

DRAFT

**CHATTANOOGA INTEGRATED
COMMUNITY SUSTAINABILITY PLAN**

Objectives, Goals, and Strategies

JANUARY 2021



The *Chattanooga Integrated Community Sustainability Plan* is a community-informed project facilitated by the team at green|spaces. The project was generously supported by the Kendeda Fund.

Resilient Communities Committee

Marvene Noel; Becky English; Ben Mies; Cecil Williams; Pam Watson; Ken Jones; Bruce Blohm; Angela Oberschmidt; Caitlin Crawford; Ben Pitts; Geraldine Hendley; Teal Thibaud; Johnnie Ware

Eco-Systems Committee

Gene Hyde; Mark McKnight; Charlie Mix; Amy Katcher; Holly Martin; Matt Whitaker; James McKissic; Allison Evans; Daniel Talley; Casey Neal; Caleb Melchior; Allen Jones; Thomas Persinger; Robert Gray; Kristina Shaneyfelt; Stewart Ledford; Ongeleigh Underwood

Waste & Materials Committee

Lisa Darger; Ashley Bosecker; Crystal Parks; Sam Young; Harry McCann; John Sweet; Brad McAllister; Ongeleigh Underwood; Sadie Corbett; Zach McElrath

Energy Committee

Ken Jones; Daniel Pack; Erik Schmidt; Aaron Murray; Paul Teague; Ali Ahmed; Elizabeth Hammitt; Tiffany Gibby; Shane Axis

Mobility Committee

Philip Pugliese; Aaron Murray; Caitlin Crawford; Chandlee Caldwell; Gray Gill; Alex Tyler

Water Committee

Crystal Bishop, Mary Beth Sutton; Sara Neumann; Randy Whorton; Brian Watson; Clint Wayman; Ella Kliger; Megan Catalina; Margaret Miller; Anna Martz

green|spaces

63 E. Main Street, Suite 102
Chattanooga, TN 37408
p: (423) 648-0963
info@greenspaceschattanooga.org

CHATTANOOGA INTEGRATED COMMUNITY SUSTAINABILITY PLAN

Objectives, Goals, and Strategies



**IF NOT US,
THEN WHO?
IF NOT
NOW, THEN
WHEN?**

–John Lewis

Introduction

Gone are the days of referring to climate change as something future generations will have to combat. Extreme weather is already affecting Chattanooga, with neighborhoods including those of limited-income and people of color enduring the majority of negative effects. Examples of this include record-setting rainfall for the past two years causing massive sewage overflows to enter our waterways, landslides and flash flooding. We are now the 6th fastest warming city in the entire United States and 1st outside of the southwest, because of urban heat island effect in our downtown core and first ring neighborhoods. Air quality during these times dramatically decreases causing residents with asthma and other respiratory issues to incur additional health issues. Our green space and undeveloped land is quickly disappearing along with the plants and animals that inhabit those spaces.

Hope is not to be lost as Chattanooga has recognized the need to change many times throughout history. We have become the “Best Outdoor City” from the efforts of residents and private/public partnerships. Our drive to become a better place has brought us from the dark times of being the “Dirtiest City in America” by focusing community based projects like the Vision 2000 riverfront revitalization and the adoption and implementation of the 2009 Climate Action Plan.

Today, residents are more passionate than ever to make Chattanooga a place where all can thrive. This Integrated Community Sustainability Plan outlines a series of collective goals, values, strategies, and tactics to advance Chattanooga’s environmental, social, and economic sustainability. While it was facilitated by green|spaces, Chattanooga’s Sustainability Nonprofit, it has been written, and continues to be edited, by over 100 individuals representing over 50 organizations. All of the goals will require collaboration and collective action between a wide range of stakeholders including residents, businesses, non-profits, institutions, and government agencies. We have proven that these partnerships can be successful. Our community has collectively addressed to some extent over 90% of the projects outlined in the 2009 Climate Action Plan. Citywide carbon emissions have been reduced by 25%, much of that thanks to TVA closing coal plants, while simultaneously increasing our population by 14% and increasing GDP by 45%.

Now, in 2020, as we confront a series of challenges that individually would define any other generation, we come together again to recognize our progress but also to set bolder goals that will set the community on a course for a sustainable future where our social infrastructure and physical infrastructure are as diverse and resilient as the natural environment that encompasses it. We plan to leave the world, and Chattanooga, a better place than we found it.

THE PROCESS

In March of 2019, green|spaces launched the first session of the Integrated Community Sustainability Plan with residents, community leaders, and subject matter experts to investigate what topics and issues should be considered. After discussing a wide range of topics, participants recommended the Integrated Community Sustainability Plan focus on six themes: resilient communities, energy, water, mobility, ecosystems and materials/waste. All committees were open to the general public to join and diverse perspectives were included.

Planning committees were formed to research from best practices around the country and world to identify projects that could be replicated in Chattanooga. Examples include considering the Millvale and Etna EcoDistricts outside of Pittsburgh and the Sustainable DC Plan from Washington DC. Additionally, other community-based plans including the Chattanooga Chamber of Commerce's Velocity 2040 Vision and Thrive Regional Partnership were referenced to ensure that the goals were aligned.

Over the next six months, using this knowledge, committees created high level goals and underlying strategies. In March 2020, just before COVID-19 pandemic, the committees presented this information to a wide range of community stakeholders and additional feedback was solicited. With that feedback, the committees met virtually and made adjustments to develop additional detail for the strategies and tactics that underpin their long term goal.

This Integrated Community Sustainability Plan is a living plan, intended to go through multiple rounds of creating, testing, measuring, and learning to adapt the strategies to evolving conditions and challenges before those strategies are scaled. Every person, business, institution, and government agency is encouraged to continue to join conversations about this plan and contribute to its evolution. We will also continue to work closely with other partners creating city plans including the City of Chattanooga's Regional Resiliency Plan.

THE PLAN

This Integrated Community Sustainability Plan outlines a series of collective goals, values, strategies, and tactics to advance Chattanooga's environmental, social, and economic sustainability. While it was facilitated by green|spaces, Chattanooga's Sustainability Nonprofit, it has been written, and continues to be edited, by over 100 individuals representing over 50 organizations. Our collective hope is that it is adopted by even more. All of the goals require collaboration and collective action between a wide range of stakeholders. Luckily, Chattanooga has a well-established process that puts the well-being of the community above all else. From one of the first reinvestments in an urban waterfront to massive investments in the country's most advanced smart grid and then ensuring that those communication services are available to all students, Chattanooga has demonstrated that no ideal is too small for our collective attention to accomplish.

// CHATTANOOGA HAS DEMONSTRATED THAT NO IDEAL IS TOO SMALL FOR OUR COLLECTIVE ATTENTION TO ACCOMPLISH."

WHAT'S NEXT?

We are grateful to the committees that have helped assemble this Integrated Community Sustainability Plan, creating clear goals and strategies to build and realize a more sustainable and resilient future in our region. But this isn't the end—we need your help.

We have sought to work with community leaders and a diverse cross-section of neighbors from every walk of life across our city to create an ambitious sustainability plan for the Chattanooga region. However, this plan is not the end of an effort, it is the beginning. The governments, committees that

In 2009, the City of Chattanooga adopted its first Climate Action Plan based on the recommendations of the Chattanooga Green Committee that focused on energy, healthy communities, natural resources, and education & policy. Since then, our community has collectively addressed to some extent over 90% of the projects that were outlined and have reduced citywide carbon emissions by 25%, much of that thanks to TVA closing coal plants, while simultaneously increasing our population by 14% and increasing GDP by 45%. Now, in 2020, as we confront a series of challenges that individually would define any other generation, we come together again to recognize our progress but also to set bolder goals that will set the community on a course for a sustainable future where our social infrastructure and physical in-

frastructure are as diverse and resilient as the natural environment that encompasses it. We plan to leave the world, and Chattanooga, a better place than how we found it.

wrote this plan will become working groups, and will continue to consist of neighborhood leaders, industry experts and community activists. These working groups will accept suggestions and make changes in strategies, tactics and goals on an annual basis. To serve on a working group or submit a suggestion, please email info@greenspaceschattanooga.org.





Goals

HOW DID WE ARRIVE AT THESE GOALS?

Each committee was comprised of a range of stakeholders and met several times over 2018 and 2019. They discussed existing conditions and challenges, researched and presented best practices from around the country and world, and then developed a high level goal as well as underlying goals, strategies, and tactics that they would recommend to make Chattanooga a sustainable and resilient community for all. A glossary of key terms has been provided for reference.



INTEGRATED COMMUNITY SUSTAINABILITY PLAN

Objective: We believe Chattanooga should be a sustainable and resilient community for all.



RESILIENT COMMUNITIES

GOAL

Goal: Achieve a sustainable, just, and socially equitable city in which residents have a meaningful voice.



ECO-SYSTEMS

GOALS

Goal 1: Become an anti-extinction community with a focus on native regeneration

Goal 2: Create multi-scale systems to support equitable food production and distribution



WASTE & MATERIALS

GOAL

Goal: Achieve Zero Waste by 2035



ENERGY

GOAL

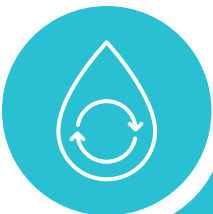
Goal: Achieve community-wide carbon neutrality by 2050.



MOBILITY

GOAL

Goal: Create a Community with Frictionless Transit



WATER

GOALS

Goal: Eliminate human-contributed contamination in our waterways





Resilient Communities

Goal: Achieve a sustainable, just, and socially equitable city in which residents have a meaningful voice.

WHY IS THIS GOAL IMPORTANT?

Our society faces three great simultaneous challenges, the economic and social fallout from a global pandemic; pervasive systemic racism seen in disproportionately worse outcomes for minorities in criminal justice, health, education, housing, and opportunity; and the effects of environmental justice from historic pollution to the ongoing and increasing effects of climate change.

As a community, we are held back in achieving our collective potential to achieve success as demonstrated in our collective financial and physical well-being, the quality of our built environment, the quality of our natural environment, and the quality of our social and civic infrastructure when nearly 40% of our population is being held back from their true potential. To achieve a sustainable, just, and socially equitable city we must work together to support the resilience and sustainability of neighborhoods and create structures for residents to ensure that they have a voice in decisions that impact their community.

KEY VALUES

CREATE DIVERSE HOUSING OPTIONS

Offering a diverse mix of housing, in cost, unit types, and neighborhood settings is important to meet the needs and preferences of all residents. Advantages of a diverse housing stock include economic stability, commuting and traffic advantages, longer and healthier lifespans, and better educational outcomes for children.

ECONOMIC OPPORTUNITIES THAT BENEFIT RESIDENTS & BUSINESS OWNERS

Sustainable neighborhoods have access to a diverse mix of basic needs and employment opportunities providing entry level jobs that pay a living wage and long term careers that build wealth. Residents that increase their income can then support a greater variety of retail and services.

COMMUNITIES SHOULD BENEFIT THE HEALTH OF RESIDENTS

In Chattanooga, a zip code is one of the single best predictors of health. From access to fresh healthy food and safe opportunities for physical exercise to the availability of healthcare and quality housing, we know that many social determinants of health can be addressed by the assets in a community.

SUPPORT SYSTEMS THAT PREPARE RESIDENTS FOR DISASTERS

Climate change brings increased risk of flooding, heat waves, and other natural disasters. Adding the COVID-19 pandemic and we see that the isolation that impacts health and opportunity on a good day, can be deadly during disasters. Strong social infrastructure and good planning can build resilience in any community.

STRATEGIES

STRATEGY 1 – ADDRESS SOCIAL DETERMINANTS OF HEALTH

According to the U.S. Department of Health and Human Services, “social determinants of health (SDOH) are the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks” (2020). Developing, implementing, and evaluating initiatives, programs, and opportunities can improve health outcomes by creating healthier communities. These efforts will support health equity initiatives in Chattanooga by intentionally addressing social determinants of health through a health equity lens. This viewpoint requires a careful examination of the five areas: economic stability, education access and quality, healthcare access and quality, neighborhood and built environment, and social and community context (U.S. Department of Health and Human Services, 2020). Projects to address the social determinants of health requires careful planning, community collaborations, and thinking in ways that address the intersectionality of these five

STRUCTURE FOR LEADERSHIP TRAINING AND SUCCESSION PLANNING

Strong neighborhoods have good leadership that can raise the voices of residents and connect them to the resources they need to thrive. However, even with the availability of resources like Neighborhood University and Neighborhood Roundtable, there is no standard manual or training that neighborhood leaders receive. There also often remains a challenge with recruiting younger people to participate and to engage renters.

domains.

Tactics include:

- Streamlining resources and support- a “one stop shop” for care- food, healthcare, social work services, dental, eye care, etc. People could address all their healthcare and preventive needs in one physical space.
- Determine a priority population- study the data and a community to determine what the needs are of a specific area/zip code, involve community members to serve as key informants to change.
- Meet basic needs first: food and safe and affordable housing
- Focus on preventive care as compared to treatment
- Integrate workforce development strategies focused on opportunities in addressing social determinants of health.
- Identify projects for Healthy Connected Chattanooga

STRATEGY 2 – CREATE A HOUSING DIRECTORY/REPORT

A housing directory report will allow for Chattanooga to gain insight on the quantity and types of housing currently available. It will identify gaps in supply and allow for the creation of plans to fill the needs of residents.

Tactics include:

- Identify existing sources of information such as Hamilton County GIS, Hamilton County Tax Assessment, CNE's survey, and the City of Chattanooga short term rental licensing and incentive programs;
- Identify rental aggregators (e.g. padmapper.com);
- Consult with software/web developer to determine if an automated process is possible to build a housing directory with rental rates and utilities, and
- Direct mail survey to all or a subset of likely rental units to collect information about challenges and opportunities.

STRATEGY 3 – ESTABLISH COMMUNITY DEVELOPMENT CORPORATIONS AND ENHANCE RESIDENT-LED ORGANIZATIONS WITH TOOLS TO ADVANCE NEIGHBORHOOD PLANS

Neighborhoods with a united voice and outlined plan for their vision of their community are able to proactively determine the future of their community and to confront gentrification and displacement **expand** across Chattanooga.

Tactics include:

- Set up virtual workshop for neighborhood association presidents and prominent CDCs in Pittsburgh, Boston, Buffalo, and elsewhere;
- Produce a simple guide to establishing a CDC for neighborhoods including legal requirements, governance suggestions, funding resources, and potential action plans, and
- Create a cohort of existing organizations that would like to be a CDC and provide them technical support.

STRATEGY 4 – CREATE COOPERATIVES FOR BUSINESSES THAT ARE NEEDED BUT UNAVAILABLE OR UNAFFORDABLE

Market-based businesses have a list of criteria a neighborhood must meet before they will consider opening a new venue. Cooperatives are a model to used to meet the needs of residents when market-based providers are unable/unwilling to do so.

Tactics include:

- Develop conceptual business models for Cooperative services for basic needs including housing, transportation, food, and childcare;
- Present conceptual business models to local banks, credit unions, CDFIs, Foundations and private impact investors to test interest and fundability, potentially as part of Green Bank. Coordinate with Marco Perez, Liza Soyden, and Dwayne Marshall who are working with the Boston Impact Initiative;
- Pilot one or more cooperative that receives interest and sufficient funding, **and**
- **If pilot** is successful, launch cooperative and publish guide for the process
- Establish a staffed resource center to support additional cooperatives, similar to the California Center for Cooperative Development or Co-op Cincy.

STRATEGY 5 – REDUCE BLIGHT WITH REDEVELOPMENT PLAN AND LAND BANK AUTHORITY

Blight can be defined as property that has been abandoned or not properly maintained that may cause health and safety issues for residents. Across the city, there are vacant properties where illegal dumping occurs with overgrown landscaping. A plan should be developed to place those areas in a land bank with a strategy to convert them to their highest and best use for the communities.

Tactics include:

- During virtual workshop described in the CDC strategy, get information on best practices in other communities to fix blighted properties;
- Create a working definition of blight with neighborhood leaders with support from housing

agencies;

- Develop blight reduction plan with community leaders, City of Chattanooga Codes Enforcement Land Bank, and judges assigned to code enforcement cases. The plan will include steps to identify blighted properties that are either already owned, or that are available for land bank acquisition, both through regulatory authority and through incentivized private sales as well as incentives and disincentives to ensure properties do not become blighted, and
- Work with emerging cooperatives, community land trusts, and existing housing agencies to improve properties and either affordably rent or sell with integrated strategies to avoid displacement.

STRATEGY 6 – IDENTIFY PROJECTS & PARTNERS TO UTILIZE OPPORTUNITY ZONE FUNDS

Opportunity Zones were created by the Tax Cuts and Jobs Act of 2017 and are defined as “economically-distressed communities where new investments, under certain conditions, may be eligible for preferential tax treatment.” A number of census tracts in Chattanooga were identified by the State that qualify for investments under this program. Because of the vague nature of the program, the outcomes of the investments are mixed. Some cities are leveraging the program to attract investment in positive ways that build

wealth for historically disadvantaged communities. Others are simply using them to make more money for investors in projects that were either already happening, or to incentivize projects that negatively impact communities, such as economic displacement. Chattanooga should develop a clear strategy to develop projects that positively impact communities that qualify for Opportunity Zone Investment.

Tactics include:

- Create an OZ board comprised of economic development leaders in public and private sectors and community leaders representing Opportunity Zones;
- Identify physical and programmatic opportunities that would have positive impact on neighborhoods;
- Using the sites identified in this **process issue** an RFP for developers to rehabilitate or develop properties and to identify or establish qualifying businesses, and partner with or establish a Qualified Opportunity Fund that can receive investments in developments and businesses that receive approval from OZ Community Leaders.







Eco-Systems

Goal 1: Become an anti-extinction community with a focus on native regeneration

Goal 2: Create multi-scale systems to support equitable food production and distribution

WHY ARE THESE GOALS IMPORTANT?

People often talk about man vs. nature, and indeed many of the systems that modern civilization has developed, from buildings to processed food, have served to separate our day to day lives from the active experience of participating in an ecosystem. However, people are an integral part of ecosystems and our existence relies on ecosystems functioning to grow the food we eat, generate the oxygen we breath from photosynthesis, and to ensure that our climate is habitable. Beyond simple survival, the flora and fauna that make Southeast Tennessee one of the most biodiverse ecosystems in the world depend on us to be stewards of the natural resources that make our region so beautiful, enjoyable, and productive.

THE STAKES

“Over half (55%) of global GDP, equal to USD 41.7 trillion ¹, is dependent on high-functioning biodiversity and ecosystem services. However, a staggering fifth of countries globally (20%) are at risk of their ecosystems collapsing due to a decline in biodiversity and related beneficial services” according to a new study by Swiss Re Institute. Chattanooga, the Scenic City, has 3.5 million annual visitors who spend \$1 billion dollars in the city each year according to the U.S. Travel Association.

The COVID-19 pandemic exposed the fragile and complicated distribution systems that connect factory farms to grocery stores and the result was that more consumers and restaurants started looking more to local farms to supply their needs for fresh food. Building on this trend presents an opportunity to continue to build stronger relationships between people and the local sources of their food.

KEY VALUES

EQUITY IN ECOSYSTEM INVESTMENT AND ACCESS

When we make investment decisions for improving ecosystems, whether that is planting trees to increase tree canopy, provide habitats, and promoting biodiversity, we must ensure those investments benefit the most vulnerable communities first and most. We must also ensure that access to natural resources, both places and food, is provided to our most vulnerable communities.

CONSERVATION AND STEWARDSHIP

For decades, Chattanooga has prided itself on improving our stewardship of our most important natural assets from conserving the Tennessee River Gorge and Stringers Ridge to improving the quality of the Tennessee River and Enterprise South among many other projects. However, many regional natural treasures are still at risk and require our continued commitment to conservation and stewardship.

SUPPORTING NATIVE REGENERATION

Invasive and non-native species threaten the delicate balance of ecosystems and take advantage of opportunities to spread. We are committed to

eliminating invasive species, reducing non-native species, and educating the community to prefer native plants that are key to the stability of our ecosystem and preserving biodiversity with habitat restoration and providing food, especially to native pollinators.

FRESH, LOCAL FOOD PROMOTES LOCAL ECONOMIES AND PUBLIC HEALTH

Fresh, locally sourced food, both from gardens and farms, serves to reduce reliance on long, fragile, carbon-dependent food chains and increases access to all citizens of Chattanooga. Shortening supply chains not only reduces carbon use but increases the quality and amount of nutrients in fresher, in-season produce. Connecting people to their food production also increases physical activity and health while sharing understanding and knowledge that greatly reduce food insecurity. Furthermore, research has shown that plant-based diets have been shown to reduce cancer, obesity, strokes, heart disease, diabetes, and other chronic illnesses that drive up the cost of health insurance and reduce life expectancy.

STRATEGIES

STRATEGY 1 – ESTABLISH BASELINE BIODIVERSITY REPORT

To make Chattanooga, an anti-extinction city, a baseline must be established with which we can compare our performance and gauge the success of the strategies and tactics that we employ to meet the goal.

Tactics include:

- Work with Thrive Natural Treasures Alliance and research institutions; research examples of baseline biodiversity reports;
- Develop methodology and region for which to conduct the baseline biodiversity report, and

- Conduct study and publish report on recommendations for conservation and rehabilitation.

STRATEGY 2 – ESTABLISH A NATIVE VEGETATION CERTIFICATE

To promote the installation and maintenance of native species, a certificate program should be developed that teaches contractors, landscapers, and the interested general public how to identify native species vs invasive and non-native species, proper planting and establishment techniques, long-term care, and weeding.

Tactics include:

- Work with Reflection Riding, Crabtree Farm, and the City of Chattanooga Land Use Working Group to outline the certification process and curriculum;
- Develop incentives for contractors, landscapers, and homeowners to receive certificate, and
- Work with outreach partners like Reflection Riding, Crabtree Farm, green|spaces, and My Tennessee to provide training opportunities.

STRATEGY 3 – INCREASE THE NUMBER OF NATIVE SPECIES ON CITY APPROVED TREE/SHRUB LIST AND ESTABLISH A CITY SANCTIONED SPECIES LIST FOR GENERAL LANDSCAPING

To support biodiversity, carbon sequestration, and providing habitat and food for native species, the number of native species on the City-approved tree/shrub list should be analyzed and increased.

Tactics include:

- Work with the City of Chattanooga Land Management Working Group, other relevant leaders, and subject matter experts to analyze the existing tree/shrub/landscaping species list and research possible alternatives or additions;
- Research species and soil management practices that maximize carbon sequestration potential and document for potential offset generation;
- Document locations where alternatives have already been used, or pilot alternatives;
- Present findings to relevant stakeholders and City leadership;
- Propose additions or changes to City requirements, and
- Work with outreach partners, landscapers, and nurseries to educate residents and businesses about the City sanctioned species list for voluntary residential and commercial landscaping changes.

STRATEGY 4 – DEVELOP GRANTS FOR CITIZEN SCIENCE PROJECTS

According to the Citizen Science Association (CSA), Citizen science is the involvement of the public in scientific research – whether community-driven research or global investigations. CSA unites expertise from educators, scientists, data managers, and others to power citizen science.

Tactics include:

- Work with local and regional research institutions to identify potential citizen science projects;
- Identify national and local funders that could support relevant projects, and
- Create a directory of interested residents that can be notified when projects are available for participation including relevant local schools like Ivy Academy.

STRATEGY 5 – JOIN BIOPHILIC CITIES

From Biophilic Cities: *“While the question of what constitutes a biophilic city is an open and evolving one, it is a city that contains abundant biodiversity and nature, that works to conserve that nature as well as creatively insert new forms of nature, and fosters connections to the natural world. It is a nature-ful city, ideally providing residents of urban neighborhoods an ability to live in nature-immersive environments. A biophilic city places nature at the core of its design and planning, and works to create abundant opportunities for people to learn about and connect with this nature. A biophilic city understands and celebrates that its role is to provide habitat for many different forms of life, and advocate for humane co-existence. Biophilic cities protect, grow, and celebrate local nature, but also work on behalf of nature beyond their borders.”*

Tactics include:

- Establish a working group to prepare an application for Biophilic Cities identifying the existing features as well as the five indicators for which biophilic success will be evaluated;
- Adoption of resolution by City Council in support of Biophilic Cities, the importance of nature in urban life, and stating the city’s intent to join the network, and

- Form a working group to plan/manage relevant projects to advance the identified indicators.

STRATEGY 6 – JOIN BIOPHILIC CITIES

The COVID-19 pandemic laid bare the shortcomings of a global and national food system in meeting the needs of our community in a time of crisis. With food prices and availability coming into question, it is obvious that we need to better understand, optimize, and localize our food production. More simply, we should better know from where our food comes and better support those that produce it, whether those are farmers or community garden caretakers.

Tactics include:

- Work with Thrive Regional Partnership Natural Treasures Alliance to produce a Sustainable Food Value Chain analysis with stress testing for scenarios that may impact food supply;
- Analyze perception and value of local organic foods as well as potential for health care savings, and
- Document and publish report.

STRATEGY 7 – ESTABLISH POLICIES FOR COMMUNITY GARDENS

Community gardens are one of the most effective ways of providing access to fresh produce at an affordable price. Chattanooga currently has X community gardens that are run by a wide variety of organizations. To help expand access to existing community gardens, and to expand the number of community gardens, we should establish policies and resources for reference.

- Tactics include:
- Survey existing community garden operators to determine best practices, challenges, and opportunities;
- Create guide/website with directory for community gardens and resources for starting a community garden;
- Identify needs for additional City policies or changes to existing City policy to expand access

to community gardens, and

- Include education about edible plants and trees and resources for how and where to find them and/or plant them.

STRATEGY 8 – ESTABLISH A LAND BANK FOR COMMUNITIES TO CHEAPLY RENT/PURCHASE VACANT OR UNDERUTILIZED LAND

While Chattanooga currently has a land bank authority, its primary purpose is to ease the transition of property ownership for beneficial use. This strategy suggests either a separate use of the existing land bank or an additional land bank for the purpose of creating more community gardens and other community benefit programs on vacant or underutilized land whether through ownership transfer or land lease.

Tactics include:

- Work with City of Chattanooga to research potential use cases of existing Land Bank authority for land use;
- Work with the City, United Way, and CNE to create guide for neighborhood associations to communicate with existing landowners of vacant or underutilized land to encourage transfer of property to either land bank or community ownership, and
- Coordinate with Strategy 7 to provide resources for neighborhoods to start community gardens on transferred property. Also coordinate with Resilient Communities Committee on the transfer of property for permanently affordable housing.

STRATEGY 9 – ESTABLISH A MARKETING STRATEGY FOR CHATTANOOGA AS A ‘FOOD CITY’

Chattanooga has an incredible geographic advantage for food with several historically fertile valleys with abundant farmland. Unfortunately, there exists a chicken or the egg dilemma in connecting that food with local restaurants frequented by residents and visitors alike. But, Asheville, North Carolina had similar challenges in the late 1990s and early 2000s. Based on the report generated in

Strategy 6, and after progress is made in helping restaurants source more local foods from farms, it is important to reinforce the economics of a strong local food scene by establishing Chattanooga's brand as a "food city."

Tactics include:

- Establish and reinforce the needed infrastructure to connect local restaurants to local farms, and
- Work with the Thrive Natural Treasures Alliance, Chattanooga Visitors Bureau, TN Tourism board, TN Parks & Recreation to brand Chattanooga as a 'food city'.

STRATEGY 10 – WORK WITH SURROUNDING RURAL AREAS TO DEVELOP A REGIONAL PLAN FOR AGRITOURISM

Agritourism is "a commercial enterprise at a working farm, ranch, or agricultural plant conducted for the enjoyment of visitors that generates supplemental income for the owner." While several opportunities currently exist for agritourism in the Chattanooga region there is room for growth that could help both support local farms and can help reinforce the sustainability brand of Chattanooga.

Tactics include:

- Work with the Thrive Natural Treasures Alliance to document existing agritourism opportunities and provide a guide to the Chattanooga Visitors Bureau, and
- Develop a guide for local farms to start agritourism opportunities.





WASTE & MATERIALS

Goal: Achieve Zero Waste by 2035

WHY IS THIS GOAL IMPORTANT?

People often use the phrase “throw it away” without understanding that there is no such place as “away.” We produce over four pounds of trash each day, and then we throw it in a pile where there was once a forest, or a farm, or a neighborhood, and then that pile generates methane gas, a greenhouse gas 30 times more potent than carbon dioxide.

There are over 2,000 active landfills in the country and the EPA estimates there are over 10,000 closed landfills that are considered contaminated brownfields. The process of consuming more and more materials and burying them in the ground is fundamentally unsustainable. Beyond the direct impacts of having to open new landfills, Project Drawdown reports that reducing food waste is the single most effective strategy to confronting climate change because over 30% of food produced by agriculture is simply wasted even as millions go hungry every day.

One of the single greatest sustainability challenges our community faces is reducing all kinds of waste in order to conserve our limited resources and to ensure that our children and their children can share the same natural treasures and access to natural resources that we enjoy.

But, in addition to these challenges, there are opportunities. With cities and countries around the world dedicated to zero waste goals, more and more solutions become available. Not only can we learn from these practices, when we develop our own solutions for the circular economy, there is a global marketplace to export those ideas

KEY VALUES

KNOWLEDGE IS POWER

Everything with waste must begin with an audit of the waste streams that exist, where they come from, where they go to, and then how we can identify and divert each stream. Then, we must increase awareness on the consumer level about their purchasing power to demand zero waste, recyclable, or compostable products and packaging, how we generate waste and where it goes, and how to manage it conveniently and responsibly is necessary to achieve zero waste. We must support the physical infrastructure and curriculum to ensure that waste reduction is a part of the culture of our schools.

CIRCULAR ECONOMIES ARE SUCCESSFUL AND EQUITABLE ECONOMIES

We must consider the lifecycle of all of the materials we use as a community and work to identify new or emerging technologies and solutions to close those loops by sourcing recyclable or natural materials, manufacturing them to make them durable and then ensuring that at the end of its long useful life, it can

be returned to the earth through composting or taken back to be upcycled or recycled. Additionally, we have to include the impact materials have on the people involved in extracting, manufacturing, transporting, using, and end-of-life processes. Too often the most vulnerable communities are the most impacted by irresponsible material sourcing or disposal. For example, several historic Chattanooga neighborhoods are currently part of an EPA superfund site after industrial furnace waste with lead and other heavy metals was dumped on the property decades ago. By considering the entire life cycle of products, our community can prevent similar tragedies.

STRATEGIES

STRATEGY 1 – EVALUATE CURRENT WASTE MANAGEMENT SYSTEM

Tactics include:

- Conduct a community wide waste audit;
- Build a coalition of government, nonprofit conservation organizations, waste management businesses, and material experts to analyze the waste audit results;
- Identify the best practices to divert each waste stream, and
- Develop a long term strategy to eliminate waste to landfill.

STRATEGY 2 – ESTABLISH A PUBLIC ADVOCACY CAMPAIGN TO EXAMINE THE ENTIRE LIFECYCLE OF COMMON PROD-

UCTS INSTEAD OF JUST THE END

Tactics include:

- Use the waste management coalition to analyze opportunities in the waste audit for closed loop products;
- Research best practices for circular economy solutions and develop lifecycle strategies for the most common types of waste.
- Develop a communication strategy to educate the public about the most effective solutions for waste reduction, and
- Develop potential policy solutions with incentives and disincentives for consumers and manufacturers. Advocate for state policy changes when needed.

STRATEGY 3 – EDUCATION AND ADVOCACY IN HAMILTON COUNTY SCHOOLS FOR CONSUMPTION AND WASTE REDUCTION

Tactics include:

- Work with HCDE on developing system-wide contracts to divert as much waste as possible from landfill with supplemental funding if necessary;
- Research curricula that have been developed for waste reduction in schools including Urban Green Lab and USGBC Green Classrooms, and
- Develop classroom and school rewards program for waste reduction.

STRATEGY 4 – STUDY REFRIGERANT MANAGEMENT AND MITIGATION OPTIONS

Tactics include:

- Work with ASHRAE and HVAC Manufacturers to develop a community-wide refrigerant audit, and
- Work with ASHRAE and ORNL to develop a comprehensive community-wide strategy to manage existing refrigerants and encourage the use of emerging technologies to replace them with alternatives with lower or no global warming potential.

STRATEGY 5 – ESTABLISH COMPOST FACILITY

Tactics include:

- Identify the best sites for a scalable commercial composting facility, either public or private;
- Create a directory of large organic waste producers as well as large carbon sources and build incentives or policies to divert these to composting facilities;
- Advocate for homes and businesses to participate in composting services either individually or

through a pick-up/drop-off system, and

- Conduct an analysis for the city to offer curbside composting pickup.

STRATEGY 6 – IDENTIFY & ACCESS FOOD RECAPTURE PROGRAMS

Tactics include:

- Research effective food recapture programs around the country
- Establish a new food hub to divert food waste from landfill either to beneficial uses or to compost. The food hub can also serve to connect local farmers to local restaurants and fill “Food Prescriptions” from doctors.

STRATEGY 7 – ESTABLISH COMPOST FACILITY

Tactics include:

- Analyze most common streams of C&D waste from the waste audit;
- Interview construction and demolition contractors locally and in communities with C&D recycling to research the existing challenges and opportunities;
- Identify potential markets or uses of recycled C&D waste;
- Identify sources of funding for C&D sorting and recycling equipment for public and/or private C&D landfills, and
- Install sorting and recycling equipment at existing Material Recovery Facilities or at Construction and Demolition landfill sites.





ENERGY

Goal: Achieve community-wide carbon neutrality by 2050.

WHY IS THIS GOAL IMPORTANT?

Global climate change is an existential risk. Mitigation and adaptation to this risk is both a threat to quality of life and a transformational opportunity. Chattanooga and the regional economy will experience continued and accelerated growth through participation in a low carbon economy. The leadership shown by the city and regional stakeholders will further attract new residents and enhance our sense of community pride from being stewards of our environment. Other programs to improve our community will be supported by our focus on sustainability including regional resiliency, transportation, and social justice. Efforts to address these goals should be equitable and inclusive, promoting the participation by and the reduction of disproportionate impact of lower income and other disadvantaged groups.

For a goal to be effective, it should follow established guidelines and methodologies. We recommend that organizations follow guidance from the Science-Based Target Initiative (SBTi). SBTi is a collaboration between CDP, World Resources Institute (WRI), the World Wildlife Fund for Nature (WWF), and the United Nations Global Compact (UNGC). The purpose of SBTi is to help organizations establish carbon reduction goals in line with the reductions determined by the Intergovernmental Panel on Climate Change (IPCC).

SBTi guidelines require that at a minimum a goal should:

- Include, at a minimum, Scopes 1 (direct) and 2 (indirect) emissions from all sectors (buildings, industrial, transportation);
- Include all relevant GHGs as measured per the GHG Protocol;
- Establish a base year;
- Include a long-term target, with a preference for a 2050 target year to align with IPCC recommendations, and
- Be ambitious in decarbonization aligned with the IPCC recommendation to keep global temperature increase below 2°C or less.

KEY VALUES

THINK AND ACT LOCALLY

Programs developed to achieve GHG reduction goals should focus on the local region to capture both the economic as well as climate benefits. Local solutions should always be preferred, and benefits should be considered in a holistic way, not just GHG reduction, to value local impacts. This also includes support for local business innovation to tackle elements of the climate change problem.

STRIVE FOR EQUITY AND INCLUSION

Climate change will disproportionately impact certain communities. This impact can come in the form of environmental changes which reduce the quality of life in these communities, as well as economic impacts where energy costs represent a significantly larger portion of household income. Affordability of utilities and participation in GHG reduction opportunities for low income and other disadvantaged households should be core design requirements of any program.

CONSIDER THE FUNDING

Funding is a common hurdle to the establishment and achievement of GHG reduction goals. Developing programs which leverage existing funding models as well as creating new funding opportunities should be an important consideration in program development.

STRATEGIES

STRATEGY 1 – ESTABLISH BASELINE AND GOVERNANCE

To establish and achieve an emission reduction goal, there are three core elements that need to be established. First is a method of measurement, starting with a baseline of current emissions, but continuing annually so that progress can be tracked and celebrated—green|spaces partnered with the City of Chattanooga and Pale Blue Dot LLC to [conduct a community-wide carbon inventory report](#) in June 2020. Second is governance and oversight.

IMPROVE RESILIENCY

Programs should also strive to improve both the reliability and resiliency of the local environment and economy. Actions taken, particularly at the start of these programs, should avoid trade-offs in service delivery purely for the sake of GHG reduction. Programs should be looking for and prioritizing opportunities to both improve resiliency and reduce GHG emissions.

This ensures the durability of the commitment through political and economic cycles while also offering a forum of advisors and advocates to provide feedback and assistance. Finally, the community needs to understand what is at stake – what are the risks and opportunities associated with achievement or failure. This strategy proposed three tactics listed below to specifically address each one of the elements critical to the success of an emission reduction goal.

Tactics include:

- GHG Emissions Inventory;
- Climate Advisory Committee, and
- Climate Impact Assessment.

STRATEGY 2 – IMPROVE LOCAL ENERGY EFFICIENCY AND RENEWABLES

To support the achievement of emissions reduction goal(s), stakeholders will need to make resources and tools available to facilitate project development, perform feasibility studies and RFPs, and identify and obtain funding.

This strategy identifies a few methods for emissions reduction but does not preclude any program or project which helps achieve the goal of reduced carbon emissions.

Tactics include:

- Green Bank;
- Neighborhood Association Residential and Small Business Energy Efficiency;
- Residential and Commercial Solar;

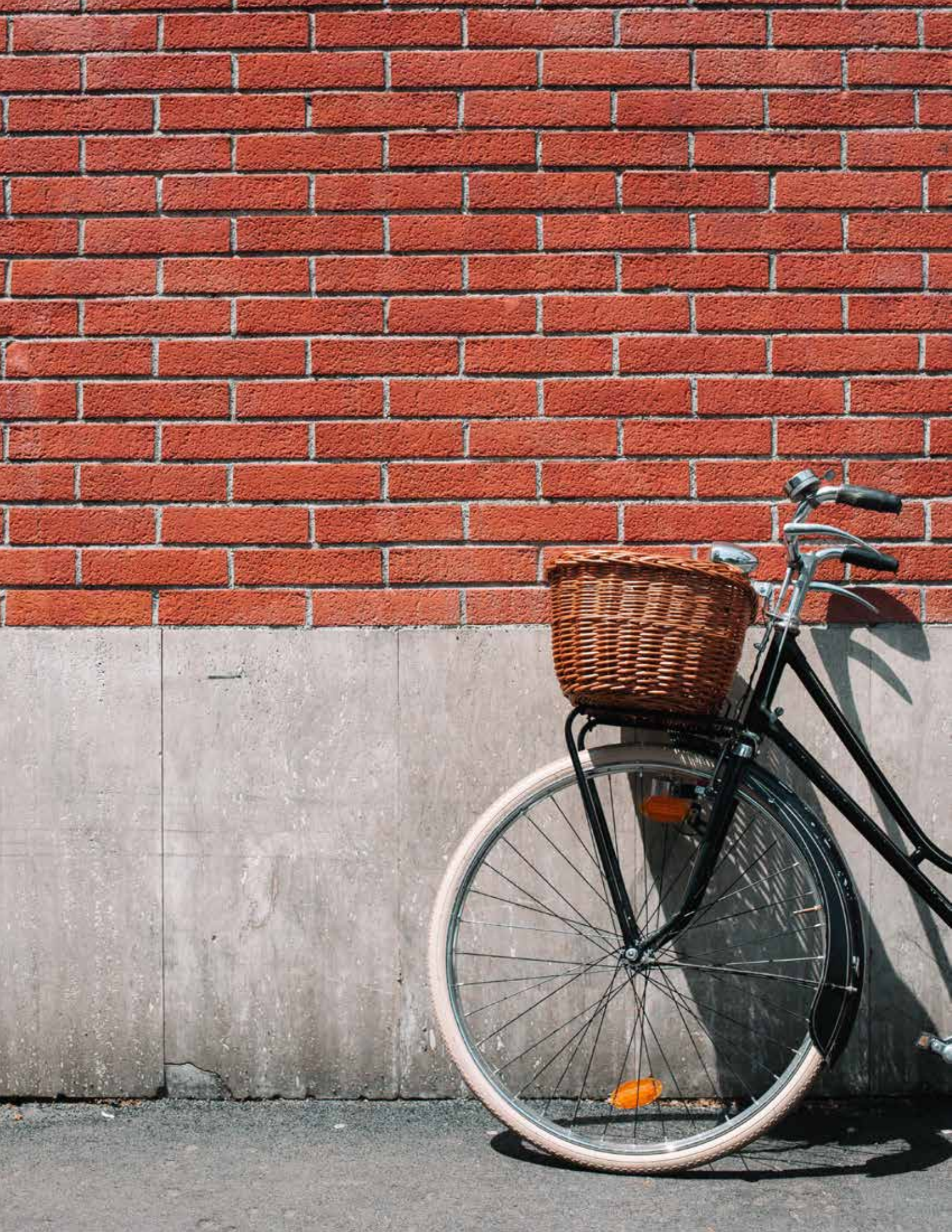
- Green Building Initiatives, and
- Support for research and development in emissions reduction.

STRATEGY 3– DECARBONIZATION OF TRANSPORTATION

Since transportation emissions are a significant portion of regional emissions, support needs to be provided to encourage lower carbon drivetrains including electric and natural gas (CNG), particularly renewable natural gas (RNG). Stakeholders need to identify major barriers to conversion of private and public fleets as well as personal vehicles, and then help to promote the development of local renewable natural gas to further improve the carbon reduction associated with conversion to CNG drivetrain.

Tactics include:

- Fleet Conversion to CNG or Electric;
- Charging Station Deployment. and
- Support for development of local RNG facilities.





MOBILITY

Goal: Create a Community with Frictionless Transit

WHY IS THIS GOAL IMPORTANT?

The zip code in which a person is born is the single best determinant of their economic mobility. Research has shown that physical mobility is a primary driver of this fact because it contributes to segregation and reduced access to resources and jobs. 82% of those employed in Chattanooga commute by themselves and 44% of those individuals live outside of Hamilton County.

With populations growing in the Greater Chattanooga Area at a high pace and the port opening in Savannah to larger ships leading to more 8 million more tons of freight being carried by semi-trucks on our highways, our status of the 11th worst freight gridlock will only get worse if we do not take action. These figures do not take into account the thousands of individuals who rely on the public transit system or those seeking safe alternative methods to commute to their jobs every day. In the past two years, the annual traffic deaths in Chattanooga have more than doubled.

KEY VALUES

Mobility underpins many of the other systems in the Integrated Community Sustainability Plan, it is essential to addressing climate change, to providing access to resilient communities, to providing for the transportation of local food ecosystems.

SAFE AND ECONOMICAL TRANSIT FOR ALL

Low income families spend a disproportionate amount of their income on transportation. We believe that every resident should have affordable,

easy, and quick access to the best schools, jobs, and amenities that our community offers.

PREPARE FOR TOMORROW BUT ACT TODAY

We expect that automation will transform mobility as we know it. We will invest in the technology and infrastructure to enable future modes of transportation that contribute to equitable access. However, we will not wait for automation to solve all of our mobility challenges and will work to improve

the systems that exist today that will successfully provide the bridge we need to that future.

FOCUS ON DECARBONIZING MOBILITY

In coordination with the science-based carbon targets in the Energy Committee, we will work to decarbonize mobility through investment in walking and biking, electrification and other alternative and efficient energy sources.

STRATEGIES

STRATEGY 1 – INCREASE ELECTRIC VEHICLE USE

Shifting to electric mobility not only helps achieve the carbon goals, articulated by the Energy Committee, it also helps improve the quality of all forms of mobility and helps ensure that the economic benefits of mobility are local and regional rather than national and international because while electricity is generated and distributed locally and regionally, fossil fuels are not.

Tactics include:

- Car Rental and Cooperative Ownership Option
- T2 More Charging Stations
- Ride & Drive Events / Public Awareness

STRATEGY 2 – CREATE CAR-FREE ZONES

Shifting to electric mobility not only helps achieve the carbon goals, articulated by the Energy Committee, it also helps improve the quality of all forms of mobility and helps ensure that the economic benefits of mobility are local and regional rather than national and international because while electricity is generated and distributed locally and regionally, fossil fuels are not.

Tactics include:

- Research and Report Potential Car Free Zones;
- Work with property owners to designate times/ areas to test Car Free Zones with temporary measures;
- Track the performance of the car free zone in

BALANCING SCALE

Because physical mobility is so tied to economic mobility, mobility at every scale is important: within neighborhoods, between neighborhoods, between cities in our region, between cities out of our region, and even internationally.

- terms of foot traffic and economic activity, and
- Work with RPA, Planning Commission and CDOT to make most successful Car Free Zones permanent.

STRATEGY 3 – MOVE TOWARD ZERO FARE

Americans spend more than 15% of their income on transportation, and low-income households can spend over 30%. Furthermore, only 12% of CARTA's budget comes from fares. Moving toward a Zero Fare system would help improve access to job opportunities, education opportunities, and the wide range of assets our community has.

Tactics include:

- Analyze economic feasibility of zero fare through public and private partnerships;
- Fees based on Needs
- Instructions / Demo bus ride days to increase ridership.

STRATEGY 4 – CREATE A VISION ZERO PLAN

Vision Zero is a strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all.

Tactics include:

- Fill in Gap for Bike Facilities;
- Signage of laws;
- More/Better Bike Lanes;
- Public Education, and

- Sidewalks on high usage roads like Hixson Pike.

STRATEGY 5 – CREATE DEDICATED BUS LANES

Dedicated Bus Lanes and Bus Rapid Transit are reliable ways to increase the efficiency of public transportation as well as providing an incentive to use public transportation rather than driving alone. As the population continues to grow in Chattanooga’s MSA, more and more people will need reliable and affordable transportation to centers of employment, education, and civic engagement.

Tactics include:

- Work with CARTA, CDOT, and TDOT to identify the most beneficial potential locations for dedicated bus lanes;
- Test dedicated bus lanes with temporary measures like cones, and
- Make successful dedicated bus lanes permanent with striping, signage, and enhanced facilities if necessary.

STRATEGY 6 – CREATE MICRO-MOBILITY OPTIONS

Micromobility refers to a range of small, lightweight devices operating at low speeds (15 mph). Micromobility devices include bicycles, Ebikes, electric scooters, electric skateboards, shared bicycles, and electric pedal assisted (pedelec) bicycles.

Tactics include:

- Develop policy review of successful implementation of micromobility from other cities, and
- Pair existing infrastructure like the Incline Railway and new infrastructure like Dedicated Bus Lanes or Bus Rapid Transit with micromobility options to increase efficiency and reach.

STRATEGY 7 – DEVELOP STANDARDS TO SUPPORT AUTONOMOUS VEHICLE GROWTH

We know that autonomous vehicles will change the way we think about mobility. Chattanooga must

plan ahead to ensure that the likely rapid growth of autonomous vehicles improves the equity and quality of mobility. While there are many concerns about the safety of autonomous vehicles, we also know that the status quo of over 30,000 motor vehicle deaths per year is unacceptable and autonomous vehicles represent one of our best strategies to drastically improve safety.

Tactics include:

- Work with University of Tennessee at Chattanooga’s Center for Urban Informatics and Progress, CDOT, and TDOT to identify the potential scenarios for integration of autonomous vehicles ;
- Create test beds for autonomous vehicle integration;
- Invest in infrastructure to improve the safety and reliability of autonomous vehicles, and
- Develop incentive programs for equitable access to autonomous vehicles.

STRATEGY 8 – CREATE CIRCULAR CONNECTOR

Most of the mobility routes for public transportation in Chattanooga look like the spokes of a bicycle wheel, extending out from a central hub. Circular connectors, whether as bus routes, greenways, or other mobility infrastructure can help improve the overall effectiveness of a mobility system.

Tactics include:

- Work with CARTA to analyze the most effective circular connector configurations and develop options for different connector types;
- Promote Attractions along Electric Bus Routes;
- Test connector types with temporary routes or infrastructure, and
- Invest in permanent infrastructure for most popular and effective connector strategies.

STRATEGY 9 – COORDINATE WITH HAMILTON COUNTY DEPARTMENT OF EDUCATION

One of the greatest challenges to the effectiveness of Hamilton County Department of Education’s Future Ready Institute Program, which allows for

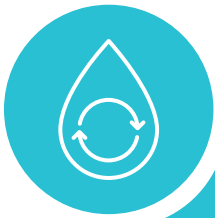
open enrollment for students outside of a given district, is transportation.

Public and private transportation options should be developed to for safe and effective transportation for these students which can also serve the general public either simultaneously or at different times.

Tactics include:

- Work with HCDE, CARTA, and CDOT to analyze the overlaps of public school bus networks, public transit, and other emerging modes such as ridesharing to Future Ready Institutes, Magnet Schools, and other educational opportunities like Chattanooga State, UTC, and the Chattanooga Public Library;
- Develop pilot to test modes to test effectiveness, and
- Scale up most effective strategies to the entire school district.





Water

Goal 1: Eliminate human-contributed contamination in our waterways

KEY VALUES

Water is essential for life. Water resource protection, especially during development is critical for socio-economic development, healthy ecosystems and for human survival. Water pollution is a threat to quality of life. Clean water is vital for reducing disease, improving health, promoting welfare and productivity of the community. Water is also a key element for the adaptation to climate change and the mitigation is a risk/threat to quality of life and transformational opportunity. Water is a finite and irreplaceable resource and is crucial to sustainable development. Water, if managed efficiently and equitably, plays a key role in strengthening the resilience of the community. The Water Committee values clean drinking water, preserving water resources for future generations, and promoting recreational access for the community to enjoy our local waterways.

STRATEGIES

STRATEGY 1 – ESTABLISH A GREEN INFRASTRUCTURE COMMITTEE

The Green Infrastructure Committee would summarize practical and successful green infrastructure solutions to inspire city leaders, community managers, and citizens. The committee would focus on using plants, soils, and nature to manage stormwater, to reduce the need for gray infrastructure, and create/preserve vegetated areas.

Tactics include:

- Support ongoing analysis of water scorecards and mapping;
- Incorporate green infrastructure into various new project or when a project is modified, and
- Identify critical tools to achieve goals or climate resilience and community natural resources.

STRATEGY 2 – CREEK OF THE WEEK WATERSHED AWARENESS CAMPAIGN

The Creek of the Week Watershed Awareness Campaign would raise awareness about our community's watershed, our water supply, and citizen action needed to make our communities cleaner, safer and more beautiful.

Tactics include:

- Focus on service groups, neighborhood associations, scouts, schools, churches, and individuals that would donate their time to help clean up and improve access for recreational usage in specific areas around a water body;
- Protect and restore watersheds through citizen action, education, field work, and enforcement;
- Advocate for clean water, update environmental laws, and engage citizens in identifying and devising solutions to local water pollution problems, and
- Implement a Neighborhood Scientist Program

STRATEGY 3 – USE DATA FROM THE INTERDISCIPLINARY GEOSPATIAL TECHNOLOGY (IGT) LAB AND THRIVE TO SUPPORT WORK IN CHATTANOOGA

The Interdisciplinary Geospatial Technology (IGT) Lab provides the University of Tennessee at Chattanooga and the greater Chattanooga metropolitan region with leadership, expertise, and a platform for the successful integration of geospatial technologies and spatial thinking into academic instruction and problem solving. The IGT

Lab and Thrive data would help support work in Chattanooga.

Tactics include:

- Focus support in spatial thinking, GIS data collection and management, spatial analysis, cartography, and GIS application development;
- Provide a partnership between UTC and community for consultation and project management services, and
- Advocate for GIS learning opportunities through internships, applied research, and sponsored projects.

STRATEGY 4 – PARTNERSHIPS WITH CONSERVANCY GROUPS

Partnerships with conservancy groups would increase accessibility of underutilized recreational areas, provide awareness of organizations, campaigns, and cleanups.

Tactics include:

- Reach out to Neighborhood Watch Groups, WaterWays, North Chickamauga Creek Conservancy, South Chickamauga Creek Greenway Alliance, and Green Steps, etc, and
- Provide a partnership between developers, businesses, schools, state and local governments, UTC, etc.

Glossary

KEY TERMS

While developing the Integrated Community Sustainability Plan, the committees found it was important to have mutual understanding of definitions of terminology. For clarification on subjects, please refer to these definitions.

Affordable Housing: The occupant is paying no more than 30 percent of gross income for housing costs, including utilities.

Anti-Extinction Community: A commitment to preserve and protect all types of native species including animals and plants.

Blight: Encompasses vacant lots, abandoned buildings, and houses in derelict or dangerous shape, as well as environmental contamination. Blight can also refer to smaller property nuisances that creep up on cities and suburbs: overgrown lawns, uncollected litter, inadequate street lighting, and other signs of neglect.

Circular Economy: Based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems.

Climate Change: A change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.

Community Development Corporation: A nonprofit, community-based organization focused on revitalizing the areas in which they are located, typically low-income, underserved neighborhoods that have experienced significant disinvestment.

Carbon Inventory Report: A community wide inventory of greenhouse gas emissions (GHG) associated with the activities of the people who live, work, learn, travel, visit, and recreate within the a geographical boundary during a period of time. These inventories must be transparent and able to be replicated, updated, and compared with future assessments. The measurement of greenhouse gas emissions includes kilowatts of electricity, natural gas therms, tons of coal, and gallons of liquid fuels consumed; as well as vehicle miles traveled, tons of waste processed, and gallons of potable water distributed.

Carbon Neutrality: A state of balance between the carbon dioxide emitted into the atmosphere and the carbon dioxide removed from the atmosphere.

Climate Resiliency: The ability to anticipate, prepare for, and respond to hazardous events, trends, or disturbances related to climate. Improving climate resilience involves assessing how climate change will create new, or alter current, climate-related risks, and taking steps to better cope with these risks.

Carbon Sequestration: A natural or artificial process by which carbon dioxide is removed from the atmosphere and held in solid or liquid form.

Economic Sustainability: The ability of an economy to support a defined level of economic production indefinitely.

Environmental Sustainability: Acting in a way that ensures future generations have the natural resources available to live an equal, if not better, way of life as current generations.

Frictionless transit: the ability to move between modes of transportation and geographically with ease.

Green Bank: A publicly capitalized entity established specifically to facilitate private investment into domestic low carbon, climate resilient infrastructure and other green sectors such as water and waste management.

Greenhouse Gas: Any of various gaseous compounds (such as carbon dioxide or methane) that absorb infrared radiation, trap heat in the atmosphere, and contribute to the greenhouse effect.

Land Bank: A large body of land held by a public or private organization for future development or disposal.

Opportunity Zone: A designation and investment program created by the Tax Cuts and Jobs Act of 2017 allowing for certain investments in lower income areas to have tax advantages.

Qualified Opportunity Fund: An investment vehicle which is organized as a corporation or a partnership for the purpose of investing in qualified opportunity zone property (other than another qualified opportunity fund) that holds at least 90 percent of its assets in qualified opportunity zone property, determined by the average of the percentage of qualified opportunity zone property held in the fund as measured—(A) on the last day of the first 6-month period of the taxable year of the fund, and (B) on the last day of the taxable year of the fund.

Social Sustainability: Specifying and managing both positive and negative impacts of systems, processes, organizations, and activities on people and social life.

Sustainability (general): The ability to exist constantly using resources in a way that preserves the ability for future generations to use the same resources.

Urban Heat Island Effect: Urbanized areas that experience higher temperatures than outlying areas. Structures such as buildings, roads, and other infrastructure absorb and re-emit the sun's heat more than natural landscapes such as forests and water bodies. Urban areas, where these structures are highly concentrated and greenery is limited, become "islands" of higher temperatures relative to outlying areas. Daytime temperatures in urban areas are about 1–7°F higher than temperatures in outlying areas and nighttime temperatures are about 2–5°F higher.

Vulnerable Communities: the degree to which natural, built, and human systems are at risk of exposure to climate change impacts. Vulnerable communities experience heightened risk and increased sensitivity to climate change and have less capacity and fewer resources to cope with, adapt to, or recover from climate impacts. These disproportionate effects are caused by physical (built and environmental), social, political, and/ or economic factor(s), which are exacerbated by climate impacts. These factors include, but are not limited to, race, class, sexual orientation and identification, national origin, and income inequality.

Zero Waste: The conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health. 90% diversion is a standard metric used to evaluate Zero Waste.

This page intentionally left blank.



This Chattanooga Integrated Community Sustainability Plan carries a Creative Commons Attribution 4.0 International license. This permits re-use of green|spaces content when proper attribution is provided. Uses of this work must provide appropriate credit to the organization and its authors, provide a link to the license, and indicate if any changes were made. You may do this in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

This means you are free to share and adapt green|spaces work, or include our content in derivative works.

For the full legal code of this Creative Commons license, please visit creativecommons.org.

If you have any questions about citing or reusing our work or would like to discuss how to best utilize our research, visit greenspaceschattanooga.org.

