

# Huntsville Energy and Greenhouse Gas Reduction Plan Update:

## *Integrating City-level energy & GHG reduction goals and metrics Into the Long Range Urban Plan*

**June 2016**

**Introduction:** In preparation for the City of Huntsville’s participation in the national Georgetown University Energy Prize competition, the city’s multi-departmental Sustainability Team outlined the process, content and actions for “Designing a City-Scale Energy Efficiency and Retrofit Plan” program (Exhibit A). This report updates that plan and further delineates agreed-upon goals and actions in clean energy, energy efficiency, greenhouse gas reduction, and some associated metrics for tracking plan progress.

The purpose of this effort is to improve the jurisdiction’s sustainability focus on clean energy and energy efficiency, to set efficiency goals to reduce energy spending and waste, to reduce greenhouse gas emissions per capita, and to foster growth of energy technology & service related jobs in the community. As initially outlined in Exhibit A, this process is being integrated into the Long Range Urban Plan, (LRUP) its development underway since 2014 (See [www.BigPictureHuntsville.com](http://www.BigPictureHuntsville.com)). That process and its output will further align metrics with energy and GHG reduction goals and identify methodologies for plan implementation and measurement of programmatic impacts. Standardized benchmarks and a plan for monitoring the impacts of competing actions and unanticipated outcomes is part of the LRUP development process to reduce the greater collective risk of barriers to success. Including the energy and air quality goals in the LRUP will aid in aligning those priorities with the Capital Improvement Plan and help to provide sustainable funding sources for the long-term work. This is an integrative strategy to move sustainability tenants into the operational budget and annual planning process of local government. This is a natural evolution in sustainability and climate action planning that merges the work into the existing planning and daily functions of local government.

This document will help inform Huntsville’s pathway towards an energetically cleaner and more environmentally sustainable air quality future via focusing on (1) Buildings and

Efficiency, (2) expanding Renewables, and (3) setting objectives for Transportation and Land Use Planning. Table 1 sets out some common city energy-related actions that the team can identify.

**Table 1: Common City Energy Related Actions<sup>1</sup>**

<b>Category</b>	<b>Subcategory</b>	<b>Action</b>
Buildings and Efficiency	Building codes, standards and certifications	Pursue building certifications and best practices
Transportation And Land Use Planning	Land Use Planning	Walk-able, complete, mixed use community planning
	Improved Transportation Options and infrastructure	Public transit service expansion, Bicycle & pedestrian infrastructure
	Municipal Fleet (passenger And freight)	Municipal Operations Changes
Renewable Power	Local and clean power generation	Distributed generation outreach & Communications
	Supporting policies	Goals and challenges issuing

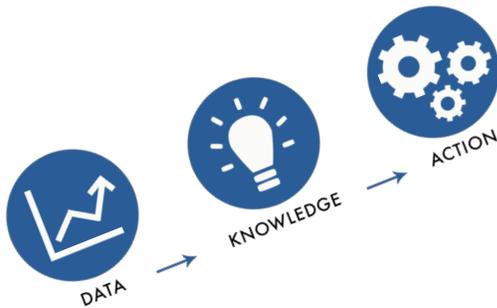
The Sustainability Team identified a sub-team of members from across the city and related community entities to develop the plan. Those members are:

- Jeff Easter                      General Services Director COH
- Danny Shea                     Natural Resources Director COH
- Tommy Brown                  Parking and Public Transit Director COH
- Joy McKee                      Landscape Management/Operation Green Team Director, COH
- Dennis Madsen                Urban and Long Range Planning Manager COH
- Shane Cook                     Water Pollution Control Director, COH
- Tim Barnes                      GIS Department Head COH
- Mike Blankenship              Fleet Manager COH
- Harrison Diamond              Business Relations Officer COH
- Paige Colburn                 Planner COH
- Jeff Taylor                      General Services COH
- Doc Holladay                 Solid Waste Disposal Authority Director
- Jeffrey Wilson                 Operations Director Huntsville City Schools
- Andy Bernard                 Energy Program Manager Huntsville City Schools
- Joe Gehrdes                    Communications & PR Director Huntsville Utilities
- John Olshefski                VP Customer Relations Huntsville Utilities
- Will West                        Huntsville-Madison County Chamber of Commerce

This reports summarizes the city’s current goals, vision and objectives for energy and greenhouse gas reductions. It identifies actions, or specific implementable efforts, policies

or programs aimed to achieve the energy/GHG reduction goals, and it links actions to metrics or measurements and indicators for understanding impacts of actions and progress toward goals. Finally it supports the use of data, observations used to inform measurement of actions and progress toward goals, to monitor progress and goal attainment.

**“Mayors are helping their cities see the value of using technology and data to drive decisions and make their city governments more efficient and effective.”**



**National League of Cities 2016  
State of the Cities.**

Table 2 above outlines some common city-related metrics identified in each category of energy related planning.

*Table 2: Common city-related metrics identified in each category of energy related planning*

Category	Metric
Emissions	Greenhouse Gas (GHG) emissions (community wide) (MT of CO <sub>2</sub> e/year)
Energy	Energy consumed (community-wide) (MMBtu/year)
Renewable Power	Renewable energy production (MW installed/year)
Building and Efficiency	Energy consumption (buildings) (MMBtu/year)
	Green Building Rating & Certification Systems (e.g. Energy Star, Leadership in Energy & Environmental Design or LEED, Living Buildings, Green Globes)

During the 2014 Georgetown University Prize Competition year, team leads from Huntsville City Schools, Huntsville’s municipal operations and Huntsville Utilities agreed to support the following goals from the Tennessee Valley Authority’s (TVA) 2014 proposed

Integrated Resource Plan and its clean energy, efficiency and emissions reduction targets:

- 50% reduction in GHG emissions by 2033 (from 2005),
- 20% renewables in the generation mix by 2020, and
- an energy efficiency portfolio that achieves savings approaching 1% of annual sales

Mayor Battle’s letter of support dated October 31 2014 (Exhibit C) addressed to the TVA Office of Economic Development provided direction for further work in transportation alternatives, GHG emissions and reducing waste energy. The sub-team will provide input in this document identifying more refined spatial and temporal metrics to be tracked in the Long Range Urban Plan. The sub-team has indicated its preference for using Energy Use Intensity (EUI or energy/square foot/year) and in MMBtu/year to measure energy consumption per capita over time. The continued growth of this community and its supporting municipal operations is the prime consideration for using per capita/square foot units.

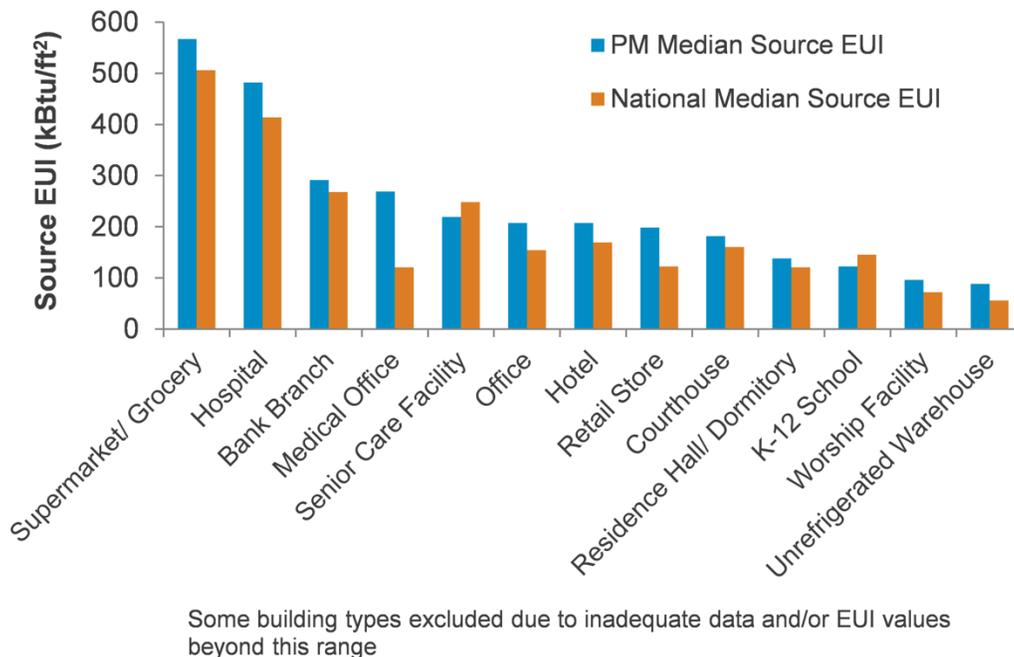


Figure 1 Energy Use Intensity Information comparing Portfolio Manager to National Median

Expressing energy intensity or expenditures as a percentage of current dollars GDP (or

Gross Metro Product) is a common historical metric for tracking growth against energy consumption. Seeking to reduce the ratio over time and space provides another goal option still under consideration. Some measures may be better managed in a footprint larger than the municipality, at some regional level but most likely not larger than the metropolitan statistical area.

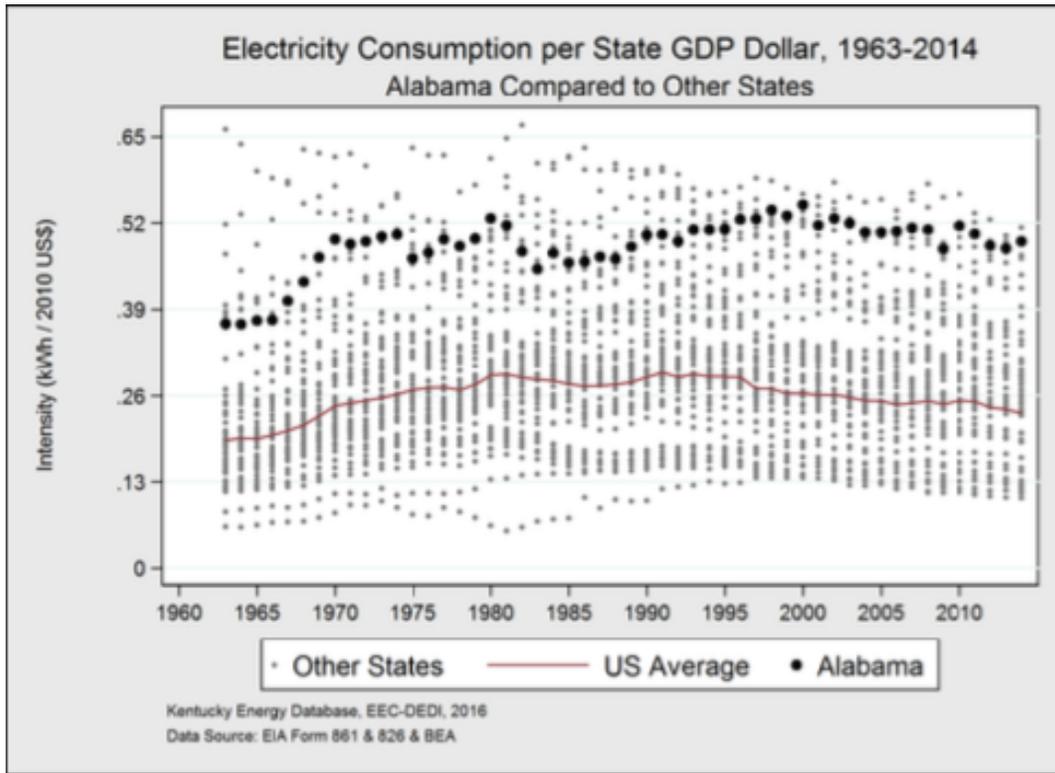
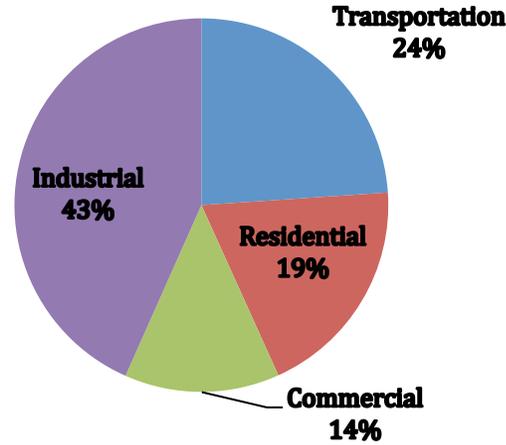


Figure 2 Energy Consumption per State GCP Dollar compared to Alabama.

Other Alabama state statistics on energy use and costs ([www.eia.gov/state/al](http://www.eia.gov/state/al)) that are relevant to consider are:

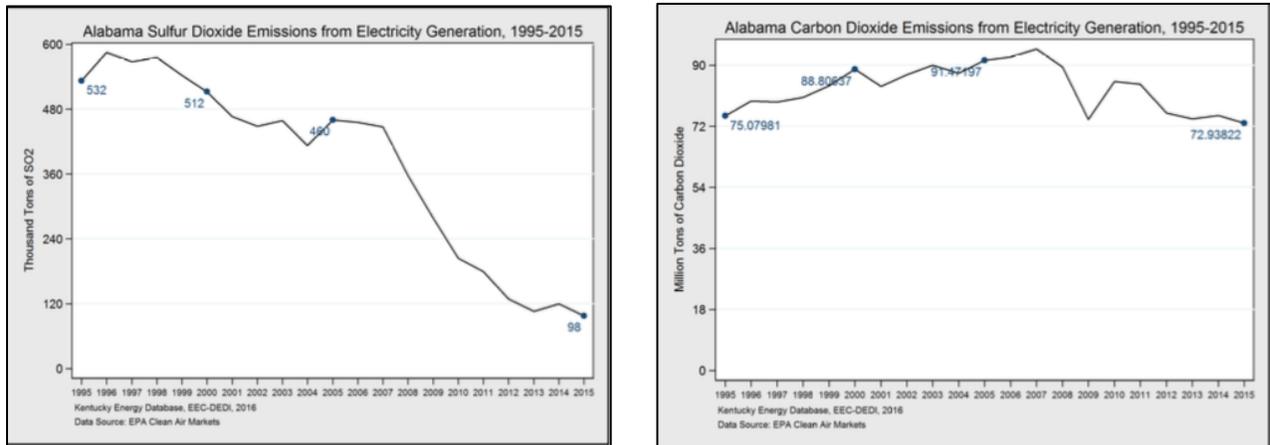
- State per capita spending on energy in 2014 was \$4,982 or 13.28% of per capita income
- Energy Expenditures in 2014 as a percent of current dollar GDP was 12.0%
- Per capita energy consumption in 2014 was 404 MMBtu (12<sup>th</sup> highest in country)
- 13,551 miles per resident is average vehicle miles traveled annually

## AL Energy Consumption by End-Use Sector 2014



*Figure 3 Alabama Energy Consumption by End-Use Sector in 2014.*

And Historic Alabama state emissions data is as follows:



*Figure 4 Historic SO<sub>2</sub> and CO<sub>2</sub> Emissions Data for Alabama*

### Progress since 2012 Energy Plan Recommendations and 2014 Georgetown Report:

One existing and ongoing municipal data reporting tool is the 5-year cycle reporting undertaken since 2000 on Greenhouse Gas Emissions for both municipal operations and the community at large. (<http://www.huntsvilleal.gov/environment/air-quality/air->

[pollution-control-program/air-quality-daily-index-reports/](#) ) The City of Huntsville's Department of Natural Resources and Environmental Management manages one of only two local air pollution control programs in the State of Alabama. Its reporting on greenhouse gas emissions since 2000 exceeds many municipal data collection and reporting strategies on this subject to date. Completion of the emissions report for 2015 is in progress. Collectively this work provides the benchmarks for measuring progress going forward.

## City of Huntsville GHG Emission by Source 2010

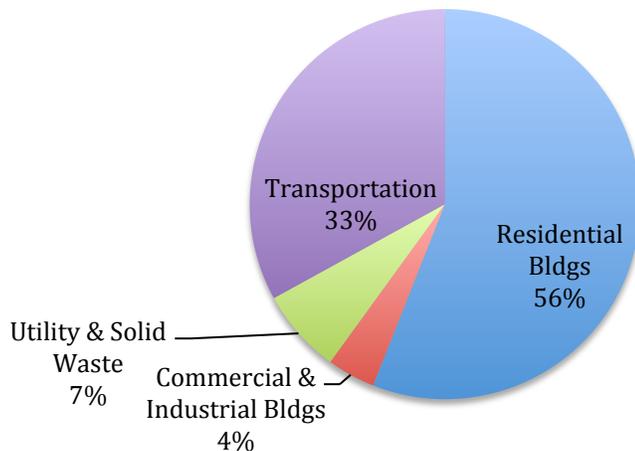


Figure 5 City of Huntsville Green House Gas Emissions by Source in 2010

Other data reporting tools instituted since 2014 include one by Huntsville's municipal operations, managed by its General Services Department and another by the Huntsville City Schools. Each have established water and energy use inventory capabilities that generate building level Energy Star scores, interfaces with EPA Portfolio Manager, and capture raw utility data on consumption and expenditures for water, gas and electricity. General Services' purchased a utility software management system called *Utility Trax*. Huntsville City Schools has worked via Energy Huntsville's Better Buildings Challenge program and Huntsville Utilities to streamline its utility data transfers directly into EPA's Portfolio

Manager. Sub-metering and other more detailed energy data management capabilities are being further integrated into new school construction as needed. Continuous commissioning will be a component of Huntsville City Schools' on-the-job-training for existing facilities staff.

Finally, the City of Huntsville Geographic Information Systems Office and the Energy Huntsville Better Buildings Challenge team has been working with municipal (schools and city) buildings data to develop a dashboard-like energy and water reporting interface and map to be used internally until such time as the utility can provide a community level data reporting platform that is geo-referenced and secure. This level of data reporting and transparency will be an important component to benchmarking and tracking sustainability metrics ongoing and as part of the Long Range Urban Plan. Energy Huntsville's Better Buildings Challenge - only focused on commercial buildings - is now available at [www.hsvbetterbuildings.com](http://www.hsvbetterbuildings.com).

**Goals and Actions:** The established goals based on the TVA's projections of its own fiscally stable emissions reduction targets include a:

- 50% reduction in GHG emissions by 2033 (from 2005),
- 20% renewables in the generation mix by 2020, and
- an energy efficiency portfolio that achieves savings approaching 1% of annual sales

The approach identified is consistent with Huntsville's Long Range Urban Plan, with other city's energy and emissions plans, and has been approved by the sub-team. It seeks to achieve these goals with actions and metrics in three areas: (1) buildings and efficiency, (2) renewables, and (3) transportation and land use. The goals, actions and metrics for each are presented below.

**Area 1. Buildings and Efficiency Goal:** Huntsville is reducing Energy Use Intensity per square foot (*metric*) in its homes and municipal buildings, measuring its GDP against its commercial and industrial buildings energy consumption, and reducing commercial energy waste by 5% (*metric*).

**Action:** Complete the Georgetown University Energy Prize (GUEP) Competition - Huntsville entered the GUEP Challenge to win \$5M by reducing its energy use in residential and municipal gas and electric meters (from its 2012 -2014 baseline) during the 2015-16 competition time period. As of June 2016, Huntsville was leading the competition in which each city is essentially competing against itself.

**Metric:** By 2017, 40% of Huntsville City School students will be housed in highly efficient buildings (1.5M sq. feet) while reducing its building footprint by 500,000 sq. feet and reducing energy waste by 40% from its 2011 baseline year

**Metric:** Win \$5M from GUEP competition and reinvest those funds into more energy efficiency programming

**Metric:** Municipal operations are reporting energy data consistently via EPA's Portfolio Manager (PM) or a similar reporting format by the close of 2017

**Metric:** Huntsville Utilities is processing requests to seamlessly upload energy data to EPA PM for its customers including industrial and commercial customers in 2017

**Action:** Establish a municipal energy conservation sub-team to drill down further on reducing energy waste in municipal operations and to identify the most appropriate energy and water efficiency projects. Operation Green Team will support Engineering, Traffic Engineering, Water Pollution Control, General Services, and Landscape Management with input from Finance and Huntsville Utilities to identify and implement multi-departmental water and energy efficiency related projects including but not limited to:

**Metric:** A comprehensive LED street lighting retrofit project is designed and implemented by 2020

**Metric:** Training energy managers in each department to understand reporting tools and metrics and to implement the activities identified by the sub-team. Consider partnering with other cities and support organizations to develop a

Certified Energy Manager or related type training specific for municipal employees' needs. Model on the US Army Corp of Engineers Energy Branch Division's training for Garrison energy management staff.

**Metric:** Target a minimum 1% of annual energy spending for funding energy efficiency projects. The savings generated by the projects identified and implemented by the sub-team are added to and reinvested into other municipal energy and water efficiency projects.

**Metric:** Water reduction goals still being agreed upon and could range from 2 – 5% per acre for irrigation and potable water from a 2010 baseline. In 2014, Mayor Tommy Battle committed that Huntsville would become a GIG City. In February of 2016, Huntsville announced it has reached an arrangement with Google Fiber to lease dark fiber from a Huntsville Utilities designed fiber optic network. This fiber optic network will allow Huntsville Utilities to monitor water better and stop leaks sooner.

**Action:** Grow and sustain the Home Extreme Energy Makeover – Over 2016-17, Huntsville Utilities leveraged a grant from TVA for \$11.7M to reduce energy waste by a minimum of 25% in 1,100 low wealth homes measurably improving quality of life, health outcomes and economic prosperity in our "hardest to help" families. As of August 2016, the utility has qualified 966 homes, completed 635 whole home upgrades, and spent almost \$5.9M in project funds.

**Metric:** Continue energy efficiency upgrades in 1.5% of residential building stock annually after 2017

**Action:** Identify local funds and other local financing mechanisms to continue energy efficiency improvements in low wealth homes and add other energy efficiency programs

**Metric:** Huntsville Utilities operates an on-bill financing program beginning in 2017 to support financing for mid-income home energy efficiency upgrades

**Metric:** Establish sustainable program for continuing low wealth home upgrades

**Action:** Expand Energy Huntsville's Better Buildings Challenge (BBC) Initiative – Energy Huntsville began BBC in 2014 with data reporting for Huntsville City Schools, the U.S. Space and Rocket Center (that has a goal for establishing a net zero energy campus) and completed its inventory upload in 2016. Seventy buildings are currently being reported in the program. The community partners will continue to refine and develop goals and transparency tools for the program.

**Metric:** Reduce energy use in commercial and industrial buildings by 20% or more within 10 years from 2016 (the stated BBC goal).

**Metric:** City of Huntsville joins Huntsville City Schools in the reporting of municipal building energy data by 2018 and establishes further reduction goals

**Metric:** Huntsville Utilities operates as a Better Buildings Challenge utility ally to provide its commercial customers with energy efficiency multi-measure programs that result in energy savings of 5% across the class, electronic data submissions compatible with EPA Portfolio Manager, and ongoing innovative residential efficiency programs.

**Area 2. Renewable Goal:** Huntsville has reduced its dependence on fossil fuels, improved its resilience to disaster impacts like floods and tornadoes, and supports reorganization of a utility model that safely promotes a clean energy economy.

**Action:** Huntsville Utilities has prepared the grid and infrastructure for distributed generation capability by 2020

**Metric:** Automated metering infrastructure and real time energy data analytics are supported system wide by 2020

**Metric:** Provide for and support the testing of micro-grid or distributed grid technologies to co-exist within the local utility infrastructure

**Metric:** Increase renewables to 20% of the generation mix by 2020 (metric MW installed/year)

**Action:** Huntsville is a “Solar Ready” community by 2018

**Metric:** Huntsville has further streamlined permitting and policies to promote the integration of grid tied solar energy and “behind the meter” systems to homes and businesses

**Metric:** Huntsville applies to participate in DOE’s 2017 SolSmart program, a Sunshot Initiative, to reduce solar soft costs related to permitting, financing and installation.

**Action:** Focus growth in advanced energy economy

**Metric:** Using a 2014 baseline study that identified a potential of 2,500 companies employing 50,000 people engaging in \$4B in annual revenues, track number of companies and workers with the skills that transfer to the advanced energy economy

**Metric:** Report regional or MSA Gross Domestic Product as a function of energy use. Energy Productivity is the amount of service or useful work produced by a unit of energy. It is the inverse of energy intensity, which is the energy consumed per unit of work done. DOE’s goal is to double energy productivity over 2010 levels by 2030. The Huntsville (or greater) community could consider whether this is a goal it can support.

**Action:** Promote local financing models that aid in meeting annual energy efficiency and greenhouse gas emissions reduction targets

**Metric:** Partners identify and promote 3 – 5 new funding sources for residential, commercial and industrial energy efficiency programs

**Area 3. Transportation and Land Use Planning Goal:** Support adoption of alternative fuels vehicles, reduction in vehicle miles traveled and adoption of multi-modal transportation plans & continue traffic synchronization efforts where needed

**Action:** Expand the Workplace Car Charging Challenge (Electric Vehicle adoption)

**Metric:** Provide for adequate electric car charging infrastructure build out within municipal operations

**Metric:** Promote business and industry's adoption of workplace electric car charging infrastructure across the community

**Action:** Support fleet transition of light duty fleet to electric and hybrid, heavy-duty fleet to CHG, regenerative braking and alternative hydrocarbon fuels. In 2014 Huntsville's Fleet Department began its replacement program designed to reduce emissions and fuel costs. Life cycle costing is now built into the procurement and replacement plan.

**Metric:** Twenty percent of the annual fleet budget is dedicated to support the replacement program operations.

**Metric:** 5% of municipal fleet is alternative fuels vehicles by 2020

**Metric:** Decrease Vehicle Miles Traveled (VMT) by 2% annually and/or fuel consumption via driver behavioral change, improved logistics, and route optimization

**Action:** Support the community developing economic alternatives in transportation

**Metric:** Increase ridership in alternative transportation modes like Uber and Zipcar that were introduced to the community in 2016

**Metric:** Huntsville increases the number of its streetscapes designed consistent with Complete Streets guidance or Huntsville adopts a Complete Streets Ordinance.

**Metric:** Add sidewalks to walk-able neighborhood streets ( $\frac{1}{4}$  mile annually)

**Metric:** Increase shuttle bus use on and among university campuses

**Action:** The Big Picture process and LRUP results in transparent community-wide goals and benchmarks for energy efficiency, alternative transportation and greenhouse gas reductions that are tracked and shared at the neighborhood level.

**Action:** Integrate and display these sustainability metrics in the Long Range Urban Plan

**Metric:** Reduce greenhouse gas emissions by 50% from 2005 baseline year by 2033

**Metric:** Create metrics, geographic boundaries, mapping and display format by close of Big Picture process or extend in another engagement activity

**Action:** Follow federal and state pollution standards & clean energy plan guidelines to reduce CO2 levels with no net cost to the economy

**Metric:** 25/33% reduction in electricity consumption by 2030 relative to 2010/2012 baseline years

**Metric:** City energy data is now measured and tracked against a 2010 baseline year using Utility Trax, a utility management software product

**Metric:** Continue mitigation of CO2 via a comprehensive urban forestry program in place to plant 5,000 trees on average annually in mitigation banks, streetscapes, parks and other urban public properties. <https://www.facebook.com/events/136108010164176/>

**Summary and Conclusions:** Huntsville continues the work of integrating sustainability into its functional fabric including now its integration into the long-range urban plan. This report provides an update on benchmarks and metrics being pursued by the municipal team and community partners. It's apparent that the work is "in progress" and the future looks promising for continuously improving the sustainability of Huntsville's municipal operations. Community engagement on the long-range urban plan continues.

<http://www.huntsvilleal.gov/big-picture-exhibition-highlights-master-plan/> Through this process, Huntsville will support the direction of both the federal and state agencies along with TVA

to address greenhouse gas reductions, reduce energy waste, and to create and advance a stronger, more advanced and resilient energy economy. Next steps include the completion of the Georgetown University Energy Prize Competition, continued collaboration of the partners to pursue resources for furthering community engagement, data collection and the establishment of these benchmarks, metrics and targets displayed transparently via Huntsville's online "Big Picture" comprehensive plan & process.

## Exhibit A

### On Designing A City-Scale Energy Efficiency and Retrofit Plan For Huntsville Alabama

**Who will build the plan?** The team developing Huntsville’s Energy Efficiency (EE) and Retrofit Plan for the Georgetown University Energy Prize (GUEP) competition already works together on energy-related matters. Each, as part of their positions within the city, has been part of a local economic development effort tied to energy and energy technology called “*Energy Huntsville*”. The team includes municipal leadership from the Mayor’s office, applicable municipal department heads and specialists to carry out the work. The local utility, Huntsville Utilities (HU), is city-owned and distributes power locally for the Tennessee Valley Authority (TVA). Its team participation and programmatic support includes the CEO, CFO, VP for Customer Relations, and Governmental Relations staff along with technical engineers and community relations staff who will implement the plan. Finally, the leadership team includes the local school system’s Operations Director and support staff.

The process by which the Huntsville Team will develop Huntsville’s plan for participation in the Georgetown University Energy Prize is:

- *Comprehensive* with respect to addressing municipal and residential accounts/meters, including low-income housing and multi-family
- *Inclusive* when engaging its stakeholders, and
- *Integrated* with *The Big Picture*, (<http://bigpicturehuntsville.com>) Huntsville’s long-range urban planning process currently underway, and a more comprehensive community energy plan under development.

These three characteristics ensure that Huntsville’s city-scale energy efficiency and retrofit plan is systemic, sustainable and replicable in other contexts.

**What will the plan address?** Huntsville’s Energy Efficiency & Retrofit Plan components as specified in the Georgetown University Energy Prize (GUEP) guidelines are outlined in Exhibit B that follows this attachment.

Key program elements<sup>1</sup> include:

- Policy – *review of existing state and local influencers*
- Program Structure – *with a goal of making the experience easy for the consumer*
- Financing and Repayment Mechanisms – *On-bill financing is one key aspect Huntsville will implement with guidance from SEEAAction’s May 2014 “Financing Energy Improvements on Utility Bills: Market Updates and Key Program Design Considerations for Policymakers and Administrators”*
- Labor Standards and Workforce Development – *including targeted local hiring from disadvantaged communities and working with local training organizations*

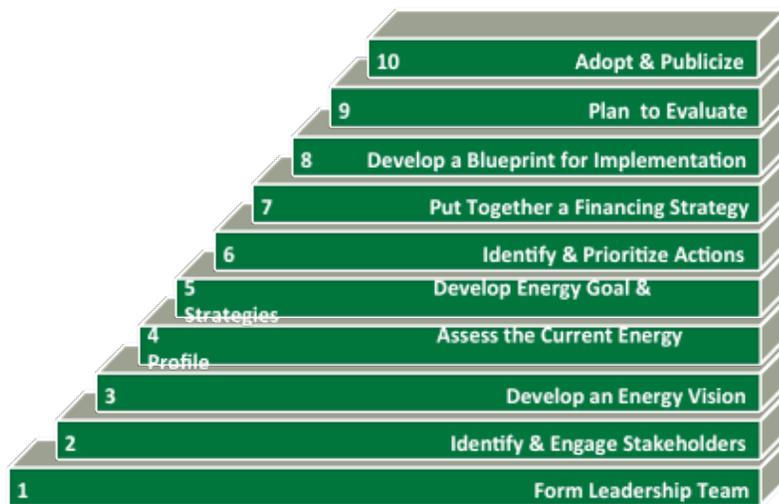
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<sup>1</sup> Taken from Ho, S. and Rhodes-Conway, S. (ND) *A Short Guide to Setting Up A City-Scale Retrofit Program*. Green for All and The Center on Wisconsin Strategy (COWS)

- Targeting and Marketing – *with goals set that include low-income housing and establishing the “one stop, shop” comprehensive services feel including an online download-able energy consumption data function like Green Button*
- Quality Control and Evaluation – *adopt standardized reporting metrics and disclosure practices as discussed in ACEEE’s March 2014 Report No U1402 entitled “The Best Value for America’s Energy Dollar: A National Review of the Cost of Utility Energy Efficiency Programs”, pgs. 37 – 38 and ACHEE’s Policy Toolkit June 2014 “Residential Energy Use Disclosure: A Guide for Policymakers.*

**How will the plan be developed?** The leadership team will meet bi-weekly beginning in August and continue following the DOE’s Community Energy Strategic Planning Academy’s format for energy planning.

### Community Energy Strategic Planning Process



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**ENERGY** | Energy Efficiency & Renewable Energy

The leadership team will establish energy efficiency goals and strategies for the municipal buildings and the residential energy efficiency program components. Some targets for consideration in goal setting include:

#### Federal Executive Order

- 20% of energy use should be derived from renewable sources by 2020
- As of 2020, all planning for new Federal buildings requires design specifications that achieve Zero-Net-Energy use by 2030
- 30% reduction in vehicle fleet petroleum use by 2020
- 26% improvement in water efficiency by 2015
- 95% of all applicable contracts will meet sustainability requirements

#### State Executive Order

- Reduce energy consumption by 30% from 2005 levels by 2015 in all state agency buildings (municipal)

ACEEE recommendation for Alabama to address EPA's carbon pollution standard to reduce CO2 levels with no net cost to the economy

- 22% reduction in electricity consumption by 2030 relative to 2012 baseline

TVA

- 20% reduction in GHG emissions by 2020, 20% renewables in the generation mix by 2020, and 1% reduction in annual sales for EE (per IRP, forthcoming)

Since the Huntsville Energy Efficiency and Retrofit Plan will address only portions of a more comprehensive community energy plan, and likewise, is a subset to the long-range urban planning process underway, the following steps in community energy planning will provide feedback into both. The long-range plan will include an energy focus group for gaining stakeholder input once the initial plan is drafted. Energy financing strategies for the municipal energy efficiency projects are especially dependent upon capital improvement budgets that will result from priorities set by the outcomes of long-range planning goals. Likewise, the community energy planning will build upon the foundations established as a result of the Municipal Energy Efficiency and Retrofit Plan. What follows is an itemized list of relevant tasks for community engagement around energy planning.

#### **Develop and Assess Municipal Energy Profile**

- Review and revise Huntsville's ACHEE Local Energy Efficiency Self-Scorecard Tool (municipal/residential)
- Work with HU to obtain data analytics (residential) for developing behavioral energy efficiency program (Opower or Energy Savvy type analytics) to apply peer pressure tactic
- Populate energy use management tool (Energy CAP, Noesis, or Build our Own a' la Honest Buildings like "Smart Build" DC's General Services, all compatible with EPA Portfolio manager (municipal)

#### **Identify and Prioritize Specific Programs/Actions to meet Goals**

- Finance Strategy - on-bill financing from HU (residential)
- Ramp up existing HU/TVA residential EE programs in accordance with goals
- Consider Ordinance for multi-family/tenant properties (Memphis example)
- Ramp up gas systems conversion of water heaters
- Address street lighting conversion (municipal - QECB\$?)
- Review priorities and related best practices in Better Buildings Residential Network Solutions Center guidance

#### **Additional ideas to consider**

- AMI pilots in residential and municipal settings
- Alabama WISE evolution/Housing Authority & low income housing focus
- Reduce "Ghost" Consumption - draws when no one home (15% reduction w/no investments - behavioral)
- Managing Office Eqmt Plug load (municipal/schools)

- Plug Load Dashboards / Gadget Fairs
- Energy Star IT tips
- Neighborhood Level EE education and outreach (social change framework)
- K-12 energy efficiency education and outreach (Link w/GreenPower USA)

### **Blueprint for Implementation w/budgets**

- Include budgets for municipal buildings (part of capital improvement \$)
  - Roofing and HVAC upgrades
  - OGT education and outreach
- HU budget and admin for residential EE, education and outreach
- Huntsville City Schools responsible for upgrades and education
- Collaborations with community partners
  - Huntsville Hospital
  - Redstone Arsenal and Marshall Space Flight Center
  - Public Libraries

### **Establish Evaluation and Reporting Process**

- Link and monitor goals to actions and outcomes
- Engage with municipal GIS department to overlay municipal buildings energy data on GIS
- Use standardized reporting for EE programs as outlined by NEEP’s “Common Statewide EE Reporting Guidelines”

### **Communicate the story (marketing and outreach for GUEP) and engage stakeholders/partners for further developing Community Energy Plan to include business/industry**

- Using Exemplar City model to engage in Better Buildings Challenge with business/industry and report on municipal GIS website
- Support alternative transportation strategies and infrastructure that reduce dependence on fossil fuels (CNG and EV)
- Develop marketing for public engagement (residential) and programs for city employees on behavior`

Huntsville’s Energy Efficiency and Retrofit Plan will ultimately provide streamlined end-to-end support for Huntsville residential participants including online and downloadable energy consumption data. Municipal staff will work with HU and Energy Huntsville representatives to identify high yield retrofit opportunities. Leadership team members will work with city staff and council to establish support for applicable budget line items for projects going forward. All participants will work with community stakeholders and interested groups to move Huntsville’s energy planning forward as a GUEP competitor-city.

Targeted Huntsville/GUEP competition participants include but are not limited to:

- Huntsville-Madison County Public Library System
- Home Owners Associations through the Offices of Multicultural Affairs
- Community Development

- Huntsville Housing Authority
- Energy Huntsville LLC (200+ companies engaged in energy industry economic development)
- Huntsville-Madison Home Builders Association
- Huntsville-Madison Board of Realtors
- Habitat for Humanity
- Nexus Energy Center
- Solid Waste Disposal Authority (manages waste to energy plant)
- Redstone Garrison and its tenants (access to residents)
- Army Corp of Engineers, Energy Branch Division (located in Huntsville)

**Exhibit B**  
**GUEP Recommended Plan Components**  
**August – November 2014 timeframe for completion**

1) **Overall Program** - Description of the community's long term energy-savings program that will be implemented, including:

- Leadership and management;
- Energy-saving methods and technologies;
- How the program will be staffed and funded;
- Local government involvement and commitments;
- Any benefits and incentives available from local utilities via official Energy Efficiency Programs (which are mandated in many states);
- Involvement of businesses or business-groups (even though their energy use isn't counted);
- Involvement by citizen groups and major landlords;
- Involvement of other partnering organizations (including letters of commitment, if available);
- Any Plan components that target high-return opportunities
- Any municipal incentives that can be provided via local regulations, zoning, taxation, etc.;
- How retrofits and other capital improvements will be included in the program (Diverse retrofit technology is widely available, but adoption rates historically have been low) this portion of the Program Plan should address;
- : Types of retrofits that will be encouraged;
- Retrofit financing (preferably with no cash from current property owners);
- Retrofit business resources;
- Retrofit marketing and sales strategies;
- Adoption goals.

2) **Innovation** – What's innovative about the Plan?

3) **Potential for Replication** – Why might aspects of the plan become a model for other communities?

4) **Likely Future Performance** – Why are the energy-savings that will be achieved under the Plan likely to be permanent? And why is the Plan likely to yield additional savings, continually, after the competition?

5) **Equitable Access** – Discussion of how the plan will reach diverse aspects of the community - geographic, demographic, economic, functional, etc.

6) **Education** – How will local K-12 schools be involved? What community-wide educational programs are planned?

7) **Proposal** for how the projected prize purse would be used to promote and implement energy efficiency measures in a way that benefits the community as a whole, including all demographic and economic sectors.

## Exhibit C



# HUNTSVILLE

Tommy Battle  
Mayor

Tennessee Valley Sustainable Communities Program  
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Nashville, TN 37229-2409

October 31, 2014

Re: City of Huntsville's Green House Gas (GHG) goals and related status to attaining platinum level designation in TVA's Sustainable Communities Program

Dear Ms. Calloway:

Please be advised that our city and its partners at Huntsville City Schools and Huntsville Utilities are currently pursuing participation in the Georgetown University Energy Prize (GUEP) Competition. It has been agreed that the intent is to submit that plan on November 10<sup>th</sup> reflecting support for the planning strategies being evaluated currently in the TVA's 2015 Integrated Resource Plan (IRP) as follows:

- 50% reduction in GHG emissions by 2033 (from 2005),
- 20% renewables in the generation mix by 2020, and
- an energy efficiency portfolio that achieves savings approaching 1% of annual sales

We are aware that these planning strategies are currently under evaluation by the IRP team and therefore do not constitute final targets or goals for TVA's future. Our intent is to work collaboratively with TVA to support moving in this direction subject to the final IRP being completed, reviewed and acted upon at the discretion of the TVA Board of Directors in summer 2015. At that time, as a continuation of the GUEP competition, we will review and reevaluate these proposed goals in light of TVA's findings and the Board's decision.

Achieving GHG reduction goals for our community will involve focusing on the transportation sector's transition to alternative technologies – a process that is already underway with transitioning electric vehicles for passenger cars and/or compressed natural gas for heavy fleet and supporting infrastructure build out where appropriate. Local GHG emission reductions will indirectly result from TVA's altering its electricity generation mix. Reducing waste energy, the prime focus of the GUEP competition, will also aid in GHG reductions overall. We will measure GHG reductions via the GHG inventory that our Department of Natural Resources performs for the City and County since 2000 on a five-year cycle.

If the Operation Green Team staff or I can be of further assistance in this matter, please do not hesitate to contact us. Thank you for considering this progress for evaluation in the Sustainable Communities Program.

Sincerely,

Tommy Battle, Mayor

**The Star of Alabama**

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