
		0.60-0.80			
0.70-0.85	0.80-0.90				
0.40-0.60	0.80-0.90				
0.50-0.60	0.80-0.90				
		1.00-6.00			
	0.80-0.90				
0.40-0.50	0.80-0.90				
		3.00-5.00			
0.70	0.80-0.90				
0.40	0.80-0.90				
0.40-0.60	0.80-0.90				
		0.50-2.00			
0.40-0.55	0.80-0.90				
•	0.30-0.50 0.50-0.70 0.75-0.85 0.70-0.78 0.40-0.60 0.60-0.75 0.60-0.70 0.05-0.08 0.25-0.27 0.25-0.27 0.70-0.85 0.40-0.60 0.50-0.60 0.70 0.40-0.50 0.70 0.40-0.50	0.30-0.50       0.80-0.90         0.50-0.70       0.80-0.90         0.75-0.85       0.80-0.90         0.70-0.78       0.80-0.90         0.40-0.60       0.80-0.90         0.60-0.75       0.80-0.90         0.05-0.08       0.80-0.90         0.25-0.27       0.80-0.90         0.70-0.85       0.80-0.90         0.40-0.60       0.80-0.90         0.50-0.60       0.80-0.90         0.70       0.80-0.90         0.70       0.80-0.90         0.70       0.80-0.90         0.70       0.80-0.90         0.40       0.80-0.90         0.40       0.80-0.90         0.40       0.80-0.90         0.40       0.80-0.90         0.40       0.80-0.90			

Source: U.S. Environmental Protection Agency. 2008. "Cool Roofs." In: Reducing Urban Heat Islands: Compendium of Strategies. Draft. https://www.epa.gov/heat-islands/heat-island-compendium.

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#### **Anticipated Roofing System Lifespans**

Low-Slope Roof Membrane	Average Life	Min. Life	Installed Cost	Maint. Cost	Disposal Cost
Asphalt-organic felt & asphalt BUR	14.7	7.3	2.27	0.12	0.86
Coal-tar organic felt and pitch BUR	23	12.2	2.97	0.14	1.10
Asphalt-glass felt and Asphalt BUR	16.7	9.1	2.28	0.12	0.81
Asphalt-glass felt and pitch BUR	17.7	9.0	2.87	0.09	1.07
Coal-tar-glass felt and pitch BUR	21.9	11.2	3.23	0.10	1.12
APP multiply modified bitumen	13.7	7.1	2.35	0.12	0.72
SBS multiply modified bitumen	15.9	8.4	2.70	0.11	0.93
Polyisobutylene	10.6	4.8	2.76	0.09	0.76
EPDM (ethylene-propylene-diamine)	14.2	7.0	2.21	0.10	0.98
Reinforced polyvinyl chloride	13.8	6.5	2.54	0.11	0.84
Reinforced hypalon, CPE	12.8	6.5	2.69	0.11	0.75
Other thermoplastic single plies	12.7	6.0	2.61	0.11	0.73
Foamed in place urethane	12.1	4.8	2.57	0.15	1.27
Fabricated sheet metal	25	12.4	4.94	0.11	1.27

Source: Carl G Cash 1996 "Proceeding of the Fourth International Symposium on Roofing Technology"

#### Urban Tree Canopy

The urban tree canopy (UTC) provides ecological services to the City of Chamblee, such as urban heat island mitigation, air quality improvements, storm water management, and habitat. In addition, the UTC provides direct benefit to residents through attenuating noise pollution, providing traffic calming services, and general beauty and comfort to city streets.

The following table is an overview of the findings from the tree canpoy study:

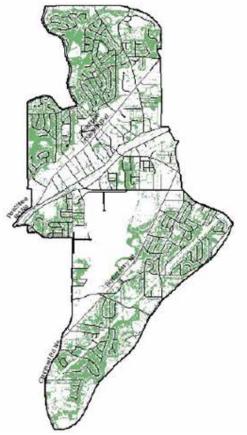
	2009	2017	% Margin of Error
Acres (ac) of (	Canopy		
Total city-wide	1,801 ac	1,729 ac	+/- 1.7%
Excluding PDK	1,748 ac	1,669 ac	+/- 1.7%
Coverage of C	Canopy		
Total city-wide	37.0%	35.5%	+/- 1.7%
Excluding PDK	40.4%	38.6%	+/- 1.7%

These services are not evenly distributed across
Chamblee. Predominately, the tree canopy is in singlefamily residential zoned property and specifically
on private property (see canopy coverage maps).
The City implements a Tree Preservation Ordinance,
a Front Yard Tree Program, and tree canopy
measurement and benchmarking to preserve tree
canopy. However, the Tree Preservation Ordinance
can be improved by implementing two initiatives to
improve this portion of the tree canopy: routine tree
canopy measurements and improvement of the Tree
Preservation Ordinance. The former is imperative to
benchmarking and monitoring any loss of tree canopy,
as well as evaluating the effectiveness of the Tree
Preservation Ordinance.

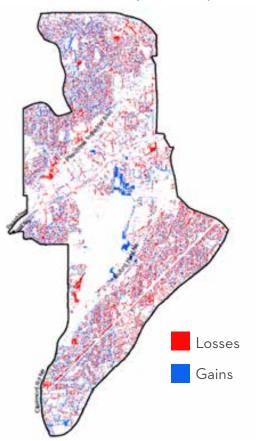
2009 Canopy



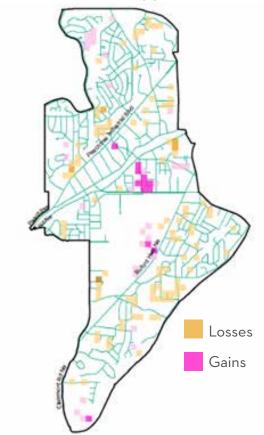
2017 Canopy



Difference Between 2009 and 2017 Canopy



Concentration of Canopy Losses or Gains



To improve the ordinance, it is recommended that a tree-canopy performance approach be implemented.

The tree canopy performance approach is a performance zoning approach to manage the environmental and social services of Chamblee's tree canopy. Performance zoning is a type of zoning that first determines the desired outcome and a set of metrics for evaluation for each parcel of property in a municipality, and then allows the parcel owners to determine the best way in which the parcel can meet the desired metrics. As an example, a performance zoning metric could be set to limit increased traffic caused by new developments. The metric may state that any development may only increase traffic volumes by five car trips per day. To meet that metric, a development may increase the sites walkability and/or decrease parking area to limit car access. This idea can be applied to tree canopy and allows for flexibility in terms of delivery and preservation of tree canopy while specifically allowing for good urban form.

To implement a Tree Canopy Performance ordinance, Chamblee must first establish the environmental and social services which the tree canopy should provide. Using this evaluative method, each parcel and its trees are either a contributing or deducting parcel for the environmental and social service goals of Chamblee's tree canopy. For each land disturbing activity in Chamblee, the parcel would develop a plan to have no negative impact and/or a net positive impact. These impacts would be graded by the time-value of the impact to incentivize nearterm improvements. This approach would ensure no-net loss of tree canopy services to the City while giving flexibility to developers. It is recommended these changes accompany a tree canopy coverage analysis every ten years.

In addition to trees on private property, right-ofway trees are important for the environmental services, safety, and aesthetics they provide for public spaces. These trees are important to save and municipal and administrative functions should consider design alterations to public infrastructure to provide for their preservation.

Chamblee has partnered with Trees Atlanta to develop a successful Front Yard Tree Program. This program provides trees and maintenance to private land-owners in exchange for planting trees in the front yards of their properties. This is a hugely beneficial program and should be continued and invested in.

In addition, it is recommended the program be evaluated for how tree planting location is determined, and recommendations made to encourage more street tree plantings. Street trees provide some of the greatest benefit of all trees in a city. Primarily, they provide canopy coverage for a city's streets, which contribute to urban heat island. Not only do they provide shade, they provide traffic calming benefits for streets, both of which increase walkability. The UDO requires street trees; however, it is recommended that administrative flexibility for streetscapes be required in the code to accommodate on-site conditions like utilities and existing tree stands. As a complement, it is recommended that the City adopt tree-well standards that integrate stormwater treatment.

#### Sources

https://www.cdc.gov/climateandhealth/pubs/ ClimateChangeandExtremeHeatEvents.pdf

https://www.npr.org/2019/09/03/754044732/as-rising-heat-bakes-u-s-cities-the-poor-often-feel-it-most



Implement a tree-canopy performance approach to improve the Tree Preservation Ordinance

# PROGRAM

Evaluate the Front Yard Tree Program for how tree planting location is determined and make recommendations to encourage more street tree plantings

# **REGULATION**

Adopt tree-well standards that integrate stormwater treatment.



Front Yard Tree Program (Source: Trees Atlanta)

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# Transportation

Transportation is a key component of sustainability. Vehicle emissions are one of many contributers of climate change, and reducing emissions through increasing the accessibility to other modes of transportation is one way to increase environmental sustainability.

One of the goals of the City's Mobility Plan is to "contribute to fiscal responsibility and sustainability." Each project in the plan was evaluated on how it met environmental sustainability principles, particularly how the effects that new impervious surfaces have on stormwater runoff and quality and the effects of vehicle-based transportation has on air quality. In order to fulfill sustainability, transportation projects sought to minimize the amount of new asphalt and decrease vehicle miles where possible.

The Mobility Plan recommended:

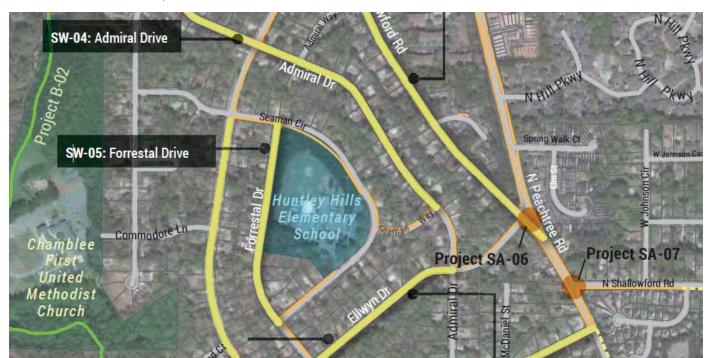
- Over 5 miles of new sidewalks and sidewalk infill focused on park and school connections in residential neighborhoods;
- 15 miles of trails;

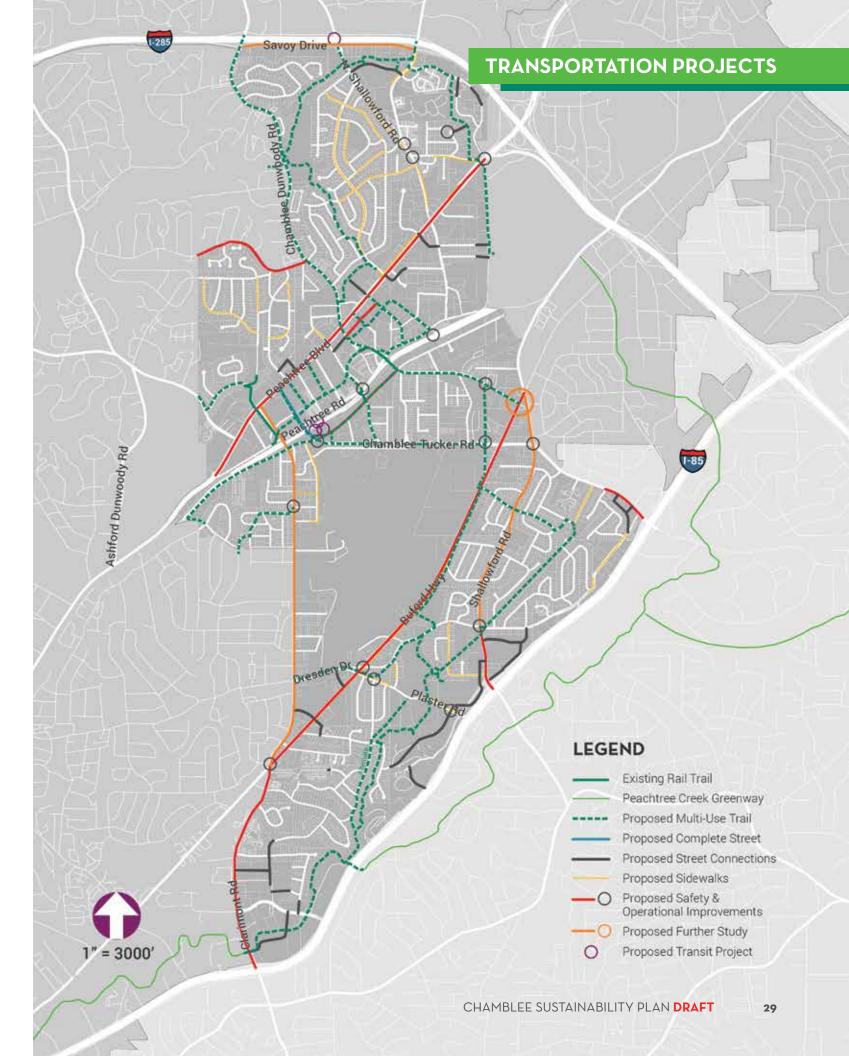
- · Transit improvements; and
- Enhancements to crosswalks and pedestrian signals to encourage more active transportation modes.

Chamblee's comprehensive plan outlines transportation policies that will increase environmental sustainability:

- Maintain and expand the multi-modal transportation network to support efficient land use patterns;
- Promote last-mile connectivity by providing connections between the road network and bicycle, pedestrian, and transit facilities to better encourage sustainable transportation choices; and
- Strategically infill gaps in the sidewalk network, focusing on filling gaps near schools, parks, and community facilities.

Projects recommended by the comprehensive plan complement those proposed by the Mobility Plan, further increasing sidewalks, trails, and new street connections.





# Materials Management

Nearly all of a community's activities can contribute to the waste stream. In 2012, the U.S. Environmental Protection Agency (EPA) reported that Americans recycled and composted an average of 1.51 pounds (35.2%) of the 4.38 pounds of waste humans generate each day. According to Rubicon Global, 75% of America's waste is recyclable. The U.S. Department of Agriculture (USDA) estimates that 30-40% of the food grown in the U.S. ends up as waste.

Data from Georgia Environmental Protection
Division (EPD) indicates that food residuals are
the largest category (12%) of solid waste going
into Georgia's landfills. Organic waste, including
food waste, when went to landfills, decomposes
overtime in the absence of oxygen and produces the
greenhouse gas methane, which is up to 34 times
more powerful than carbon dioxide.

Due to Georgia's abundant landfill space and relatively low tipping fees (the cost per ton that landfills charge to accept waste), it's difficult to make the business case for sustainable waste management which addresses the value and impacts of materials throughout its full life cycle. A key component of sustainable waste management strategy is availability. The City of Chamblee provides roll-off recycling carts for single-family homes, offices, multi-family residential, restaurants and other commercial establishments. Although recycling services are widely available, there is a lack of education resources on recycling practices.

In addition to lack of availability, there also exists a lack of education resources on recycling practices. The complex and rapidly changing recycling industry presents a challenge to public education and awareness that is critical to the success of sustainable waste management programs. Ongoing education is critical to the success of programs, despite the general understanding of processes and benefits of reducing waste.

#### Multi-Family Recycling Code

It is recommended that the City of Chamblee adopt a code mandating multi-family recycling options. Entities that should provide commercial containers for the collection of recyclables include:

- Owners of any multi-family dwelling (including public housing) consisting of six or more living units;
- Owners' association of condominiums or townhouses consisting of six or more living units; and

The containers should collect, at minimum, the materials the City collects as part of its curbside recycling program, including:

- Paper Products:
  - Newspapers and inserts.
  - Paperboard.
  - Magazines and catalogs
  - Paper
  - · Corrugated Packaging.
  - Paper egg cartons (with the liner removed).
  - Juice box, milk cartons.
- Plastic Bottles and Containers (#1 #7):
  - Yellow or white plastic milk cartons.
  - Plastic soda and water bottles.
  - Detergent containers.
  - Bleach bottles.
- Metal:
  - Aluminum beverage cans.
  - Steel food cans.

Currently, the City does not collect glass, styrofoam products, laminated plastic, light bulbs, batteries, aluminum pie plates, auto parts, toys, hazardous chemicals, aerosol cans, or aluminum foil as part of its curbsite recycling program.

The multi-family property owners or management are responsible for:

- Providing recycling services to the residents of each building;
- Securing and managing contracts for providing the material collection/recycling service for all building locations; and
- Providing clearly marked collection bins for recyclable materials and containers for transporting the materials off-site.

To ensure success, signage and guides will need to be produced by the City or City contractor and provided to residents and building managers to learn what is recyclable.

To increase participation in multi-family residential recycling initiatives, it is recommended that the building managers develop an education plan with key messages of recycling strategy and purpose. Education materials can consist of flyers, brochures, door to door outreach, posters, presentation at meetings, and/or a letter from management. It is also recommended that building managers partner with local organizations such as Keep Chamblee Beautiful and CHaRM to host additional educational/drop-off events within their community.

# Community Recycling Education Program

An efficient and effective recycling program is essential to conserve limited natural resources, reduce the amount of material added to landfills, and make the best use of the local taxpayers' investment in their community. Implementing a recycling education program improves the overall quality of the community's recycling system by increasing resident participation rates and by reducing contamination in the recycling stream. Education and outreach efforts inform residents of the existence and extent of their city's recycling

system, as well as what materials can and cannot be recycled through curbside pickup and other specialty stations throughout the community. Investing in improving resident awareness and understanding leads to higher rates of correct system usage and therefore lower operating costs to the City, increasing overall program impact and participant satisfaction, and ensuring its longevity.

The development and implementation of local recycling and public awareness programs will include holding education and outreach events, distributing education materials, and providing opportunities for resident involvement. Investing in improving resident awareness and understanding leads to higher rates of correct system usage and, therefore, lower operating costs to the City. It is recommended that the City do the following actions for the development and implementation of a local recycling and public awareness program:

# **ACTION ITEM**

Public education and outreach events: distribute education materials and messages and conduct outreach to inform citizens and target audiences.

# **ACTION ITEM**

Public involvement and participation events: provide opportunities for citizens to participate in programs and active implementation of waste reduction, water education, and recycling education programs.

# **REGULATION**

Develop hauler standards and enforcement efforts.

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Currently, the City is working towards these actions through their Home Hazardous Waste (HHW) bi-annual event in partnership with other cities and CHaRM pop-ups in partnership with Keep Chamblee Beautiful. The HHW events are for residents to drop off all HHW waste for free. Waste accepted includes aerosols, adhesives, resins, and epoxies; mercury debris/articles/devices; lawn care products, automotive products; poisons, pesticides; fluorescent or incandescent light bulbs; non-DEA regulated pharmaceuticals; photo chemicals, hobby and artist supplies, paints and paint-related products; and cleaners and swimming pool chemicals. CHaRM also accepts hard-to-recycle items such as styrofoam, furniture, glass, books, wine corks, electronics, and textiles.

# Construction and Demolition Waste Reduction

Construction and demolition (C&D) waste from buildings, including lumber, drywall, metals, carpet, rocks, etc., accounts for large portions of the disposed waste stream. It is recommended that the City require building and demolition contractors to reuse and recycle C&D waste rather than disposing of it in landfills. Developers will be demolishing industrial buildings that are obsolete, thus, a C&D requirement would help to reduce percentage of material going to landfills. Recycle strategies can be implemented through the contractor or through a local entity which specializes in C&D waste and reuse. The building must be dismantled rather than demolished, carefully deconstructing it with the goal of reuse. It is recommended that the City of Chamblee work with a C&D waste recycling advocate to develop a long-term strategy for regulatory requirements reducing C&D waste.

# Energy

Since the Industrial Revolution, the global average temperature has increased by 1.5 degrees
Fahrenheit, and under the best-case scenario, over the next 100 years it will increase by another 2.7 degrees Fahrenheit (Source: United Nations).
Climate change will bring extreme heat events, excessive drought, and sea level rise (Source: Climate Reality Project). These are all due to the burning of fossil fuels. Fossil fuels have a unique ratio of carbon isotopes which allow scientists to measure the increase in carbon dioxide in the atmosphere resulting from burning these fuels.
Globally, cities are champions for initiatives to de-carbonize the economy and mitigate climate change.

Chamblee's energy is sourced from Georgia Power so it is recommended that municipalization be considered at renewal of the franchise agreement, otherwise Chamblee does not have the ability to de-carbonize energy usage rapidly without the cooperation of the Public Service Commission (PSC). As of October 2019, 64% of Georgia's electricity generation comes from carbonbased fuels – all of which contribute to global climate change (Source: <a href="https://www.eia.gov/">https://www.eia.gov/</a> state/?sid=GA#tabs-4) and the PSC has not decided to materially change that electricity generation profile. Thus de-carbonization is a systemic problem of which Chamblee does not have immediate control. However, there are significant measures with immediate impact.

Therefore, as a City, it is recommended Chamblee do its part to implement renewable energy sources at a rate higher than the global marketplace. Initially a goal for 100% clean energy for City operations by a date to be determined through engagement is recommended.

Chamblee's leadership in energy sustainability can be expanded with three initiatives:

- Improved energy codes:
  - Enforcement.
  - Stretch codes.
- · Benchmarking:
  - Voluntary.
  - Mandatory.
- · Clean energy goal.

# **Energy Code**

Energy efficiency is considered one of the easiest and most effective strategies available to decision makers, consumers and industry to save energy. While the development and adoption of progressive energy codes are the necessary first steps, they alone do not guarantee compliance. Cities, counties, and other jurisdictions must develop and carry out realistic and effective energy-code implementation and enforcement strategies to ensure that energy codes accomplish their intent to reduce energy use and save money for consumers and businesses.

Achieving compliance with energy codes saves residents and businesses money by reducing energy consumption, which lowers utility bills. Moreover, as energy prices increase, so do monetary savings from compliance with energy codes. Savings from energy-efficiency measures increase consumer purchasing power and companies' ability to lower costs and invest in their businesses, ultimately aiding Georgia's economy.

Chamblee is currently positioned to gain significant benefits from improvements to code and incentive strategies. This is due to the City's current rapid rate of growth in population and replacement of older lower performing or unconditioned industrial buildings with new commercial development and additional housing units. Upgrading codes and policies to incentivize future efficient construction techniques to the Georgia code minimum

encourages the large volume of new construction and substantially renovated properties becoming available to be higher quality, energy efficient, and durable to support commercial activity and the growing workforce well into the future.

The State of Georgia now requires each builder to meet the minimum requirements of the energy code. However, it is the charge of each responsible city, town or county building department to determine how to enforce the energy code to reach Georgia's current compliance requirements. A recent study collected data from homes permitted under the Georgia Energy Code and potential savings were calculated against that code. While many building components tested frequently met or exceeded code requirements, several key items were identified as potential areas for improvement. Duct leakage and lighting are two examples where only 69% and 37%, respectively, of homes measured met or exceeded the associated code requirement. This leaves many buildings performing at lower standards than is required.

Chamblee has few options to transform its residential building stock. Homes typically undergo deep retrofits affecting systems like the building envelope on intervals greater than 50 years. Energy codes were only introduced in the 90's and only effectively enforced at the beginning of this century. The national code organizations recognize that increasing building efficiency has successfully reduced the increase in energy consumption attributed to the building sector, effectively reducing the need for new generation capacity. As the Architecture, Engineering and Construction (AEC) industry has adopted advances in building science, the code organizations have increased requirements for building performance. A study in other municipalities with high performance building requirements found the costs associated with increased energy performance are typically offset with reduced energy bills when traditionally financed. The code organizations see the role increased

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building performance plays in addressing carbon emissions.

Opportunities to improve construction quality through energy code process upgrades include better enforcement, better codes, and strategically pursuing stretch code options, all outlined in more detail below.

#### Better Enforcement



#### **POLICY**

**Enhanced verification procedures** across all levels of construction including single-family and multi-family residential, commercial, and industrial



#### **Training for inspectors**

Often, staff in building departments only receive training on energy code requirements once, soon after a new code becomes effective. Therefore, many inspectors are not fully versed in the energy code and the nuances of specific requirements. Additional training, specifically field training, would improve enforcement of this and other more nuanced requirements in the energy code.

- In Field Training. To enable inspectors to learn about some of the more nuanced air-sealing and insulation installation requirements in the energy code through hands-on activities.
- Consumer Orientation. Focus on conducting consumer outreach on new or changing codes and requirements, primarily by developing and distributing informational flyers describing new or upcoming code changes to contractors via building suppliers and annual industry outreach meetings.



Building department outreach should aim to reach as many affected professions and trades as possible to notify the industry of how they intend to enforce the testing requirements, new provisions in the energy code, and to ensure effective adoption throughout Chamblee. This can be achieved by doing the following:

- A letter posted on the website or sent to the construction industry explaining how the department plans on enforcing the testing requirements in the energy code as well as other changes to the code.
- Provide flexible training options, including live workshops, videos, webinars, and online coursework such a those found here: http:// bcapcodes.org/compliance-portal/.
- Give builders copies of practical resources that would help improve compliance and promote best practices including field guides and online tools such as those found here: http://bcapcodes.org/tools/code-builder/.
- Leverage established relationships with professional organizations, agencies, and other partners to promote trainings and resources and inform them of regular compliance issues.
  - www.aiaga.org
  - www.acecga.org
  - www.agcga.org
  - www.atlantahomebuilders.com



Develop a set of energy code enforcement policies



# **POLICY**

Mandatory energy modeling on certain building types

By developing a policy to select an appropriate modeling approach, Chamblee can ensure that builders meet the requirements in the energy code. Requiring an energy model submittal before permitting ensures the building as designed will attain the performance required by code, provides builders a resource to understand the factors in construction involved in making that happen (such as RezCheck and ComCheck), and provides an opportunity to re-design any portion of the building that would create issues with compliance. When reviewing energy model reports, the building department not only needs to ensure that the building passes, but that the most recent versions of modeling software were used. Previous versions of the software do not include the most up to date versions of or amendments to the code.



### REGULATION

**Optional Energy Rating Index (ERI)** compliance

The 2015 IECC introduces a new compliance pathway – the Energy Rating Index (ERI). This pathway is modeled on the Home Energy Rating (HERS) industry and allows an energy simulation that looks at all energy used in the home. This is significant because this compliance pathway allows credit for mechanical equipment, increased lighting efficiency, better appliances and renewable energy.



# **REGULATION**

**Required submittal of Load Calculations** (Manual J) and staff review

HVAC load calculations are important to ensure a system is not oversized. Correctly sized HVAC equipment is necessary for efficient equipment operation that meets code requirements, and consistent comfort. Rarely does industry put enough emphasis on these code requirements. Departments should require that load calculations be submitted prior to issuance of the building permit. This ensures that the load calculation is performed but it does not ensure that it is performed correctly. Studies have shown that the majority of load calculations conducted by contractors have inappropriate inputs and thus HVAC systems are typically oversized. It is recommended that the building departments train their staff on reviewing load calculations and then review specific inputs used. This measure benefits the building's efficiency and construction cost.



# REGULATION

Third party quality assurance of duct and envelope testing

Quality assurance is executed by Building Performance Institute (BPI) or Home Energy Rating System (HERS) credentialed verifiers. Verification testing should follow Duct and Envelope Tightness regulations.

#### High Performance Building Stretch Code

Chamblee has a hybrid approach to building performance with green building program elements required of new commercial construction and renovations. Adoption of a High Performance Building Standard written as such (ASHRAE Standard 189 and other permissive codes) and allowing green building program as a compliance pathway removes the Technical Advisors from the regulatory role. The importance of testing and commissioning on new construction would be enhanced under this approach.



# **ACTION ITEM**

Improved Energy Code enforcement



# **ACTION ITEM**

Notify Georgia Department of Community Affairs of the City's intent to adopt permissive codes.



# **PROGRAM**

Conduct an education program for the **Architecture/Engineering/Construction** industry.

### Benchmarking

Benchmarking is the practice of measuring how much energy and water a building consumes and comparing that against other buildings. Benchmarking is an important starting place for local governments looking to reduce the cost of operation, improve occupant health and comfort, and reduce environmental impacts of municipal, commercial, and residential properties. Benchmark data is an invaluable guidepost for local governments as they work to identify and target policies that address the building-related energy and water consumption profile unique to every community. Research from the U.S. Department of Energy (DOE) has also found that benchmarking a building is a cost-effective way to reduce consumption, with the average building reducing energy consumption 7% within 3 years, simply by giving facility managers a better understanding of their seasonal usage patterns.

There are several tools available in the marketplace that allow building owners and managers to measure, manage, and report building data. The industry standard in benchmarking is a free tool from the DOE and the Environmental Protection Agency (EPA) known as ENERGY STAR Portfolio Manager®. Portfolio Manager® utilizes DOE and EPA datasets to analyze a building's consumption data and compare its performance against buildings of a similar age, size, occupancy, use-type, and local climate. Currently, just over 40% of commercial buildings in the United States benchmark are using Portfolio Manager®.



#### U.S. City, County, and State Policies for Existing Buildings: Benchmarking, Transparency, and Beyond Minneapolis Edina South Portland Evanston Des Moines Cambridge - Boston Fort Collins Pittsburgh Salt Lake City Chicago Na - New York City Montgomery Washington, DC County, MD Berkeley Kansas City, MO San Francisco -San Jose Los Angeles San Diego Atlanta Austin Requires achieving performance targets or completing additional actions Benchmarking policy for public, commercial buildings adopted Benchmarking policy for public, commercial,

Source: Institute for Market Transformation (2019)

Policymakers have a choice to make in getting a benchmarking initiative started in their community, voluntary or mandatory. Voluntary benchmarking initiatives, such DOE's Better Buildings Challenge (see sidebar on next page), can be a good starting place for communities or a companion to other community outreach programs. Mandatory programs, such as benchmarking ordinances, are the best way to ensure policymakers have the information they need to guide their community to greater efficiency. Following are some of the strengths and opportunities that typify most successful voluntary and mandatory programs around the country.

Voluntary Benchmarking Program

and multi-family buildings adopted

# PROGRAM

Start a voluntary benchmarking program that promotes benchmarking to commercial and multi-family building owners and operators while offering opportunities for education, peer exchange, and technical support.

Such a voluntary program can further leverage the potential for impact by making a savings goal commitment (such as 20% below 2020 baseline by 2025) through DOE's Better Buildings initiative (see sidebar on next page). This would provide Chamblee staff with access to additional resources from DOE such as marketing and outreach support, sector-

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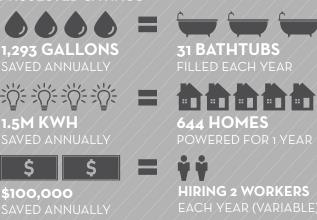
### BETTER BUILDING CHALLENGE CASE STUDY: TECHNOLOGY SQUARE

Georgia Tech Research Institute has had a long commitment to high performance buildings and sustainability standing, and joined the Atlanta Better Buildings Challenge (BBC) in November 2011. Joining the Atlanta BBC was a commitment not only to the Institute's performance, but also to the community as a good citizen helping to carry Atlanta forward. Georgia Tech Research Institute hopes to lead other universities to join the Atlanta BBC and support the effort to help Atlanta become a top-tier sustainable city.

The Technology Square Research Building began its retrofit effort just before joining the Atlanta BBC but quickly benefited from the Atlanta BBC assessment. The Atlanta BBC assessment provided 15 additional energy and water saving solutions that spanned from lighting retrofits to additional controls, with estimated annual savings of over \$80,000 per year. The majority of recommendations had to do with operations or controls and sensor changes. The building moved quickly into implementation and has completed all upgrades saving 22% on electricity and water costs as compared to the 2009 baseline.

PROJECTED SAVINGS

3.590 METRIC TONS



related training webinars and conferences, and national recognition for goal achievement.

A strong voluntary program is built on the strength of its partnerships. Effective programs around the country include partnerships that can effectively engage and recruit with property owners and managers, provide technical support of the process of benchmarking, have the buy-in of key stakeholders such as the local government and utilities. Engagement and recruitment can be effectively accomplished through working with local partners such as the area Chamblee Chamber of Commerce, Downtown Development Authority, Atlanta Apartment Association, and Building Owners and Managers Association. Non-profits have a demonstrated history of acting as a technical support partner for benchmarking programs but programs in larger local government have utilized municipal staff, such as Building Energy Managers, to effectively manage this aspect of their programs. Buy-in from key stakeholders can take a number of forms but common examples are the mayor of a city appearing at events occasionally to lend the legitimacy of their office to the program or working with the local utility to program commercial and multi-family energy efficiency programs to participants.

Once Chamblee has established a program that is driven by engagement with businesses and residents in the community, evaluation of success should be measured against a "tipping point." A voluntary program offers the opportunity to first lead building owners and manager toward a critical mass of social change in how owners and operators monitor and manage their buildings' performance.

#### Mandatory Benchmarking Ordinance



Should a voluntary program be successful, a mandatory benchmarking ordinance would require buildings above a certain size to annually report energy and water usage to maintain the City's progress.

Such a policy can be implemented gradually through phases tailored to a community's building profile and municipal staff enforcement capacity. A recommended target size for benchmarked buildings is any structure greater than 25,000 square feet. The threshold is ultimately determined by the community's building profile but is generally not set much lower than this in order to not include small business owners that may lack the resources or capacity to report their data. Model ordinance language can be found at: <a href="https://www.cityenergyproject.org/wp-content/uploads/2019/01/City\_Energy\_Project\_Resource\_Library\_Annotated\_Model\_Ordinance.pdf">https://www.cityenergyproject\_Ordinance.pdf</a>.

Due to the complexity of how multi-family residential or multi-tenant commercial buildings are metered, it can be difficult to benchmark when the local utility does not offer the ability to aggregate together multiple accounts into one dataset. To assist, Georgia Power has developed a data aggregation resource called the Automated Benchmarking Tool (ABT) for any customer with more than five individually metered units. ABT makes benchmarking compliance a simple process with the end output being a dataset that can easily be uploaded into ESPM.

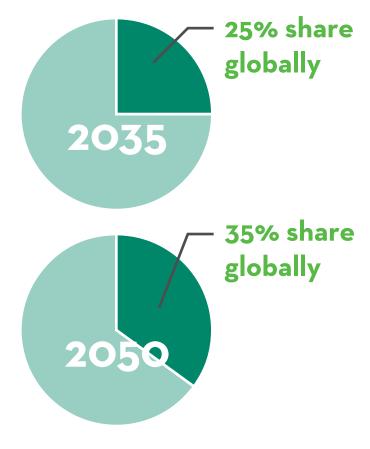
#### Future Opportunities

- The ordinance can pair well with an energy and/or water audit reporting requirement.
- There is an opportunity to implement in conjunction with other financing initiatives such as Property Assessed Clean Energy (PACE) financing.

# Clean Energy Goal

Renewable energy sources and other no-carbon fuels are projected to grow to 25% share of energy consumed by 2035 and 35% by 2050 globally. This growth will not be sufficient to replace carbon-based energy sources to the extent necessary to prevent the projected 2° C increase in global temperatures.

The southeastern United States has made substantial shifts toward natural gas as a primary source for electricity generation but as noted above the energy mix remains 64% carbon based.



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This will allow our electricity rates to remain low despite projected rate increases requested by Georgia Power. Low rates are a disincentive to energy efficiency investments. However, due to our climate and inefficient buildings the Southeast suffers from disproportionately high energy bills. Therefore, energy efficiency measures noted above can be a substantial part of a clean energy goal but will need a careful mix of incentives and mandates to achieve the goal.

Over 150 cities, and more than ten counties and seven states, nationwide have adopted goals for 100% clean energy. Four of these include cities/counties in Georgia – Atlanta, Clarkston, Augusta, and Athens-Clarke County. The below actions are recommended for a city to adopt clean energy goals.

 Find champions (local organization and community members) to meet local policy makers to advocate for adopting clean energy goals.

- Identify a City of Chamblee champion in local government.
- Collaborate with local organizations and community members to draft a clean energy resolution that is achievable for the City. Examples of clean energy goals include committing to achieving 100% clean, renewable energy for city operations by 2035, and community-wide by 2050. Once a clean energy goal is identified, the City will contract with an organization to develop a 100% Clean Energy Plan a planning process that incorporates stakeholder engagement, community conversations, data analysis, and plan development to provide a pathway to achieving the 100% clean energy goal.
- The completed plan will be presented to City Council for approval.



#### Vehicle Fleet



#### **ACTION ITEM**

Convert City fleet vehicles to electric cars where alternative options exist to decrease carbon emissions.

The steps the City should take in electrifying their vehicle fleet include:

- Conduct internal research and investigate funding options to support fleet electrification. Consider partnership with Clean Cities-Georgia to help apply for grants.
- Contact utility provider to discuss options and incentives for fleet electrification
- Perform internal drive cycle analyses for fleet vehicles' average duty cycle and create timeline for retirement of vehicles
- Utilize Alternative Fuels Data Center's tools to pick the appropriate EV that would hold the highest ROI as well as research laws and incentives in the state of Georgia
- Consult with other jurisdictions for best practices, such as Cobb and DeKalb County

#### Sources

https://www.climaterealityproject.org/blog/how-does-climate-change-affect-georgia

# FLEET VEHICLES CASE STUDY: COBB COUNTY

Currently, Cobb County has 29 electric cars and 4 electric motorcycles in its vehicle fleet. Cobb County did a large amount of research when they were considering a move to electric vehicles by going to environmental conferences, mostly in California since they were leading the way at that time. From there, they started researching funding sources to reduce the budget. They were able to fund their transition using Electrify America grants and the GEFA program. However, these funding streams no longer exist for electric vehicles

When Cobb County began considering different alternative fuel vehicle options, they performed internal drive cycle analyses to see what their fleet vehicles' average duty cycle looked like. This informed their decision to go with electric vehicles based on duty cycle, capital costs, future operating costs, and other financial decisions.

In order to analyze return of investment (ROI, the County used the Alternative Fuels Data Center's many tools to pick the appropriate electric vehicle model that would have the highest ROI. The County also researched laws and incentives in the state of Georgia that could help with funding.

Ultimately, Cobb County decided to lease their electric vehicles through Nissan. Through the lease program with Nissan, they offered them absolutely free charging for Cobb County, resulting in costs of \$0 to "fuel" their fleet.

#### Water

Chamblee is in the headwaters of the Chattahoochee River, split by two sub-watersheds: Nancy Creek and the North Fork of Peachtree Creek. Due to the location at the headwaters, the City has a responsibility to make sure that the water in those streams is as clean and healthy as possible for downstream neighbors, while also maintaining manageable volumes and discharge rates. Additionally, the Metro Atlanta region, is a waterconstrained area, further highlighting the need for alignment with stormwater management standards.

The City, jointly with DeKalb County and the Cities of Dunwoody, Doraville, and Brookhaven, worked to complete the Nancy Creek Watershed Improvement Plan (WIP) in 2016. According to the water improvement plan, Nancy Creek is considered impaired by the State of Georgia, not meeting state standards for fecal coliform bacteria and fish biota. The plan's overall objective was to examine the watershed health on a regional scale and identify projects to improve watershed conditions. The goals of the plan include:

- Meet state water quality standards;
- Restore stream buffers to prevent the loss of soil/stream buffer:
- Improve streams to "sub-optimal" habitat condition or better; and
- Support projects that promote wildlife diversity and aesthetics.

The water improvement plan for North Fork Peachtree Creek was completed in 2018. This creek does not meet state water quality standards. North Fork Peachtree Creek is nearly built-out, with the majority of the development occurring prior to current stormwater requirements. These aging developments are not providing the protections that are now required by modern ordinances. The goals of the plan were the same as those for the Nancy Creek water improvement plan.

Currently, less than 4% of the land use in Chamblee is undeveloped land, and parks and conservation land comprise 2%. The remainder of the land includes residential, commercial, industrial, utilities, and public and institutional. The majority of rainfall that lands on older developments within the watershed leaves as stormwater runoff. Environmental regulations have become relatively effective at controlling point source pollution from industry and wastewater treatment plants; therefore, non-point source pollution from stormwater runoff is now one of the leading causes of water quality problems. Debris, pollution, and particulates existing on the surfaces wash into local water bodies with each rainfall event.

In addition, impervious surfaces, such as rooftops and roads, absorb more heat which, in turn, heats the stormwater running off of the surface to the local water bodies. A heated surface has the potential to increase runoff temperature 25°F. This heated runoff makes its way to local streams, putting stress on the aquatic ecosystems through thermal pollution. In addition, warmer waters are less capable of holding dissolved oxygen, leaving aquatic organisms in a weakened physical state and susceptible to health stressors.



# REGULATION

Adopt an additional stormwater utility fee to initiate regional green infrastructure installments.



# **ACTION ITEM**

The City of Chamblee should work with surrounding cities and counties to set a plan to implement projects and goals identified in the Nancy Creek and North Fork Peachtree Creek water improvement plans.



# REGULATION

Consider density and open space multipliers for green roofs in the City's highest density zoning district and in zoning districts nearest to creeks. Alternative: allow green roofs to be counted as pervious surfaces.

#### Water Management

Water management in building operations strategies can include water audits. Water audits are an often overlooked but effective measure to reduce operations and maintenance costs of government buildings. Recently, the City Energy Project and Southface have created intuitive guidelines for building owners to complete their own water audits. Operation and maintenance costs represent greater than 90% of a building's life cycle costs. In fact, since 2010, water and sewer rates have risen by 41% in 30 major U.S. cities. Improving the efficiency of indoor and outdoor plumbing fixtures can yield significant water and cost savings, allowing building owners to reinvest capital into other municipal services.

(Source: Southface - Advanced Commercial Buildings Initiative).

### Regional Water Planning

Because land and the water that runs over and through it are intimately connected, a watershed approach is vital to understanding and addressing water supply and quality impacts. Decisions based only on a single point in the watershed can

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have consequences elsewhere; therefore, a regional water approach to stormwater management is most effective, particularly considering Chamblee's current land uses and place in the watershed. The water improvement plans recommend 78 (North Fork Peachtree Creek) and 43 (Nancy Creek) projects to meet the watershed goals. The projects vary from new stormwater controls, retrofits, stream restoration and/or stabilization, stream buffer restoration, shoreline restoration, and sediment removal projects.

The water improvement plans outline projects, along with funding sources and strategies for implementation. It is also recommended that the City set a goal to complete a Master Stormwater Plan which focuses on both water quality and natural resources and habitat.

Due to the stormwater quality benefits, green roofs should be allowed as an offset for any stormwater utility fee that may be adopted. As a component of a regional watershed planning strategy, a stormwater utility fee should be a consideration and any fee normally imposed for the impervious surface of a building roof should be offset for those with green roofs.

#### Green Infrastructure Goals

Green infrastructure is an approach to managing stormwater runoff that emphasizes infiltration, evapotranspiration and reuse, thereby reducing the volume of polluted runoff from entering our streams and pipe systems. Green infrastructure systems, such as bioretention areas, green roofs, permeable pavers, and cisterns are designed to capture the first one inch of rainfall. In addition to stormwater management and cleaning water for downstream neighbors, certain green infrastructure best management practices (BMPs) provide ancillary benefits, including wildlife habitat creation and biodiversity, urban heat island mitigation, creation of greenspaces, and opportunities for localized workforce development.

Additionally, the amount of impervious surfaces associated with road projects, surface parking lots, and parking decks makes them a significant source of stormwater runoff and pollutants. It is recommended the adoption of code requiring parking lot runoff be treated for both quantity and quality through green infrastructure measures, including, but not limited to, pervious concrete, permeable pavers, stormwater planters, green roofs, and swales. It is also recommended that the City adopt a policy that road improvement projects seek to handle water quality issues through green infrastructure and other BMPs.

Green roofs are a solution to a wide variety of sustainability issues. Urban heat island, stormwater quality, wildlife habitat, and food access are examples of issues that can be addressed with green roofs. However, green roofs can prove difficult to incentivize due to their high cost and maintenance regime. As a stormwater solution they are often the only option to address water quality on high density buildings and are often incorporated as open space features of a building, therefore one of the best incentives is to ensure they are given credit as open space regardless of their public

access. It is recommended that Chamblee define green roofs in its zoning. Open space requirements should allow green roofs to count toward up to 75% of a development's open space requirement For example, if 1 acre of open space is required for a new development, a maximum of 0.75 acres of green roofs may count toward the requirement.



# POLICY

**Encourage road improvement projects** to handle water quality issues through green infrastructure and other BMPs.



# REGULATION

Adopt code requirements that aim to reduce parking lot runoff and require a percentage of runoff to be treated on-site through green infrastructure measures.



# REGULATION

Reduce regulatory barriers to using green infrastructure to satisfy stormwater requirements, but require all low-impact development features be recorded as permanent easements to ensure measures are being taken to protect water quality measures from being demolished.



# REGULATION

The City of Chamblee should define green roofs in its zoning and ensure its open space requirements include green roofs. Green roofs should count up to 75% towards open space requirements.

#### Green Infrastructure Maintenance and Inspection Protocols

One of the barriers to long-term green infrastructure and low-impact development is lack of knowledge and protocols to ensure that green infrastructure structures function well for years to come. It is recommended that Chamblee support the development of green infrastructure maintenance and inspection protocols with adoption of standardized routine maintenance and inspection activities for green infrastructure and low-impact development within the city limits. As Chamblee adds green infrastructure and low-impact development facilities, it is recommended that staff be trained in operations and maintenance techniques including, but not limited to, water schedules, sediment control, and vegetative maintenance.

#### Promote Water Harvesting and Reuse

Outdoor and process water needs can be met through on-site rainwater harvesting, such as cisterns and barrels, and air conditioner condensate recovery. Recovering the condensate would alleviate the capacity and treatment required by the sewer system while also reducing the consumption of the building in supplying their irrigation needs. Collected rainwater can also be used for cooling towers. It is recommended that all cooling tower installations greater than 10-tons have their blowdown water requirement met by rainwater harvesting.

#### Benchmark and Audit Municipal Buildings

It is recommended that Chamblee complete the following actions for benchmarking and auditing municipal buildings:

- Enter all buildings into ENERGY STAR Portfolio Manager.
- · Complete a Level 2 Water Audit for 20% of buildings by 2020

- Meet with key building operation personnel to discuss consumption patterns or operations issues that may be affecting water use efficiency.
- Perform Level 2 Water Audit as defined by City Energy Project.
- Complete an annual inspection and review of irrigation management practices
- Enroll in BIT Building: complete Best Practices BP-01, BP-04, BP-09, BP-14,



# **O** POLICY

Support the development of green infrastructure maintenance and inspection protocols.



# PROGRAM

The City of Chamblee should train staff in long-term green infrastructure and low-impact development operations and maintenance techniques.



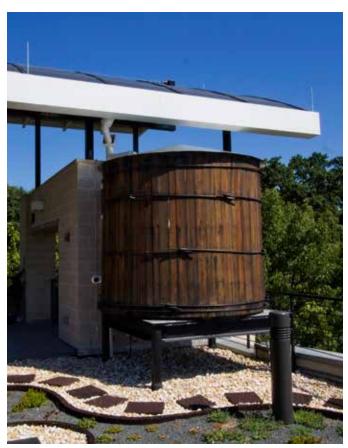
# REGULATION

**Encourage all cooling tower installations** greater than 10 tons should have their blowdown water requirement met by rainwater harvesting.



# PROGRAM

The City of Chamblee should benchmark and audit municipal buildings for water usage and use BMPs related to water efficiency to address issues.



A roof-top cistern



Atlanta City Hall green roof



Bioswales at Emory University



Pervious concrete

### Food

Urban agriculture in Chamblee would add to the community's vision to be a "healthy, vibrant, safe environment where residents live, work, play and grow in a diverse community valuing families and neighbors," by bringing community together through the desire and need for access to healthy food. In addition to generating food, urban agriculture provides economic and health benefits, and creates a sense of community. People who shop at farmers markets have 15 to 20 social interactions, compared to one or two for those visiting traditional grocery stores.

Chamblee has made some efforts toward urban agriculture. The Buford Highway LCI, completed in 2017, recommended that Chamblee and the other Cities partnering in the study to attract foodrelated industries like farming and production along the Buford Highway corridor, as well as amending zoning regulations to allow for these industries. Recently, the City of Chamblee constructed Village Park, which features a community garden. Currently, the ARC is assisting the Cities of Chamblee and Brookhaven and community partners to identify barriers to food security in the Buford Highway corridor, particularly for the community's lowincome Hispanic population. The goal is the eventual removal of these barriers and improved health outcomes in the area.

The benefits of urban agriculture include:

- Social Benefits
  - Public health. A local supply of nutritious food for the community.
  - Education. Teaching and engagement surrounding sustainable, local agriculture helps to create the connection to where our food comes from.

- Economic Benefits
  - Economic growth. Localized economic growth circulates income throughout the region. The suppliers are more connected to the market, allowing them to adapt quickly to demand and maximize profit.
  - Job creation. Localized workforce development in community gardens and other urban agriculture practices results from an increase in small business and localized economic growth, creating jobs where people live.
- Environmental Benefits
  - Carbon emission reduction. Due to localized production of food, urban agriculture can decrease the amount of fossil fuel computation necessary to transport, package, and sell food. The localized production allows residents to purchase food that was grown within their community.
  - Greenspace creation. The
    greenspace created through urban
    agriculture forms adds aesthetic
    benefits, reduces stormwater runoff,
    mitigates the heat island effect, and
    provides space for recreation for the
    community.



Chamblee can adopt urban agriculture typologies and assign them to appropriate zoning districts.

# Adopt Urban Agriculture Typologies

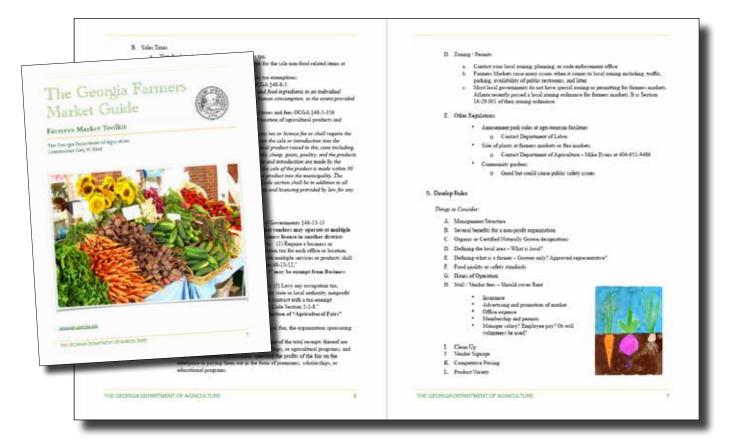
Chamblee can adopt urban agriculture typologies and assign to Chamblee's appropriate zoning districts. Typologies and their definition of typologies can be found on the next page.

Potential issues that must be considered include:

- Increased traffic;
- Increasing parking requirements;
- Waste management;
- Buffers;
- Runoff; and
- Security.

Specific regulations which must be considered and managed with the development of an urban agriculture zoning ordinance include, per the Georgia Farmers Market Guide, Farmers Market Toolkit from the Georgia Department of Agriculture.

- Food safety.
- Sales taxes:
  - Non-food products should collect full sales tax.
  - Food products have state and some City sales tax exemptions.
- Business licenses:
  - Prohibitions on occupation tax levies by local governments.
- · Zoning/permits.
- Other regulations:
  - Amusement park rides at agritourism facilities.
  - Sale of plants at farmers markets or flea markets.
  - Community gardens.



#### Farmers Market



An indoor or outdoor establishment involving sale of farm products, personally prepared food and handcrafted goods. May include concurrent special events, including cooking demonstrations, activities for children, and small scale presentations.

#### Urban Farm



An area of land or space managed and maintained by a farmer to grow and harvest food and/or non-food crops for sale, donation, or in subscription-based distribution. Does not include space for sales or processing beyond preparation for transport.

#### Community Garden



An area of land or space managed and maintained by a group of individuals to grow and harvest food and/or nonfood crops for personal or group use, consumption, or donation. Community gardens may be divided into separate plots, and/or have common areas.

#### Market Garden



An area of land managed and maintained by an individual or group of individuals to grow and harvest food and/or non-food crops to be sold for profit on site.

#### Greenhouse, Nursery



An establishment whose principal activity is the sale of plants grown on the site, which may include outdoor storage, growing or display, and may include sales of lawn furniture and garden supplies.

#### Vertical Farms



A structure supported by a wall containing planting media and plantings.

#### Green Roof



An area atop a building with intensive or extensive planting media supporting plantings.

Typologies	Issues & Considerations	Uses
Farmers Markets	<ul> <li>Increased parking need in residential settings. Shared parking is desirable. Recommended to not have a parking requirement for dense, transit accessible locations.</li> <li>Space and timing of loading of vendor supplies.</li> <li>Customer waste disposal: shopping, water, restrooms.</li> </ul>	<ul> <li>Food uses: cultivation, aquaponics, aquaculture, composting, hydroponics.</li> <li>Animal uses: bees, yardfowl, fish, rabbits, goats.</li> <li>Human uses: retail and sales, seasonal sales, equipment and commercial vehicles, temporary outdoor events, outdoor eating areas, farming operations.</li> <li>Buildings: outdoor structures and storage, hoop houses, greenhouses, aquaculture structures.</li> </ul>
Urban Farm	<ul> <li>Uncultivated buffer between cultivation area and residential uses.</li> <li>Animal waste disposal.</li> <li>Customer waste disposal: shopping, water, restrooms.</li> <li>Runoff drainage to off-site.</li> </ul>	<ul> <li>Food uses: cultivation, aquaponics, aquaculture, composting, hydroponics.</li> <li>Animal uses: bees, yardfowl, fish, rabbits, goats, animal husbandry, bovine, sheep, horses.</li> <li>Human uses: seasonal sales, agricultural services, equipment and commercial vehicles, temporary outdoor events, outdoor eating areas, caretakers dwelling, woodlots, farming operations, meadows.</li> <li>Buildings: outdoor structures and storage, hoop houses, greenhouses, aquaculture structures.</li> </ul>

Typologies	Issues & Considerations	Uses
Community Garden	<ul> <li>Connectivity and pathways accessibility.</li> <li>Security.</li> <li>Animal waste disposal.</li> <li>Community facilities: waste disposal, water, restroom.</li> </ul>	<ul> <li>Food uses: cultivation, aquaponics, aquaculture, composting, hydroponics.</li> <li>Animal uses: bees, yardfowl, fish, rabbits, goats.</li> <li>Human uses: seasonal sales, agricultural services, equipment and commercial vehicles, temporary outdoor events, outdoor eating areas, caretakers dwelling, woodlots, farming operations, meadows.</li> <li>Buildings: outdoor structures and storage, hoop houses,</li> </ul>
		greenhouses, aquaculture structures.
Market Garden	<ul> <li>Increased traffic to the area if residential.</li> <li>Increased parking need. Recommended to not have a parking requirement (i.e. provide access to parking) for dense locations.</li> <li>Space and timing of loading of vendor supplies.</li> <li>Animal waste disposal.</li> <li>Customer waste disposal: shopping, water, restrooms.</li> <li>Connectivity and pathways accessibility.</li> </ul>	<ul> <li>Food uses: cultivation, aquaponics, aquaculture, composting, hydroponics.</li> <li>Animal uses: bees, yardfowl, fish, rabbits, goats.</li> <li>Human uses: retail and sales, seasonal sales, equipment and commercial vehicles, temporary outdoor events, outdoor eating areas, farming operations.</li> <li>Buildings: outdoor structures and storage, hoop houses, greenhouses, aquaculture structures.</li> </ul>

Typologies	Issues & Considerations	Uses
Greenhouses & Nurseries	<ul><li>Irrigation source.</li><li>Security.</li></ul>	Food uses: cultivation, aquaponics, aquaculture, composting, hydroponics.
		<ul> <li>Animal uses: bees, yardfowl, fish, rabbits.</li> </ul>
		Human uses: retail and sales, seasonal sales, agricultural services, equipment and commercial vehicles, temporary outdoor events, outdoor eating areas, farming operations.
		Buildings: outdoor structures and storage, hoop houses, greenhouses, aquaculture structures.
Vertical Farms	Irrigation source.	<ul> <li>Food uses: cultivation, aquaponics, aquaculture, composting, hydroponics.</li> </ul>
		<ul> <li>Animal uses: bees, yardfowl, fish, rabbits.</li> </ul>
		Human uses: seasonal sales, equipment and commercial vehicles, farming operations.
		Buildings: outdoor structures and storage, greenhouses, aquaculture structures.
Green Roof	<ul><li>Irrigation source.</li><li>Accessibility.</li></ul>	<ul> <li>Food uses: cultivation, composting, hydroponics.</li> </ul>
	Accessionity.	<ul> <li>Animal uses: bees, yardfowl, rabbits.</li> </ul>
		Human uses: seasonal sales, temporary outdoor events, outdoor eating areas, meadows.



# Bee-Friendly Policies

Bees are an important component of all forms of agriculture. According to Bee City USA, one in three bites of food we consume is courtesy of insect pollination and 90% of the world's flowering plants depend on pollinators to reproduce. Research is showing that across the world, pollinator population sizes are declining (44% annually in the United States), prompting a need to prevent the extinction of bees and other pollinators. If pollinators disappear from the world, nearly all plant species (and food sources!) will cease to exist.



Attain Bee City certification.

The mission of Bee City USA is to raise awareness of the role native pollinators play in communities and to create sustainable habitats for them. The benefits of becoming a Bee City include resources of program promotion, receiving accountability to achieving pollinator conservation results each year, and provides support and collaboration on maintaining healthy pollinator habits.

# **O** POLICY

Develop and adopt pollinator-friendly policies for City operations and City contractors.

# **REGULATION**

Develop and adopt pollinator-friendly ordinances for businesses and residents.

# **REGULATION**

Require registration of landscape pesticide spray applicators within city limits, and make applicator aware of ordinance.

#### Sources

- http://agr.georgia.gov/Data/Sites/1/media/ ag\_marketing/The-Farmers-Market-Guide.pdf
- https://publicleadershipinstitute.org/modelbills/environment-smart-growth/pollinatorprotection-act/

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# Governance & Outreach

### Chamblee Sustainability Partnership



Create the Chamblee Sustainability Partnership to take ownership of sustainability initiatives within Chamblee city limits.

An internal staff team responsible for sustainability initiatives is recommended with the task to:

- Empower organizations working on sustainability issues;
- Provide continuity for ongoing efforts;
- Facilitate professional input for municipal initiatives; and
- Raise a more diverse awareness among citizens.

Adapted from the Burlington Sustainability Partnership, the partnership would be an initiative convened by City staff and would:

- Direct strategic vision, project implementation, and select projects;
- Develop sustainability messages;
- Define meeting schedules, work plans, reporting requirements, and work groups for selected projects; and
- Identify metrics to measure progress.

Outside partnerships should be sought including:

- Keep Chamblee Beautiful;
- CDC:

- Chambers of Commerce;
- PDK;
- · Large commercial landowners; and
- Homebuilders.

Potential goals of the internal staff team should be considered as follows:

- Director of Sustainability position generated from an Energy Manager role;
- Climate Action Plan:
- Clean Energy Goal;
- · Resilience Plan; and
- · Municipal Certification (STAR, LEED City, etc).

Chamblee Director of Sustainability



# **ACTION ITEM**

Create a Director of Sustainability position after civic infrastructure has developed to the point that major initiatives have been undertaken, and hire a part-time Energy Manager.

The sustainability director would always seek first to empower local organizations in sustainability initiatives. Stewarding the issue with part time help can be an important interim step. Many municipalities initiate efforts with an Energy Manager position. Often part time, and with an initially large task of benchmarking, the position can mature into the more diverse director position. Municipalities often find that the Energy Manager position can pay for itself with energy savings from municipal utilities.

#### Other In-House Efforts

In order to maintain the Sustainability Plan, the following are recommended:

- Annual review and maintenance of sustainability measures in the UDO;
- · Staff-wide education sessions of sustainability efforts;
- Annual report of accomplishments; and
- A 5-year Sustainability Plan update.

#### Outreach Events

Rain Barrel Workshop



# PROGRAM

Host an annual rain barrel workshop for residents and property owners.

It is recommended that the City host an annual rain barrel workshop to teach residents and property owners the benefits of using rain barrels for water conservation and stormwater management. The workshop would stress how rain barrels provide an additional source of water for landscaping and help to prevent erosion from stormwater runoff. Workshops will also include information on other forms of green infrastructure and best practices related to landscaping. Each participant would receive a rain barrel and installation kit.

Youth Outreach



# **PROGRAM**

Create a youth outreach program with other community partners to educate and involve youth in matters of sustainability.

Doing sustainability outreach with Chamblee's youngest residents will help create a generation concerned about environmental matters. Not only is education about sustainability key, but getting them involved in decision-making and hands-on projects will give them a unique perspective. Currently, students from Chamblee Charter High School volunteer for park clean-ups and recycling events. The school's Environmental Science Club serve an ongoing advisory role in the City's planning efforts.

Enhanced youth outreach could include the following:

- Youth Sustainability Committee. The City, in partnership with Keep Chamblee Beautiful, could create a Youth Sustainability Committee comprised of middle and high school and local college students to meet a few times a year with Keep Chamblee Beautiful to discuss sustainability initiatives within the city and contribute ideas. This would be a more hands-on role than the high school's Environmental Science Club and would include a larger variety of youth.
- Landscaping projects. In addition to hosting regular clean-up events, high school students could have the opportunity to participate in local landscaping and maintenance projects that utilize green infrastructure.

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#### General Education

Elementary School Program



# PROGRAM

Create a formalized elementary school education program to foster a lifelong appreciation of sustainability in the City's youngest residents.

The City, in partnership with Keep Chamblee Beautiful, could help Chamblee's elementary schools create a formal sustainability education program. Some ideas for this program include:

- Create a curriculum for sustainability education at each grade level to supplement science and social studies lessons:
- Host an annual Sustainability Week that includes lecture series for students and opportunities to do hands-on learning projects that they can then showcase to the public:
- Plant community gardens at or near the school properties to teach students about sustainable food production; and
- Host annual park and trail clean-up events to teach students about the negative effects of decomposing, inorganic waste on the immediate environment.

#### Other Educational Programs & Initiatives

If a formalized elementary school program is successful, efforts can be made to create similar programs at the middle and high school level. Some ideas include:

- Create a sustainability elective course;
- A Sustainability Career Day where professionals working in various fields

- pertaining to sustainability could visit students to teach them about careers in sustainability; and
- Outreach to college-bound students about post-secondary institutions that offer majors and specialized programs related to sustainability, particularly those related to STEM fields, architecture, agriculture, horticulture, et cetera.

Sustainability education doesn't have to stop after high school. The following list opportunities for more outreach and educational programs and initiatives:



# **INITIATIVE**

Develop more materials and events aimed at educating the general public about sustainability in the City of Chamblee.



# INITIATIVE

Continue to host educational opportunities for green infrastructure targeted at building inspectors, designers, developers, and contractors.



# **ACTION ITEM**

Host drain marker events for stormwater education.



# **ACTION ITEM**

Add educational signage at existing stormwater infrastructure systems, like bioswales and rain gardens.



This plan makes other references to education opportunities about sustainability throughout, including:

- Workshops, such as a rain barrel workshop;
- Teaching the community about sustainable, local agriculture to create the connection to where food comes from via urban agriculture;
- Educational programs about energy efficiency for people involved in the architecture, construction, and engineering fields;
- Continuous education of City staff; and
- · Public education via the distribution of educational materials and messages about sustainability, both hard copy and on the City's website.

# Implementation

# **Action Matrix**

The Action Matrix on pages 60-83 outlines the recommendations described in this plan, providing details about timeline, responsible parties, estimated costs, and funding sources. Many of these projects will utilize staff time. Funding may come from the City's general fund, stormwater utility fees, recompense fees, or from a Green Revolving Loan Fund, although the Matrix does not identify specific projects that may be funded with that funding source.

# Responsible Parties

# Regulations

The regulations that are most likely to be instrumental in implementing the plan are zoning and other development regulations (via the UDO). The Sustainability Plan suggests regulatory changes to help advance the City's goals.

#### Elected Officials

Not only do elected officials vote to adopt new and amended ordinances, they are important in the timeline and implementation of individual projects, whether they be public or private sector.

# City Staff & Agencies

Most public projects will be managed by the City of Chamblee's staff in various departments and agencies:

- Planning & Development;
- · Public Works;
- · Parks & Recreation; and

Some projects may require the heavy use of staff time, instead of the use of funds.

## Community Partners

Community partners may include non-profits, agencies outside of Chamblee, schools, special interest groups, and advocacy groups. While not every project may warrant their participation, care should be taken to involve the appropriate groups when necessary to ensure a project's success.

These community partners may include the following organizations:

- DeKalb County;
- DeKalb County Schools;
- Keep Chamblee Beautiful;
- · CHaRM;
- Neighborhood associations; and
- · St. Pius X Catholic High School.

# Green Funding Sustainability Initiatives

Chamblee should establish a **Green Revolving**Loan Fund (GLF) utilizing an annual appropriation.
The fund should be set aside on the City's balance sheet as an asset. The fund would finance energy conserving projects on city facilities. The fund would be "paid back" with projected savings for the life of the measure, sometimes just until the cost and "fees" are repaid on more durable measures. The payments would re-accumulate and become available for additional investments.

Once a loan is approved, a department moves forward with the project and sends invoices to the fund administration (Financial Officer), where the department then receives the loan in the form of an internal fund transfer to reimburse the actual cost of the project based on the invoiced amount. The department begins repaying the loan at the start of the fiscal year following project completion and according to a payback schedule determined by the cost of the project and annual cost savings.

Specifically, the fund would go for "beyond code" improvements such as higher levels of insulation, increased equipment efficiency, and higher performing fenestration and only pay for the incremental cost. An approved project must result in a direct reduction of costs and environmental impact for the city with a simple payback period of five years or less, based on cost savings. Thus, the GLF allows

departments to improve their environmental and financial performance without any up-front capital costs. The loan application requires an engineering study or other form of documentation demonstrating the case behind the projected cost and resource savings.

Based upon the size of Chamblee's portfolio, an annual appropriation of \$10,000 with a target initial fund size of \$50,000 is suggested.

Some findings from similar funds:

- Designated staff must support the fund and advocate for project proposals within City facilities.
- Projects must be thoroughly reviewed and carefully implemented, especially in the stages of calculating performance and cost savings.

Funding and implementation of sustainability initiatives in Chamblee can be achieved in other ways:

- Investigate potential changes to green fund. Currently, developers opt in to tree recompense fund, which can be used toward greenspace development.
- Community education about the existence of a recompense fund and what it's used for.
- Consider a "transfer of tree planting" rights program. Develop sending and receiving provisions to allow developers with tree planting requirements to plant trees off-site.

ID	Project Name & Description	2020	2021	2022	2023	2024
Land	Use					
1	<b>Tree Canopy Maintenance.</b> Evaluate effectiveness of current tree planting programs (No-net loss of trees, Front Yard Tree Program).	Х		X		X
2	Develop Cool Roof Retrofit and Construction Policy for Municipal Buildings. Categorize municipal owned building roof ages to determine which should be replaced.			X		
3	Develop Cool Roof Retrofit and Construction Policy for Municipal Buildings. Develop policy for retrofit and installation of cool roofs.			X		
4	Develop Cool Roof Retrofit and Construction Policy for Municipal Buildings. Retrofit and install cool roofs.				Х	X
5	Cool Roof Regulation. Complete community outreach and education on cool roof benefits.					Х
6	Cool Roof Regulation. Amend building code amendments to require cool roofs on all residential and commercial construction in city.					Х
7	Evaluate and Strengthen Current Tree Preservation Ordinance. Complete tree removal process mapping to identify drivers of tree loss.					X

Responsible Parties	Estimated Cost	Funding Sources	Notes
Planning and Development; Public Works; Parks and Recreation; Keep Chamblee Beautiful; External consultant	Staff: 60 hours	General fund	
Planning and Development; Public Works; External consultant	Staff: 80 hours	General fund	Information Sources: US EPA, US DOE, roofing industry associations (EPDM Roofing Association, National Roofing Contractors Association, Roof Coating Manufacturers Association)
Planning and Development; Public Works; External consultant	Staff: 40 hours	General fund	Information Sources: US EPA, US DOE, roofing industry associations (EPDM Roofing Association, National Roofing Contractors Association, Roof Coating Manufacturers Association)
Planning and Development; Public Works; External consultant	Staff: 200 hours; TBD	General fund; Georgia Environmental Finance Authority	Information Sources: US EPA, US DOE, roofing industry associations (EPDM Roofing Association, National Roofing Contractors Association, Roof Coating Manufacturers Association)
Planning and Development; Public Works; External consultant	Staff: 50 hours	General fund	Information Sources: US EPA, US DOE, roofing industry associations (EPDM Roofing Association, National Roofing Contractors Association, Roof Coating Manufacturers Association)
Planning and Development; Public Works; External consultant	Staff: 10 hours; \$1,000	General fund	Information Sources: US EPA, US DOE, roofing industry associations (EPDM Roofing Association, National Roofing Contractors Association, Roof Coating Manufacturers Association)
Planning and Development; Keep Chamblee Beautiful; External consultant	Staff: 100 hours	General fund	

ID	Project Name & Description	2020	2021	2022	2023	2024
Land	Use (con't)					
8	Evaluate and Strengthen Current Tree Preservation Ordinance. Establish ecological service goals for urban ecological systems (tree canopy, streams, etc).					Х
9	Evaluate and Strengthen Current Tree Preservation Ordinance. Evaluate current tree preservation ordinance with respect to ecological service goals.					X
10	Evaluate and Strengthen Current Tree Preservation Ordinance. Re-write/improve tree preservation ordinance to reach ecological service goals.					X
11	Evaluate and Strengthen Current Tree Preservation Ordinance. Study impact of additional need for ecological service preservation ordinance.					X
Mate	rials Management					
12	<b>Establish Community Recycling Education Program.</b> Evaluate current community recycling program - determine if single waste stream or other tactic produces best results for waste diversion.	X				
13	Establish Community Recycling Education Program. Implement pilot composting program at first community garden.	Х				
14	Establish Community Recycling Education Program. Develop community recycling education program.	Х				
15	Develop and Pass a Multi-Family Recycling Ordinance. Complete outreach with multi-family properties to establish best practice for recycling.			X		
16	Develop and Pass a Multi-Family Recycling Ordinance. Adopt ordinance requiring multi- family recycling pick-up.			X		
17	Construction and Demolition Waste Reductions. Adopt ordinance to require construction and demolition waste reductions.		X			

Responsible Parties	Estimated Cost	Funding Sources	Notes
Planning and Development; Keep Chamblee Beautiful; External consultant	Staff: 40 hours	General fund	
Planning and Development; Keep Chamblee Beautiful; External consultant	Staff: 20 hours	General fund	
Planning and Development; Keep Chamblee Beautiful; External consultant	Staff: 40 hours	General fund	
Planning and Development; Keep Chamblee Beautiful; External consultant	Staff: 20 hours	General fund	
Public Works; Planning and Development	Staff: 20 hours	General fund	
Public Works; Planning and Development	Staff: 50 hours	General fund	
Public Works; Planning and Development	Staff: 100 hours; \$5,000	General fund	
Public Works; Planning and Development	Staff: 50 hours; \$1,000	General fund	
Public Works; Planning and Development	Staff: 25 hours; \$2,500	General fund	
Public Works; Planning and Development	Staff: 20 hours; \$2,000	General fund	

ID	Project Name & Description	2020	2021	2022	2023	2024
Mate	rials Management (con't)					
18	Home Hazardous Waste (HHW). Continue to host bi-annual events for residents to drop off HHW to be properly disposed.	×	X	X	X	X
19	Electronics Recycling. Continue partnership with CHaRM to accept electronics for recycling.	X	X	X	X	X
Energ	ВУ					
20	Enhance energy codes by implementing IECC 2015 Code with Chamblee Amendments. Adopt IECC 2015 code without Georgia Amendments or greater.			X		
21	Enhance energy codes to incentivize green energy. Amend energy code to improve building thermal envelope components, duct leakage requirements, and building envelope building leakage requirements to <5 ACH50.			X		

Responsible Parties	Estimated Cost	Funding Sources	Notes
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Public Works; Planning and Development; CHaRM, Keep Chamblee Beautiful	Staff: 50 hours; \$40,000 (annually)	General fund	
Public Works; Planning and Development; CHaRM	Staff: 50 hours; \$15,000 (annually)	General fund	
Planning and Development	Staff: 20 hours; \$2,000	General fund; Enterprise fund	Information Sources: Building Codes Assistance Project, Alliance to Save Energy, Institute for Market Transformation
Planning and Development	Staff: 40 hours; \$3,000	General fund; Enterprise fund	Information Sources: Building Codes Assistance Project, Alliance to Save Energy, Institute for Market Transformation

ID	Project Name & Description	2020	2021	2022	2023	2024
Energ	gy (con't)					
22	Implement High Performance Building Stretch Code. Re-write current green building requirements for commercial building to correctly align with policy (see notes column).				X	
23	Increase compliance with energy code through better enforcement. Implement a recurring energy code training program for inspectors.  This training should include in-field training as well as plan review training.		X	X	X	X
24	Increase compliance with energy code through better enforcement. Require training for all trade contractors in City.					X
25	Increase compliance with energy code through better enforcement. Require continuing education for inspectors.		Х	Х	X	X

Responsible	Estimated	Funding	Notes
Parties	Cost	Sources	
Planning and	Staff: 40 hours;	General fund;	Chamblee has a hybrid approach to building performance with green building program elements required of new commercial construction and renovations. Adoption of a High Performance Building Standard written as such (ASHRAE Standard 189 and other permissive codes) and allowing green building program as a compliance pathway removes the Technical Advisors from the regulatory role. The importance of testing and commissioning on new construction would be enhanced under this approach.  Improved Energy Code enforcement and upgrading to un-amended IECC.  Notify Georgia Department of Community Affairs of the city's intent to adopt permissive codes.  Conduct an education program for the Architecture Engineering Construction industries.
Development	\$3,000	Enterprise fund	
Planning and	Staff: 100	General fund;	
Development	hours; \$2,000	Enterprise fund	
Planning and Development	Staff: 10 hours	General fund; Enterprise fund	
Planning and Development	Staff: 40 hours	General fund; Enterprise fund	

ID	Project Name & Description	2020	2021	2022	2023	2024
Energ	gy (con't)					
26	Increase compliance with energy code through better enforcement. Create industry outreach program for trade contractors that build in Chamblee.				X	Х
27	Increase compliance with energy code through better enforcement. Schedule workshops and training options to educate trade contractors on energy code changes.				X	Х
28	Increase compliance with energy code through better enforcement. Develop in-field resources for trade contractors to ensure proper installation and compliance with energy code.		X			
29	Increase compliance with energy code through better enforcement. Develop and implement energy code enforcement policies.		Х			
30	Increase compliance with energy code through better enforcement. Allow for an optional Energy Rating Index compliance path.	1	X			
31	Increase compliance with energy code through better enforcement. Require submittal and review of load calculations for permitting.	X				
32	Facilitate industry change through industry outreach and education. Complete building department outreach to notify the industry of how they intend to enforce the testing requirements, new provisions in the energy code, and to ensure effective adoption throughout Georgia.			X		
33	Facilitate industry change through industry outreach and education. Develop and provide builders copies of practical resources that would help improve compliance and promote best practices including field guides and online tools.	Х	X	Х	Х	Х

Responsible Parties	Estimated Cost	Funding Sources	Notes
Planning and Development	Staff: 20 hours; \$5,000	General fund; Enterprise fund	
Planning and Development	Staff: 20 hours; \$5,000	General fund; Enterprise fund; Georgia Environmental Finance Authority	The Georgia Environmental Finance Authority sponsors trainings
Planning and Development	Staff: 10 hours; \$2,500	General fund; Enterprise fund; Georgia Environmental Finance Authority	The Georgia Environmental Finance Authority sponsors trainings
Planning and Development	Staff: 50 hours	General fund; Enterprise fund	
Planning and Development	Staff: 10 hours	General fund; Enterprise fund	Possible support from the Residential Energy Services Network
Planning and Development	Staff: 10 hours	General fund; Enterprise fund	
Planning and Development	Staff: 30 hours	General fund	
Planning and Development	Staff: 10 hours; \$5,000	General fund	

ID	Project Name & Description	2020	2021	2022	2023	2024
Energ	gy (con't)					
34	Facilitate industry change through industry outreach and education. Leverage established relationships with professional organizations, agencies, and other partners to promote trainings and resources and inform them of regular compliance issues.	Х	Х	X	X	X
35	Incentivize commercial building energy conservation through voluntary benchmarking. Implement a voluntary benchmarking program.			Х	Х	
36	Incentivize commercial building energy conservation through voluntary benchmarking.  Map existing and needed partnerships such as business districts, owners and managers associations, and Chambers of Commerce to implement benchmarking program.				X	
37	Incentivize commercial building energy conservation through voluntary benchmarking.  Create an engagement and recruitment strategy for city to gather benchmarking participants.			X		
38	Assess voluntary benchmarking program.  Evaluate program to determine if voluntary program is adequate.			Х		
39	Assess voluntary benchmarking program.  Evaluate program to determine program success and if/how a mandatory ordinance would advance progress.			X		
40	Assess voluntary benchmarking program.  Complete education and outreach with stakeholders.			X		
41	Assess voluntary benchmarking program. If it is determined that a mandatory ordinance is needed to advance the program's progress, craft and pass benchmarking ordinance.			X		

Responsible Parties	Estimated Cost	Funding Sources	Notes
Planning and Development	Staff: 20 hours	General fund	
Planning and Development	Staff: 50 hours	General fund	Support from US DOE
Planning and Development	Staff: 10 hours; \$5,000	General fund	Support from US DOE
Planning and Development	Staff: 50 hours	General fund	Support from US DOE
Planning and Development	Staff: 20 hours	General fund	Support from US DOE
Planning and Development	Staff: 50 hours	General fund	
Planning and Development	Staff: 20 hours	General fund	
Planning and Development	Staff: 20 hours; \$2,000	General fund; City Energy Project, National Resource Defense Council, Bloomberg Philanthropies	

ID	Project Name & Description	2020	2021	2022	2023	2024
Energ	y (con't)					
42	Assess voluntary benchmarking program. If a mandatory ordinance passes, partner with consultant or find capacity within the City to provide technical assistance.			X		
43	<b>Electrify Fleet Vehicles.</b> Conduct internal research and investigate funding options to support fleet electrification.	X				
44	<b>Electrify Fleet Vehicles.</b> Contact utility provider to discuss options and incentives for fleet electrification.		X			
45	<b>Electrify Fleet Vehicles.</b> Perform internal drive cycle analyses for fleet vehicles' average duty cycle and create timeline for retirement of vehicles.		X			
46	Electrify Fleet Vehicles. Utilize Alternative Fuels Data Centers tools to pick the appropriate EV that would hold the highest ROI and research laws and incentives in the State of Georgia.		X			
47	<b>Electrify Fleet Vehicles.</b> Consult with other jurisdictions for best practices, such as Cobb and DeKalb Counties.		X			
Water	-	T	Г	T	T	Т
48	Incentivize commercial building water conservation through voluntary benchmarking.  Map existing and needed partnerships such as business districts, owners and managers associations, and Chambers of Commerce to implement benchmarking program.				X	
49	Assess voluntary benchmarking program.  Evaluate program to determine if voluntary program is adequate.			Х	Х	
50	Assess voluntary benchmarking program.  Evaluate program to determine program success and if/how a mandatory ordinance would advance progress.			X		

Responsible Parties	Estimated Cost	Funding Sources	Notes
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Planning and Development	Staff: 60 hours; \$7,000	General fund; City Energy Project, National Resource Defense Council, Bloomberg Philanthropies	
Public Works	Staff: 24 hours	General fund	Consider partnership with Clean Cities- Georgia to help apply for grants.
Public Works	Staff: 5 hours	General fund	Consider partnership with Clean Cities- Georgia to help apply for grants.
Public Works	Staff: 24 hours	General fund	Consider partnership with Clean Cities- Georgia to help apply for grants.
Public Works	Staff: 24 hours	General fund	Consider partnership with Clean Cities- Georgia to help apply for grants.
Public Works	Staff: 10 hours	General fund	Consider partnership with Clean Cities- Georgia to help apply for grants.
	T		
Planning and Development	Staff: 10 hours; \$5,000	General fund	
Planning and Development	Staff: 20 hours	General fund	
Planning and Development	Staff: 50 hours	General fund	

ID	Project Name & Description	2020	2021	2022	2023	2024
Wate	r (con't)					
51	Assess voluntary benchmarking program.  Complete education and outreach with stakeholders.			Х		
52	Assess voluntary benchmarking program. If it is determined that a mandatory ordinance is needed to advance the program's progress, craft and pass benchmarking ordinance.			X		
53	Assess voluntary benchmarking program. If a mandatory ordinance passes, partner with consultant or find capacity within the city to provide technical assistance.			X		
54	<b>Set Green Infrastructure goals.</b> Encourage road improvement projects to handle water quality issues through green infrastructure and other BMPs.	X				
55	Set Green Infrastructure goals. Adopt code requirements that aim to reduce parking lot runoff and require a percentage of runoff to be treated on-site through green infrastructure measures.	X				
56	<b>Set Green Infrastructure goals.</b> Require all low- impact development features be recorded as permanent easements to protect water quality measures from being demolished.	X				
57	<b>Set Green Infrastructure goals.</b> Amend code requirements to define green roofs and ensure that green roofs count up to 75% towards open space requirements.	Х				
58	Support the development of green infrastructure maintenance and inspection protocols. Adopt standardized routine maintenance and inspection activities for green infrastructure within the City.		X			

Responsible Parties	Estimated Cost	Funding Sources	Notes
Planning and Development	Staff: 20 hours	General fund	
Planning and Development	Staff: 20 hours; \$2,000	General fund; City Energy Project, National Resource Defense Council, Bloomberg Philanthropies	
Planning and Development	Staff: 60 hours; \$7,000	General fund; City Energy Project, National Resource Defense Council, Bloomberg Philanthropies	
Planning and Development; Parks and Recreation	Staff: 10 hours	General fund	
Planning and Development; Parks and Recreation	Staff:10 hours; \$1,500	General fund	
Planning and Development; Parks and Recreation	Staff: 20 hours; \$1,500	General fund	
Planning and Development; Parks and Recreation	Staff: 10 hours; \$1,500	General fund	
Planning and Development; Parks and Recreation	Staff: 20 hours; \$2,000	General fund	

ID	Project Name & Description	2020	2021	2022	2023	2024
Wate	r (con't)					
59	Promote Water Harvesting and Reuse. Adopt requirement stating that all cooling tower installations greater than 10-tons have their blowdown water requirement met by rainwater harvesting.			Х		
60	Promote Water Harvesting and Reuse.  Promote the use of rainwater harvesting to meet irrigation needs.	X	Х	X	Х	X
61	Green Infrastructure Demonstration Project: Select a location to install a GI demonstration project which educates public on benefits of GI. Select installation location.			X		
62	Green Infrastructure Demonstration Project: Select a location to install a GI demonstration project which educates public on benefits of GI. Install education signage at site describing benefits of GI project.			X		
63	Green Infrastructure Demonstration Project: Select a location to install a GI demonstration project which educates public on benefits of GI. Contract with design and implementation firm for GI project.			х		
64	Green Infrastructure Demonstration Project: Select a location to install a GI demonstration project which educates public on benefits of GI. Identify GI practice most appropriate for site.				X	
65	Green Infrastructure Demonstration Project: Select a location to install a GI demonstration project which educates public on benefits of GI. Install GI demonstration project and education signage.				X	
66	Green Infrastructure Demonstration Project: Select a location to install a GI demonstration project which educates public on benefits of GI. Create education program for residents around GI installation.				X	

Responsible Parties	Estimated Cost	Funding Sources	Notes
Planning and Development; Parks and Recreation	Staff: 10 hours; \$1,500	General fund	
Planning and Development; Parks and Recreation	Staff:10 hours; \$1,500	General fund	
Planning and Development; Parks and Recreation; Public Works	Staff: 20 hours; \$5,000	Stormwater utility fee	Planned for Village Park
Planning and Development; Parks and Recreation; Public Works	Staff: 20 hours; \$5,000	Stormwater utility fee	
Planning and Development; Parks and Recreation; Public Works	Staff: 20 hours	Stormwater utility fee	
Planning and Development; Parks and Recreation; Public Works	Staff: 20 hours	Stormwater utility fee	
Planning and Development; Parks and Recreation; Public Works	Staff: 100 hours; \$65,000	Stormwater utility fee	
Planning and Development; Parks and Recreation; Public Works	Staff: 30 hours; \$5,000	Stormwater utility fee	

ID	Project Name & Description	2020	2021	2022	2023	2024	
Local	Local Food Production						
67	<b>Urban Agriculture Typologies.</b> Complete public outreach to determine urban agriculture goals.		X				
68	<b>Urban Agriculture Typologies.</b> Implement pilot project for public gardens.	X					
69	<b>Urban Agriculture Typologies.</b> Study current land use character zones and complementary urban agriculture typologies.		X				
70	<b>Urban Agriculture Typologies.</b> Implement urban agriculture typologies into land use code.		X				
71	<b>Bee-Friendly Policies.</b> Attain Bee City certification.		X				
72	<b>Bee-Friendly Policies.</b> Develop and adopt pollinator-friendly policies for City operations and City contractors.			Х			
73	<b>Bee-Friendly Policies.</b> Develop and adopt pollinator-friendly ordinance for businesses and residents.				X		
74	<b>Bee-Friendly Policies.</b> Require registration of landscape pesticide spray applicators within city limits, and make applicators aware of ordinance.					X	

Responsible Parties	Estimated Cost	Funding Sources	Notes
Planning and Development	Staff: 50 hours	General fund	
Planning and Development; Parks and Recreation	Staff: 200 hours; \$10,000	General fund	
Planning and Development	Staff: 20 hours	General fund	
Planning and Development	Staff: 20 hours	General fund	
Planning and Development	Staff: 80 hours	General fund	
Planning and Development	Staff: 40 hours	General fund	
Planning and Development	Staff: 120 hours	General fund	
Planning and Development	Staff: 120 hours	General fund	

ID	Project Name & Description	2020	2021	2022	2023	2024
Gove	rnance & Outreach					
75	Develop a Chamblee Sustainability Partnership. Develop a Chamblee Sustainability Partnership to empower organizations working on sustainability issues, provide continuity for ongoing efforts, facilitate professional input for municipal initiatives, raise a more diverse awareness among citizens.		X			
76	Hire a City Energy Manager to implement sustainability plan and find cost savings in energy management of City of Chamblee buildings.			X		
77	Transition Energy Manager position into Sustainability Director as energy savings provide funding and additional funding sources are identified.					Х
78	Review sustainability measures in UDO. Annual maintenance.	X	X	X	X	X
79	Require sustainable certification to be a minimum of 3 Green Globes and NGBS Silver.	X				
80	ARC Green Communities Platinum Certification.			X		
81	ARC Climate Conscious Community Designation.		X	Х	X	
82	Sustainability Plan 5-Year Update.					X
83	Staff education of sustainability efforts.	X	X	X	X	X
84	Annual report of accomplishments.	X	X	Х	X	Х

Responsible Parties	Estimated Cost	Funding Sources	Notes
Administration; Planning and Development	Staff: 300 hours	General fund	
Administration; Planning and Development	Staff: 50 hours; \$50,000	General fund; Urban Sustainability Directors Network; Southeastern Sustainability Directors Network	
Administration; Planning and Development	Staff: 50 hours; \$60,000	General fund; Revolving loan fund	Salary would be funded through the general fund; improvements would be funded through the revolving loan fund
Planning and Development	Staff: 50 hours	General fund; Savings from energy efficiency	
Planning and Development	Staff: 10 hours	General fund	
Planning and Development	Staff: 120 hours	General fund	
Planning and Development	Staff: 120 hours	General fund	
Planning and Development	Staff: 500 hours	General fund	5-year update will be completed inhouse.
Planning and Development	Staff: 200 hours; \$5,000	General fund	
Planning and Development	Staff: 100 hours	General fund	

ID	Project Name & Description	2020	2021	2022	2023	2024
Gove	rnance & Outreach (con't)					
85	Community Outreach. Rain barrel workshop.	X	X	X	X	X
86	Community Outreach. Youth Outreach Program.	Х	X	Х	X	X
87	Education. Formalized elementary school education program.		X	Х	Х	X
88	<b>Education</b> . Develop more materials and events aimed at educating the general public about sustainability in the City of Chamblee.		Х	Х	Х	Х
89	<b>Education.</b> Continue to host educational opportunities for green infrastructure targeted		Х	Х	X	X
90	Education. Host drain marker events for stormwater education.		X	X	X	X
91	<b>Education.</b> Add educational signage at existing stormwater infrastructure systems, like bioswales and rain gardens.		X	X	X	X

Responsible Parties	Estimated Cost	Funding Sources	Notes
Planning and Development; Parks and Recreation; Public Works	Staff: 50 hours; \$2,000	General fund	
Planning and Development; Parks and Recreation; Keep Chamblee Beautiful; Schools	Staff: 100 hours; \$10,000	General fund; Grants	The city, in partnership with Keep Chamblee Beautiful, could create a Youth Sustainability Committee comprised of middle and high school students to meet a few times a year to discuss sustainability initiatives in the city and contribute ideas.
Planning and Development; Keep Chamblee Beautiful; Elementary schools	Staff: 80 hours	General fund; Grants	
Planning and Development; Keep Chamblee Beautiful	Staff: 80 hours; \$20,000	General fund; Grants	
Planning and Development; Keep Chamblee Beautiful; Consultant	Staff: 24 hours; \$12,000	General fund; Grants	
Planning and Development; Keep Chamblee Beautiful	Staff: 80 hours;	General fund; Grants	
Planning and Development; Keep Chamblee Beautiful	Staff: 40 hours; \$1,000	General fund; Grants	

Total: 4,906 hours; \$586,500



