SUSTAINABLE SHELBY

PROGRESS REPORT

February 2014

Memphis & Shelby County
Office of Sustainability

SHELBY COUNTY, TENNESSEE
AND
CITY OF MEMPHIS

A C WHARTON, JR.
City of Memphis Mayor

MARK H. LUTTRELL, JR.
Shelby County Mayor

Dear Memphis-Shelby County residents,

This marks five years since 130 of the regions citizens came together to write the Sustainable Shelby Implementation Plan. The document was finalized in 2009 as the region's first agenda for sustainability. The plan established a strategic framework for action with regard to "green" initiatives in Shelby County.

Many citizens spent months formulating ideas to better our environment in the categories of building codes, environment and natural resources, land use and development, neighborhood rebirth, public buildings and purchasing policy, public incentives, and transportation and traffic. The result was 151 strategies to make Memphis-Shelby County environmentally friendly.

Over the years 85 (56%) of the 151 strategies in the plan are either complete or in-progress. We are proud of the progress we have made in a relatively short time frame; however, we understand that we still have a long way to go. Sustainability allows us to maximize efficiencies in neighborhoods and in our respective government operations. By balancing the environmental, economic, and social needs of the community through the lens of sustainability, we can confront challenges in a more holistic manner.

We hope that more residents in our region explore how they might be better stewards of resources used on a daily basis. Whether it is walking, bicycling, recycling, energy efficiency, or eating locally grown foods, there are numerous ways for everyone to get involved. Your continued efforts will have a great impact in moving our community forward.

Sincerely,

Mark H. Luttrell, Mayor
Shelby County

A C Wharton, Mayor
City of Memphis

INTRODUCTION

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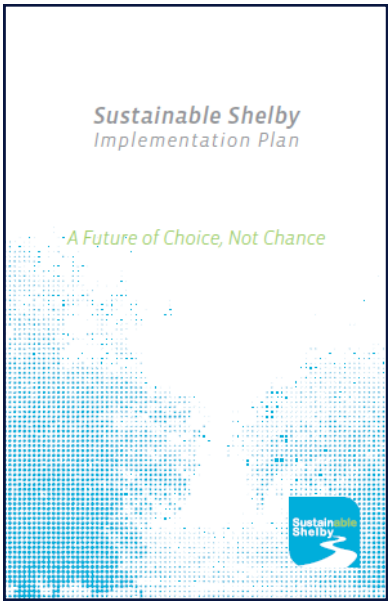
In 2008, over 130 residents of the City of Memphis and Shelby County developed the Sustainable Shelby Implementation Plan. The plan was completed in early 2009 and laid out 151 strategies for a greener, smarter, and more sustainable future in Memphis and Shelby County. The strategies focused on areas such as neighborhood planning, energy efficiency and renewable energy, resource conservation, recycling, transportation, and community health amongst other issues. The Office of Sustainability was formed to oversee the strategies set and to report progress on these initiatives to the public. In April 2011, City of Memphis Mayor A C Wharton, Jr. and Shelby County Mayor Mark Luttrell, Jr. formed the Memphis and Shelby County Office of Sustainability. The Office is located in the joint City-County Division of Planning and Development.



In Memphis and Shelby County, the working definition of sustainability is to preserve and maximize resources for future generations. The Office of Sustainability is charged with oversight of the Implementation Plan; however, the strategies in the plan require immense collaboration amongst City and County departments, as well as nonprofits, businesses, Chambers of Commerce, suburban municipalities and individuals. There is an emphasis on activities that bring a triple bottom-line return for the citizens of the City and County by providing environmental, fiscal, and social benefits to the community. By applying this triple bottom line approach, it is ensured that the government services deliver maximum benefit to the citizens of Memphis and Shelby County.

This Progress Report provides a broad overview of the programs and activities that have taken place in Memphis and Shelby County since the Sustainable Shelby Implementation Plan was completed in early 2009. The report highlights recent sustainability initiatives from the City of Memphis and Shelby County Government and provides data and statistics to benchmark progress in various areas.

This is the first Progress Report that has been developed for the Implementation Plan. The report is intended to provide a brief snapshot of progress in sustainability that has been made over the past five years. The report is broken into the following sections: Leading By Example, Urban Planning, Transportation, Energy, Waste, Environmental Quality, Community Health, and Community Engagement. The Appendix includes a detailed table that highlights the status of each of the original Implementation Plan recommendations.

LEADING BY EXAMPLE

QUICK FACTS

City of Memphis

# of Municipal Facilities	600+
Facility Energy Costs	$16.4M
# of Fleet Vehicles	5,130
Annual Fuel Cost	$14M

Shelby County Government

# of Municipal Facilities	100+
Facility Energy Costs	$6.6M
# of Fleet Vehicles	1,768
Annual Fuel Cost	$2.2M
Internal Recycling (2013)	1.36 tns

Wastewater Energy Reduction

In 2013, the City of Memphis's two wastewater treatment plants enrolled in the TVA-EnerNOC Demand Response Program. Under this program, the City receives recurring payments from TVA in return for agreeing to reduce electricity consumption in response to abnormally high electricity demand. Combined the plants reduce consumption by 9,000 kW and receive an annual payment of roughly $154,000 for participating.

The Sustainable Shelby Implementation Plan placed an emphasis on strategies that illustrate the City and County's commitment to "Lead by Example". As the City and County strive to create a more sustainable future for residents and businesses, it is important that local government serves as a model to show how sustainable practices can benefit the broader community. This section highlights some activities that have been undertaken in the City and County since 2009 that demonstrate a commitment to sustainability in operations.

FACILITY MANAGEMENT

The City of Memphis manages over 600 municipal facilities (1067 meters) with energy costs totaling **$16.4 million** annually (based on 2012 MLGW expenses). This volume of consumption creates a significant opportunity for the City to strategically invest in energy efficiency improvements that will garner savings. In order to achieve this goal, the City of Memphis, in conjunction with Memphis Bioworks, is working to identify initial projects in City buildings with high utility consumption.

The City of Memphis, as a part of the Clean and Green Initiative, has developed a strategy to finance the improvements in facilities through performance contracting with Siemens, which allows projects to be financed through the utility savings generated. Under this scenario, local construction jobs will be created, while adding value and increasing savings for City Government.

Shelby County Government manages over 100 facilities throughout Shelby County (320 meters), with energy costs totaling **$6.6 million** annually (based on 2012 MLGW expenses). In July 2013, Shelby County Government completed an Efficiency Review, which outlined a number of strategies intended to enhance efficiency and garner cost savings throughout the operation of government. One of the recommended strategies from this report is to "Conduct a County-wide facility review and increase energy efficiency in County facilities." This strategy falls in line with the Implementation Plan, so the Office of Sustainability is actively working with the Shelby County Division of Public Works to advance initiatives in this area.

In early 2014, the County will begin assessments on facilities to identify the specific components for replacement, starting with the Shelby County Corrections Center. It is anticipated that the bulk of these improvements will be financed through Shelby County capital improvement funds, but that will ultimately be determined after the specific improvements are identified. Once the financing is in place, the County will go through the standard procurement process to identify vendors for each project.

Shelby County Building Retrofits

In 2012, Shelby County Government began requiring that all Capital Improvement Program (CIP) projects for new facilities include a calculation comparing the cost of renovating an existing structure vs. new construction. One recent renovation is 157 Poplar Avenue where the Shelby County Trustee's Office and the Jury Pool are located. By renovating instead of building a new structure, the county saved $5.3 million. The building incorporated energy efficient technology to save on energy usage and replacement equipment costs with low-e windows and a new HVAC system. The building is of LEED quality and LEED-certified materials were used in the renovations, although the certification was not applied for due to expense.

Recycled decorative tile at 157 Poplar Avenue

Another example of retrofitting is the programmable thermostats that were installed in the Memphis-Shelby County Code Enforcement Building. This item has a 1.5 year return on investment and is projected to save Shelby County more than $4,000 annually. Shelby Farms Visitors Center received HVAC modifications as well as window film. In all, the projects should save more than $8,000 a year on utility bills.

RENEWABLE ENERGY

Renewable energy helps to offset greenhouse gas emissions from the fossil fuels traditionally used to generate energy. In recent years, the City of Memphis and Shelby County have taken a leadership role in the community by implementing three projects on public land: (1) a 2 MW biogas system at the T.E. Maxson Wastewater Treatment Plant; (2) a 10 kW solar canopy for electric vehicle charging at Shelby Farms Park; and (3) a 1 MW solar array at Agricenter International. Each project provides a visible demonstration of how renewable energy can be applied in this community.

Incentives for renewable energy are constantly evolving, but the City and County will continue to explore opportunities to expand the use of renewable energy for municipal purposes.

INTERNAL RECYCLING

The City of Memphis and Shelby County are continually working to improve internal recycling programs for employees. In late 2012, the Office of Sustainability worked with the Shelby County Division of Public Works to expand the accepted list of recyclable materials from solely paper to include cardboard, plastics (1-7), and aluminum. The program was piloted at two sites (Vasco Smith Administration Building – 160 North Main and Peggy Edminston Administration Building – 1075 Mullins Station), and has been underway since March 2013. Since March 2013, there have been 1.36 tons of recyclable materials collected in the two County facilities and there are plans to expand the program to other facilities in July 2014.

Currently, the City of Memphis provides opportunities for the recycling of paper and aluminum cans in municipal buildings. The Office of Sustainability is currently evaluating ways to address the logistical challenges of expanding the types of recyclables collected in City facilities. Using grant funds, the Office of Sustainability has purchased desk-side recycling bins for employees in City and County buildings, which will be used for the expansion of recycling initiatives.

TRANSPORTATION/FUEL

Transportation is an area that requires significant resources from the City and County and can be a great opportunity for savings. The City and County are both committed to purchasing fuel efficient vehicles as the vehicles in the existing fleet are retired. The tables below illustrate the number of vehicles in the fleets for the City and County.

City of Memphis
Fleet Vehicles By Division

Department	Total Vehicles
Mayor's Office	12
City Council	-
Boards and Commissions	-
Law	3
City Court Clerk	1
Parks & Neighborhoods	397
Engineering	103
Executive	5
Finance	3
Fire	449
General Services	634
Housing & Community Development	14
Human Resources	4
Information Services	3
Police Services	2,155
Public Works	1,207
Planning & Development	-
Memphis Housing Authority	137
MATA	2
WIN	1
Total	**5,130**

Source: City of Memphis Fleet Mngmt, November 2013

Shelby County Government
Fleet Vehicle Statistics

Division	Total Vehicles
Administration & Finance	25
Information Technology	6
Planning & Development	80
Public Works	362
Corrections	93
Health Services	102
Community Services	53
Sherriff's Office	884
Judicial	151
Other Elected Officials	12
Total	**1,768**

Source: Shelby County Fleet Mngmt, November 2013

In Fiscal Years 2012 and 2013, the City of Memphis and Shelby County spent roughly **$14 million** and **$2.2 million** annually, respectively, on fuel for vehicles. Using these figures as a baseline, this area will be monitored to track progress as vehicles are retired.

MLGW CNG Conversion

MLGW's Choctaw CNG Station
1130 Tupelo Street

Memphis Light Gas and Water (MLGW) is transitioning into 200 compressed natural gas (CNG) vehicles as traditional vehicles are retired. As of October 2013, the cost per gallon of natural gas was roughly half of the cost of regular unleaded gas, so this transition will mean significant savings for MLGW and customers.

Natural gas has a significantly reduced level of harmful air emissions compared to unleaded gas, so this transition should have a positive impact on air quality in Shelby County. In July 2013, MLGW opened its first CNG filling station to the public, which has the ability to pump 65,000 gallons/day. This is the first of five CNG stations that MLGW has committed to build for public access over the next 10 years.

HEALTHY LIFESTYLES

Both the City of Memphis and Shelby County Government have been working vigilantly to improve health outcomes for employees. As health premiums continue to rise, there is a financial and social benefit to improving employee health. The City and County are encouraging healthy eating habits by including healthier snack options in vending machines, as well as promoting bicycling by installing bike racks near their Downtown office buildings. These types of initiatives will continue to grow, as there is a clear demand and need for these types of programs for employees.

URBAN PLANNING

Planning in Memphis and Shelby County has seen a number of changes over the past five years. The decline of the economy had an adverse impact on planning because development fees that funded the Memphis and Shelby County Division of Planning and Development were dramatically reduced. This resulted in layoffs for over 100 planners and code enforcement staff in the Division in 2009. These budget constraints have made it difficult to achieve one of the fundamental goals of the Sustainable Shelby Implementation Plan which is to allocate resources and planners to developing more neighborhood-based comprehensive plans.

In spite of these challenges, there still has been significant progress in the realm of planning and there are a number of agencies that are actively working to move the needle in this area. The bulk of the recent planning projects have been funded by state and federal grant funds, while the Office of Planning and Development has been focused on the implementation of the Unified Development Code. The following initiatives briefly illustrate some of the progress made in the planning realm and highlights some of the organizations that are contributing to moving planning forward in this community.

UNIFIED DEVELOPMENT CODE

When the Sustainable Shelby Plan was written, the Unified Development Code (UDC) was seen as a key ingredient necessary for modernizing zoning rules and regulations for the City and County. The UDC was written as a form-based zoning code that would be better suited to accommodate neighborhood and infill development throughout the County. In 2011, the UDC was adopted by both the City of Memphis and Shelby County as the ruling code for zoning in the area and was the first comprehensive update to the zoning code since 1981.

MEMPHIS METROPOLITAN PLANNING ORGANIZATION

Since 2011, the Memphis Urban Area Metropolitan Planning Organization (MPO) adopted its Direction 2040 Long Range Transportation Plan (LRTP) that provides for future transportation investments in the Greater Memphis region and the FY 2014-17 Transportation Improvement Program (TIP) that allocates federal and state funding for short-term project implementation over the next four years. The 2040 LRTP and 2014-17 TIP both exhibit a focus on increasing transportation choices for the region's residents and coordinating land use and development considerations into the transportation planning process. These planning principles are also evident in the various studies the MPO has conducted or helped fund over the past several years, including the Regional Bicycle and Pedestrian Plan, the Lamar Avenue Corridor Study, Poplar-Southern

Mid-South Regional Greenprint & Sustainability Plan

In November 2011, Shelby County Government was awarded a $2.6 million HUD Regional Planning Grant to develop the Mid-South Regional Greenprint & Sustainability Plan to create a regional network of green spaces to connect Shelby County, Fayette County TN, Crittenden County AR, and DeSoto County MS. The plan covers 18 municipalities in the four counties and three states involved.

A Greenprint is a plan to balance conservation of green space and natural resources with community goals for growth and development. The Greenprint includes spaces such as: parks, greenways, trails, agricultural areas, community gardens, forested areas, swales and bioretention areas, protected waterways, wetlands, wildlife management areas, and conservation easements.

As development patterns have spread across the region over time, conservation of the natural environment has become more difficult and increasingly more important. The Mid-South Regional Greenprint and Sustainability Plan seeks to balance the natural and built environments by protecting important spaces, creating community assets, and connecting the natural and built environments.

Through the Greenprint, a regional plan for sustainability will:

- Improve regional quality of life
- Promote community health
- Enhance access to parks and open spaces
- Connect to pedestrian, bicycle, and transit to create more transportation options
- Establish better access from homes to jobs, schools, services, and fresh foods
- Attract and retain jobs and talent
- Promote eco-tourism opportunities
- Improve water and air quality
- Achieve equitable project impact

MID-SOUTH GREENPRINT PUBLIC INVOLVEMENT

332
Number of people engaged at the consortium or working group level

1,463
Number of people who have attended at least one public meeting

Planning for the Mid-South Regional Greenprint and Sustainability Plan has been coordinated by the Memphis and Shelby County Office of Sustainability and developed by a consortium of over 200 stakeholders representing over 80 organizations and close to 1,000 residents of the region. The consortium includes membership from non-profit organizations, local and state governments, educational institutions, community groups, private businesses, and individual citizens. All seven municipalities of Shelby County are formal and active members of the consortium.

The Mid-South Regional Greenprint and Sustainability Plan is expected to be completed in December 2014 and will include recommendations from the Regional Vision Plan in addition to:

- Detailed recommendations for a broader network of alternative transportation options;
- Detailed recommendations for better connecting employees to major employers and employment centers in the region;
- A Health Impact Assessment of plan recommendations to improve the impact of the vision on regional health;
- Recommendations for how to improve housing choices with an emphasis on fair housing and regional equity; and
- Best practices for integrating equity in planning.

The next phase of the initiative also involves advancing the vision plan by conducting localized or topic-focused planning activities led by many of the consortium partners. Twenty "subplanning" projects were selected in a competitive process to be conducted over the next year, ranging from plans for a multi-modal town center in Frayser to an eco-park plan for the Arkansas side of the Harahan Bridge. A complete list of subplanning projects can be found by visiting http://www.midsouthgreenprint.org/subplanning.

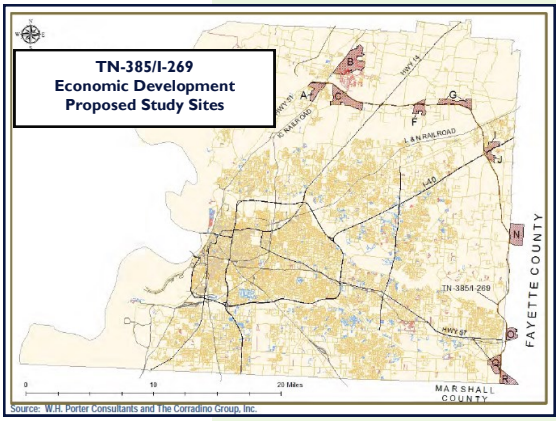
To learn more or get involved, please visit http://www.midsouthgreenprint.org.

Corridor Study, Imagine 2035 Land Use & Transportation Plan, and plans for the I-269 corridor and transit services. For more information, please visit: http://www.memphismpo.org/

MEMPHIS AEROTROPOLIS MASTER PLAN

The purpose of the Aerotropolis Master Plan and Real Estate Market analysis services was to assess and study the variety of land uses surrounding the Memphis International Airport, and develop implementation strategies and recommendations that will be useful in the redevelopment of an Airport City. It ultimately impacts the entire region with the potential to create a substantial number of businesses, jobs, and employment opportunities for Memphis residents as well as redevelop and improve infrastructure and neighborhoods. The Lamar Avenue Corridor, which is in the heart of Aerotropolis, is showing this strain and represents the lack of coordinated strategic community and transportation planning and reinvestment. The result has been middle-class flight and increased crime and blight. As a result, HUD, the City of Memphis, Airport City stakeholders developed a coordinated plan of action that can be utilized for future development and reinvestment in the study area that will forever transform Memphis into a competitive, logistics and distribution center of commerce that will benefit the City of Memphis and Mid-South Region. For more information on this plan, please visit http://www.memphisaeroplan.com.

TN-385/I-269 ECONOMIC DEVELOPMENT AND ENVIRONMENT STUDY



The TN-385/I-269 Corridor in Shelby County will eventually be connected with I-69 creating a Shelby County direct link to an international trade route reaching from Canada through the United States to Mexico. This study was conducted to address possible growth that could accompany this roadway infrastructure in an orderly and sensible manner to further strengthen the economies of Shelby County and its municipalities. The objectives of the study were to: (1) examine opportunities for large scale economic development projects along the Corridor; (2) identify the environmentally sensitive areas of the Corridor; (3) provide the municipalities and Chambers of Commerce with quantifiable research and data to identify marketable sites for development that can be promoted; and (4) strengthen relationships for further collaboration on regional economic development strategies. The Office of Sustainability coordinated this study on behalf of Shelby County with funding from the U.S. Economic Development Administration in 2013. The study was completed in collaboration with Shelby County municipalities, Chambers of Commerce, as well as Memphis Area Association of Governments. The final plan was completed in June 2013 and is available for review here.

FUTURE URBAN PLANNING INITIATIVES

There are great things happening in the realm of urban planning, but more work is needed to support neighborhood based planning in the region. As previously mentioned, local planning staff has been drastically reduced over the past five years, specifically in the area of Comprehensive Planning. The Office of Sustainability is well positioned to play a more active role in this area by assisting neighborhoods and communities with visioning exercises engaging residents, businesses, and other stakeholders. As the Office explores future programs and initiatives, planning will be one of the core areas in which the Office will play a role.

TRANSPORTATION

QUICK FACTS

Number of Public Electric Vehicle Charging Stations Installed in Shelby County Since 2011:
30 EV Charging Stations

Daily Vehicle Miles Traveled (VMT) for Shelby County in 2012:
24,159,256 Miles

Daily VMT Per Capita in 2012:
25.68 Miles Per Person

Miles of Bike Lanes in City of Memphis:
74 Miles

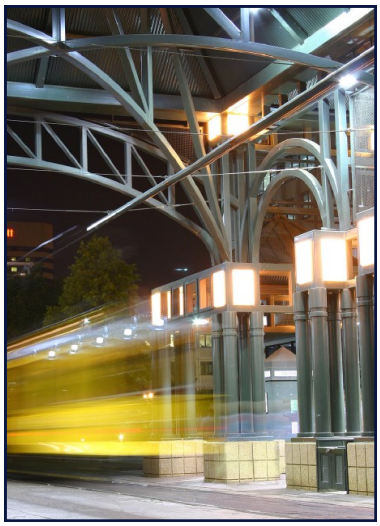
In 2012, MLGW opened 1st public **CNG fueling station** in the region

MATA has **retrofitted all buses** with bike racks, GPS, and automatic people counters

In 2013, the City of Memphis became the 500th city to adopt a **Complete Streets Policy**

Broad Avenue, Memphis, TN

A strong transportation system is an integral part of the economic vitality and long term sustainability of a region. Major components of an efficient transportation system in an urban area include access for alternative modes of transportation, reliable mass transit, minimal congestion, and connectivity. Each of these issues are priorities in Memphis and Shelby County, and there has been significant improvement since 2009. More specifically, there is growing emphasis on improving bicycle infrastructure and mass transit. These improvements are being made in order to reduce congestion, improve health outcomes, and reduce long-term costs for road maintenance, amongst other benefits.



COMPLETE STREETS POLICY

The most visible and apparent trend taking place in the local transportation sector is the growth in the awareness and implementation of alternative modes of transportation. For the past 60 years, Memphis and Shelby County was developed as an automobile-centric community. The roads were designed for the purpose of minimizing automobile congestion and moving people to their destinations as fast as possible. This paradigm is changing and the City of Memphis and Shelby County are working to build roads and facilities that can accommodate automobiles, pedestrians and cyclists in a more comprehensive manner.

The Complete Streets Policy is a framework that serves as a testament to the paradigm shift regarding how the transportation system is designed and developed. Under the Complete Streets Policy, streets are designed to "adequately accommodate all users of a corridor" which includes not just bicycles, buses, cars and freight, but also elderly pedestrians and those with disabilities among others. The policy was written specifically to encourage designers and engineers "to use an interdisciplinary approach to incorporate the needs of all users into the design and construction of roadway projects in the City of Memphis." The policy was adopted by City of Memphis Mayor A C Wharton, Jr. in the form of an Executive Order and Shelby County Government is committed to applying these concepts into the design of street projects in the urbanized areas served by the County. The Complete Street Policy framework was drafted by a diverse range of stakeholders, including Livable Memphis, City Engineer's Office, Urban Land Institute, Memphis Regional Design Center, Shelby County Engineering, City of Bartlett Engineering, University of Memphis PACE, Richie Smith Associates, MATA, Community Development Council of Greater Memphis, Memphis-Shelby County Office of Sustainability, and Memphis Area Association of Realtors.

INFRASTRUCTURE

There have been a number of infrastructure improvements made over the past five years throughout Shelby County intended to better facilitate cyclist and pedestrian traffic. Since 2009, over 72 miles of bike lanes have been installed in the City of Memphis, while 59 miles of shared use lanes and have been installed.

City of Memphis Bicycle Infrastructure
Total Miles Installed

Type	2009	2010	2011	2012	2013
Shared Use Path	15	22	25	26	31
Shared Lanes	56	56	65	70	115
Bike Lanes	2	8	31	48	74
Mtn Bike Trails	17	17	17	17	17

Source: City of Memphis Division of Engineering, September 2013

Much of the success on bicycle infrastructure in the City of Memphis can be attributed to the hiring of the first Bicycle/Pedestrian Coordinator, Kyle Wagenschutz in 2010. The notable improvement in this area resulted in Memphis moving from the Worst City for Cyclists in 2008 and 2010 to receiving an honorable mention for the Most Improved City for Cyclists in 2012, according to Bicycling Magazine.

The transportation sector is the largest contributor to air pollution in the region; therefore, there are a number of programs in place intended to reduce emissions and encourage fewer vehicles on the road. The Shelby County Health Department introduced the vRide Program, a van-pooling program for commuters in Shelby County. In addition, the Health Department and the City of Memphis Engineering Department, conducted a bike share feasibility study to estimate the potential cost of a full scale bike share program. The study found that a full scale bike share program would cost an estimated $2 million, so potential funding opportunities are currently being explored.

Finally, there is growth in the utilization of alternatively fueled vehicles in Shelby County. Since 2010, **30 electric vehicle (EV) charging stations** were placed throughout the county that are available for public use. In addition to the EV stations, there is also a growing trend towards utilizing Compressed Natural Gas (CNG). As of November 2013, CNG is roughly 50% of the cost of traditional gasoline on a cost per gallon basis. Memphis, Light, Gas & Water opened the first public CNG fueling station in the region in 2012, adjacent to its facility in North Memphis, and plans to open four more stations over the next few years.

Tesla Model S Electric Vehicle at the 2013 EV Plug-In Day at the Benjamin Hooks Library, 2013

Shelby Farms Greenline

The Shelby Farms Greenline is a 6.7 mile bicycle/pedestrian path that stretches from Binghampton to Shelby Farms Park. Opened in 2010, the Greenline is the result of the adaptive reuse of an abandoned railroad and a group of visionary citizens. Shelby County Government worked with the State of Tennessee to complete the project and Shelby Farms Park Conservancy currently manages the trail. The completion of the Greenline has spurred positive energy in the community and there are plans for extensions to the east towards Fayette County and to the west towards Overton Park and beyond to the Harahan Bridge and Arkansas.

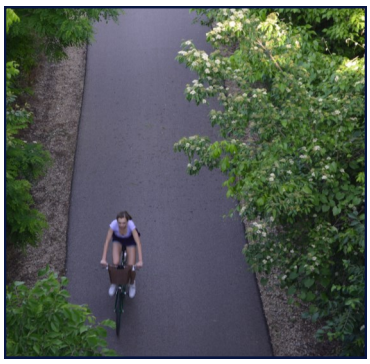
MASS TRANSIT

MATA Hybrid Bus

Memphis Area Transit Authority (MATA) has taken a number of steps to illustrate their commitment to making it easier for residents to utilize mass transit. MATA has equipped all of their buses with Automatic People Counters and GPS technology. The GPS technology will eventually make it possible for commuters to have real time information regarding the location of a bus through a mobile app. MATA has also installed bike racks on all fixed-route buses and bike racks at all passenger facilities. This makes it more convenient for cyclists to commute long distances without the necessity of a personal vehicle. MATA is also exploring opportunities for Bus Rapid Transit (BRT), or express buses, along some of the busiest corridors in the service area, such as Elvis Presley Boulevard and Poplar Avenue.

Because of the relatively low density of Memphis and Shelby County, it has been very difficult to maximize efficiency for MATA. This density issue is coupled with the challenges of poverty, limited operational budgets, and de-centralized business hubs throughout the region. In order to combat these realities, the Office of Sustainability is working with MATA and other stakeholders to develop comprehensive alternatives for maximizing service. This includes the exploration of alternative financing, transportation demand management programs, smaller shuttle services, BRT, and marketing strategies to eliminate negative stigmas associated to riders.

FUTURE OPPORTUNITIES



As oil prices continue to increase, it is likely that the shift towards a multi-modal community will continue into the future. As streets in our community are repaved and improved, the City and County engineers will be constantly looking for opportunities to connect bike/ped facilities and improve access for disabled persons. In addition, municipalities throughout the tri-state area are working together to develop a plan for an interconnected system of greenways, bike lanes, parks, and trails under the Mid-South Greenprint and Sustainability Plan. This will further cement efforts for a comprehensive system that will complement our existing auto-centric transportation system. New projects on the horizon, such as the Hampline and the Harahan Bike/Pedestrian Bridge, will be critical anchors for this system in the future.

ENERGY

QUICK FACTS

Annual energy consumption in Shelby County:
75 billion kBtu

Change in annual energy consumption from 2009:
16.45% decrease

Dollars saved as a result of energy efficiency programs in Shelby County since 2012:
$5.2 million saved

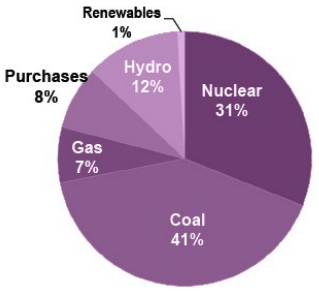
Mayors' Energy Challenge savings since 2012:
287 million kBtu saved

Number of solar installations in Shelby County:
62 solar arrays

Public electric vehicle charging stations in Shelby County:
30 EV charging stations

Amount of energy saved in Shelby County EcoBUILD homes annually:
1,398,679 kWh saved

TVA Energy Portfolio FY 2013



Source: Tennessee Valley Authority

Shelby County is the largest consumer of energy in the TVA service territory and is among the highest consumers of household electricity use in the nation. According to the 2012 MLGW Annual Report, total energy (electricity and natural gas) consumption in Shelby County was **75 billion kBtu**. Commercial energy consumption represents 43% of total energy consumed within the Shelby County borders, while residential consumption is 39% and industrial consumption is 10% (Source: MLGW's 2012 Annual Report). A number of programs around energy efficiency and renewable energy have been developed to help residents and businesses reduce the overall energy consumption in our community.

ENERGY EFFICIENCY

Over the past three years, there has been a **16.45% decrease** in total energy consumed within Shelby County by MLGW customers. This reduction represents 5% less electricity and 31% less natural gas use, attributed to the economic downturn as well as energy efficiency and conservation efforts. Energy efficiency in buildings is an excellent way to reduce costs for residents and businesses. The table below illustrates a number of programs offered by MLGW and TVA that have garnered over **$5.2 million** in energy savings for participants over the past two years. In addition to utility bill savings, participants have earned more than $5 million in program incentives for these improvements.

	2012			2013 (Jan thru Sept)		
Program	Units	KWH Saved	Savings[3]	Units	KWH Saved	Savings[3]
MLGW/TVA Self-Audit Tool	7,016	2,744,544	$ 247,009	3,126	1,120,236	$ 100,821
In-Home Evaluation Program	1,660	2,167,932	195,114	1,021	945,168	85,065
EcoBUILD Program[1]	89	393,932	35,454	19	84,098	7,569
Energy Right Solutions for Industry	24	10,903,718	981,335	15	4,390,167	395,115
Energy Right Solutions for Business	229	18,260,163	1,643,415	130	12,666,477	1,139,983
Weatherization Assistance Program[2]	1,989	4,116,065	370,446	-	-	-
Total	**11,007**	**38,586,354**	**$ 3,472,772**	**4,311**	**19,206,146**	**$ 1,728,553**

Source: Tennessee Valley Authority performance reports for Memphis Light, Gas & Water Division, October 2013

[1] Data obtained from Memphis Light, Gas & Water in October 2013

[2] No program data acquired for 2013

[3] Calculated based on rounded average cost of $0.09/kWh

In November 2012, City of Memphis Mayor A C Wharton, Jr. and Shelby County Mayor Mark H. Luttrell, Jr. launched the **Mayors' Energy Challenge** (Click HERE to view) in partnership with MLGW, TN Department of Environment and Conservation's Office of Energy Programs, Pathway Lending, and the Office of Sustainability. As a part of this challenge, local businesses and residents are being encouraged to explore energy efficiency incentives and other resources available to learn how to save energy and money. As part of this on-going challenge, Pathway Lending, a non-profit commercial lender, has made $10 million in low interest loans available to Shelby County businesses. The loans cover HVAC and lighting upgrades as well as other energy efficient measures. Since the Mayors' Energy Challenge began, Pathway Lending has financed projects that will save a total of **45 million kBtu** annually. These savings are the equivalent of powering 882 residential houses each year.

In 2009, Shelby County's Weatherization Assistance Program ramped up capacity as a result of stimulus funding and qualifying residents throughout Shelby County had weatherization measures performed in their homes. From October 2009 to May 2011 over **2,500 projects** were completed using more than **$13 million** in federal funding. The goal of this program was to increase the energy efficiency of homes in Shelby County so that residents could reduce the amount of their income that had to be paid toward their utility bills. The type of work that contractors performed included weather stripping doors and replacing windows, doors, HVAC systems, and duct work.

To further assist residents in multifamily developments, the City of Memphis Ordinance 5292 was passed in 2009 to provide for minimum energy efficiency in rental property. Renters can report insufficient energy efficiency and MLGW will inspect the property. In the first year, MLGW inspected more than **300 rental properties** and all landlords complied and brought their properties up to standards.

TVA Clean Energy Goal

Clean energy sources comprise 47% of TVA's power generation. These sources include renewable and nuclear power as they each have low or zero-carbon emitting resources. TVA's goal is for this number to be at least 50% by 2020.

Source: www.tva.gov

Shelby County Solar Projects

Year	Total Projects	Total kW
2006	2	60
2007	3	87
2008	3	87
2009	6	114
2010	13	264
2011	29	1,288
2012	47	3,416
2013	62	3,673

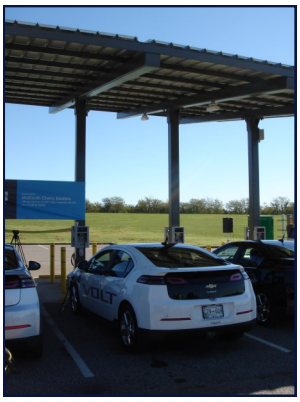
Source: Memphis Light, Gas & Water, Sept 2013

RENEWABLE ENERGY

With a desire to use more alternative energy, Memphis and Shelby County government as well as private entities have taken significant strides in increasing the number of solar installations in our community. The largest project to date is Agricenter International's solar array, a five acre, **998.4 kW solar farm** producing 1,600,000 kWh annually. The construction of this solar array brought green energy jobs to the region and supported local solar panel manufacturer SHARP.

Tabor Orthopedics, 6005 Primacy Parkway, 50kWh solar installation

ELECTRIC VEHICLE CHARGING INFRASTRUCTURE



In the fall of 2012, Shelby Farms Park Conservancy unveiled a covered parking area for a 10-car electric vehicle charging station outside of the Visitor's Center. Cars parked there are charged via solar panels instead of electricity from the grid, funded as a part of a federal electric vehicle initiative. In addition, 20 publicly accessible electric vehicle charging stations were installed in Shelby County at no cost to residents. TVA and MLGW coordinated the funding for all of these installations through federal grants. To find the location of a the EV charging station nearest you, view this map: www.blinknetwork.com/blinkMap.html.

Shelby County Public EV Charging Locations Installed Since April 2011

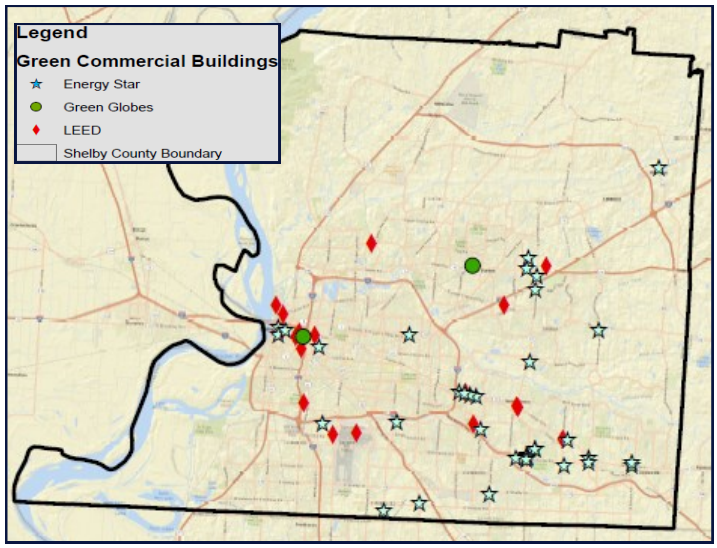
EV Charging Location	# of Stations
The Peabody Hotel	4
Gayoso Garage	2
Peabody Place Garage 2	2
Shoppers Garage	2
Memphis Bioworks	2
Arrow Cab Company	2
Ewing Kessler	2
Family Taekwondo Center	2
Sharp Manufacturing	2
Shelby Farms Park	10
Total	**30**

Source: Blink Network Map, October 4, 2013

GREEN BUILDINGS

In Shelby County, there are essentially three recognized standards being used to design energy efficient commercial and industrial buildings and one local standard for designing an energy efficient residential structure. The third party standards that are nationally accepted for commercial or industrial buildings are Energy Star, LEED, and Green Globes; and the local residential standard developed by MLGW is EcoBUILD.

Triad Centre, III, 6070 Poplar Ave. The first multiple-tenant LEED office property in Memphis.



There are currently **63 commercial** (21 LEED, 40 Energy Star, and 2 Green Globes) and **316 residential** (EcoBUILD) structures in Shelby County certified for a green design standard.

One additional green building standard that can be followed is the State of Tennessee Sustainable Design Guideline, designated for state funded buildings like universities. Although it is a county building, the Shelby County's Forensics Center was designed to meet State of Tennessee Sustainable Design Guidelines. No others in Shelby County have been completed as of 2013.

GREEN BUILDING TASK FORCE

A Green Building Task Force conducted an extensive review of the existing building, regulatory, and technical codes and made recommendations of revisions that would lead to Memphis and Shelby County becoming a leader for green buildings, sustainable development, and adaptive reuse of existing buildings. The Task Force, which met from 2011-2012, was comprised of architects, designers, builders, developers, construction managers, and other interested parties from the Shelby County area. The recommendations included:

- Adopt the 2009 Energy Code & commit to green building in new construction of government buildings.
- Expand the green measures in MLGW's EcoBUILD and establish a timeline to convert it from a voluntary program to a mandatory program for all new residential construction in Shelby County.
- Develop a voluntary green building program similar to EcoBUILD for new commercial construction.
- Develop education and outreach programs for government staff and building professionals to stimulate market demand.
- Establish electronic tracking tools to streamline and expedite the permit and planning application process.

Brother International Corporation

Brother International Corporation in Bartlett, one of the largest facilities in West Tennessee, achieved an Energy Star score of 94 in 2012 by taking significant steps in saving energy at their 1.6 million square foot distribution center. In 2012, Brother installed a High Efficiency Air Compressor to replace a inefficient unit installed in 1998. The new compressor consumes 171,000 less kWh per year due to the variable drive system. In conjunction, the design for cooling the building during the hot months, called for the use of three 850 ton chillers. The energy consumption for running all three was over 2,100,000 kWh. Through the process of changing set points, Brother only needs to run two of the three chillers, saving significant amounts of energy. Bartlett Chamber's Team Green Zone worked with Brother in this endeavor.

Memphis-Shelby County Code Enforcement adopted the 2009 Energy Code in 2012 as an upgrade from the previous 2003 version. Code Enforcement officials participated in two training seminars sponsored by the Office of Sustainability, in preparation for the implementation of the revised energy code. In these sessions, 48 employees were trained on the new building and energy code, as well as new technologies in green design that could be used.

In addition to the work by the Green Building Task Force, a report was presented to the Office of Sustainability called "Evaluating the Use of Green Building Incentives in Memphis, Tennessee." This thorough report presented information from interviews with local developers about effective incentives for sustainable design and analyzed case studies on comparable cities to determine what programs have been successful. The following excerpt highlights the recommendations that were developed to begin the process of designing an incentive-based green building program:

1. **Lead the Way with a Green Building Mandate for Publicly Owned Facilities**: Though not a direct incentive, a formal commitment made by the city and county to require that new facilities and major renovations meet a certain minimum energy efficiency and green design standard will help set an example for the private development community.
2. **Coordinate Green Building Incentives with Existing Incentive Programs and Initiatives**: The city and county should find ways to integrate green building incentives into existing incentive programs and ensure that new incentives fit in with the goals of these existing programs.
3. **Focus on Structural and Marketing Incentives First; Strive to Add Financial Incentives**: Structural and marketing incentives require less financial and administrative capacity and should help provide momentum to implement more complex and costly financial incentives later. The most attractive incentives that fit into the structural and marketing categories include: density bonuses, reduced minimum parking requirements, and publicity for green building projects through awards programs or publications.
4. **Ensure that Smaller Developers Have Avenues to Participate**: Special efforts should be made to ensure that smaller, lower-capacity developers are able to participate in a green building incentive program. Possibilities include: standards that do not require third party certification or incentives that focus on energy efficiency retrofits for existing buildings.
5. **Focus on Simplicity, Accessibility, and Usability**: These broad goals will not only make the incentives more useful to developers but will also make them easier to implement and administer. Strategies for achieving these goals include: integrating green building incentives into the existing regulatory and permitting framework to streamline the process for developers; continuing to involve developers in the design and implementation phases to get feedback and buy-in; considering working with developers to test the impact and usefulness of the incentives by working them through actual development deals.
6. **Complement with Ongoing Efforts Related to Green Building & Sustainable Development**: Green building incentives will be most effective when paired with planning efforts focused on creating more sustainable development patterns and encouraging economically robust and resilient neighborhoods. Regional coordination and collaboration are crucial to this process.

For more detailed information from this report, please visit the Sustainable Shelby website (**HERE**).

WASTE

QUICK FACTS

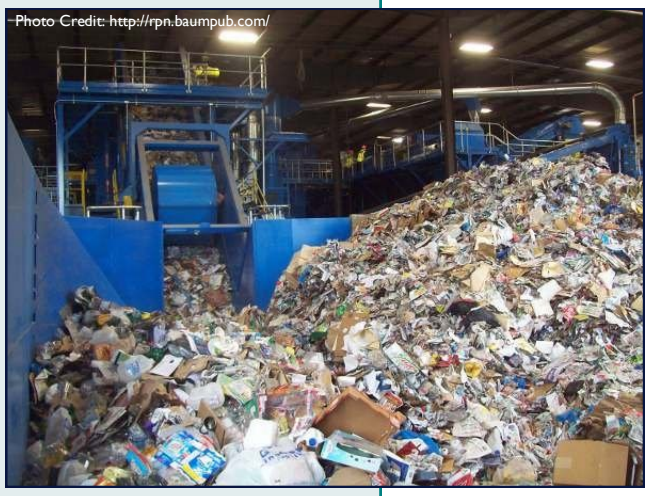
Annual average recycling of traditional materials in Shelby County for 2009-2012:
36 lbs/person

Annual average total waste diverted in Shelby County (traditional & misc recycling):
197,854 tons/year

Average diversion rate of City of Memphis:
29.36%

Shelby County Tire Recycling Center collects:
8,000 tons/year

Shelby County Sheriff's Office in Arlington takes unwanted prescriptions at a rate of:
100 lbs/month



ReCommunity Single Stream Recycling Facility

The State of Tennessee encourages each county to divert as much solid waste as possible by starting recycling programs for everything from traditional materials such as paper, plastic, and metal to old tires, electronics, and cooking oil.

University of Memphis Recycle Zone

The average recycling of traditional materials (paper, plastic, metal, and containerboard) from 2009 to 2012 for Shelby County residents was **36 lbs per person**. The average total tonnage collected by all government programs within Shelby for calendar years 2009-2012 was **197,854 tons** annually. The figure includes traditional recycling as well as mulch, tires, construction and demolition debris, and other miscellaneous.

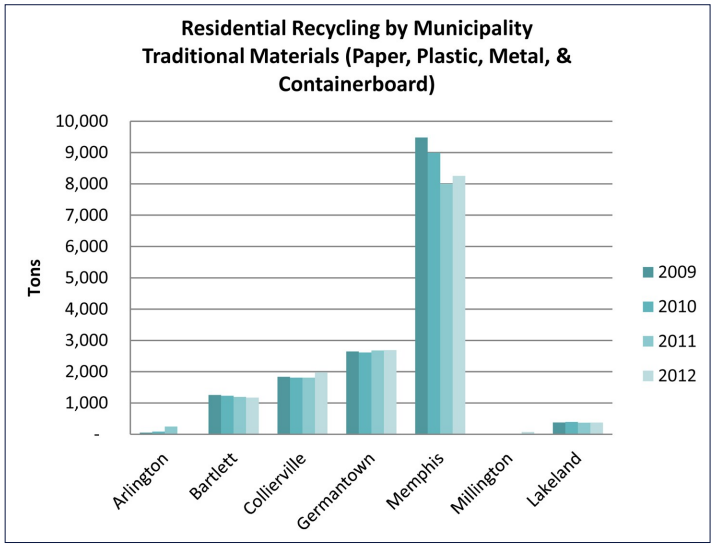
In Shelby County, municipalities determine the solid waste system that works within their community. The City of Memphis, with a population of approximately 646,800, is the largest municipality and recycles the greatest volume of material than other municipalities in Shelby County (pop. 927,640). Memphis residents of single family dwellings have curbside trash and recycling pickup available. Those without curbside services (such as those in apartments) have the ability to drop-off recyclable materials at five locations around the city. Over the past five fiscal years, the City of Memphis has recycled an average of 118,949 tons of traditional and yard waste material per year which is **29.36%** of total waste created by its residents.

Memphis now have two facilities that with automatic single-stream capabilities. ReCommunity has recently upgraded their system with the single-stream technology and it is the facility used by City of Memphis. RockTenn likewise built a new plant in Memphis with the single-stream technology.

City of Memphis is rolling out a single-stream program with a goal of moving residents from 18 gallon bins to 35 gallon carts in the near future. Now that ReCommunity has been retrofitted to an automated single-stream facility, the city can collect plastics 1-7, containerboard, metal, paper, milk and juice cartons, magazines, and other items.

Municipalities in Shelby County each run autonomous recycling programs. The municipalities of Arlington, Collierville, Germantown, and Lakeland offer curbside recycling services to single-family residents. Millington and Bartlett have drop-off centers for residents to use.

To compare the municipalities with each other, average pounds of traditional materials (metal, plastic, paper, and containerboard) recycled for years 2009-2012 was divided by the US Census Population of 2010.



Germantown residential collection exceeds the other municipalities in pound per person of recycled material. While it is difficult to draw inferences from this data since other factors should be measured such as consumption and total landfilled waste, Germantown's program is a model to study. For more than 20 years, Germantown has been collecting curbside for single-family residents and was one of the first to do so in the nation. Many years of educating constituents about how and what to recycle has paid off for them. In the fall of 2011, Germantown moved to single-stream collections and offered residents a 35 gallon cart on wheels. This was a popular move with 80% of the homes requesting carts. Roughly 60% of the Germantown households recycle each week.

Shelby County government operates a Household Hazardous Waste Facility at 6305 Haley Road near Shelby Farms (http://bit.ly/z99lpa) and Tire Recycling Center at 3000 Elvis Presley Blvd (http://bit.ly/172CdWs). The Shelby County Sheriff's Office and TDEC support an unwanted prescription drop-off site at 11670 Memphis-Arlington Rd in Arlington.

Average Municipal Recycling Rates From 2009-2012 (Pounds Per Capita)

Arlington	18
Bartlett	44
Collierville	85
Germantown	137
Memphis	27
Millington	5
Lakeland	61

Source: TDEC

ESTABLISHING RECYCLING DROP-OFF CENTERS

The City of Memphis collects recyclables from four drop-off locations to service those in apartments or condos. To add to the number of available locations, the Office of Sustainability established a pilot program in July of 2012 to increase recycling in the South Main area. Memphis City Gardens, a non-profit located at the Farmer's Market, conducted an online questionnaire of over 100 people and found overwhelming support to establish containers on a long term basis. The pilot project lasted a full year and averaged 2.18 tons per month. The Office of Sustainability discontinued the project in July 2013, and the South Main Neighborhood Association re-established the site in December 2013.

Recycling drop-off location at First Congregational Church, 2012

Beginning in the spring of 2013, the recycling drop-off location at First Congregational Church on S. Cooper St. transferred from being monitored and maintained by the City of Memphis (formerly their fifth drop-off location) to the non-profit Project Green Fork. This group is dedicated to recycling in local restaurants and has brought that same dedication to the community they serve. The Office of Sustainability provided new, larger bins for the location using grant funds which allowed for increased capacity. Project Green Fork, along with Get Green Recycleworks, makes the containers more visible and attractive by maintaining the aesthetics around the recycling drop-off location and they collect an average of 29.7 tons of recyclables per month. Project Green Fork repositioned the containers for maximum visibility and worked with the Urban Art Commission to decoratively paint the containers.

Waste Removal & Blight Mitigation in Action

For the past three years, the non-profit Living Lands and Waters from East Moline, Illinois has come to Memphis to clean up McKellar Lake. Over the course of three weeks each year, the team hosts about 90 college students for an "Alternative Spring Break." They come from around the country to assist in the clean-up effort during their vacation time. McKellar Lake captures debris that is discarded along I-385 and swept into the currents of Nonconnah Creek. To date they have removed 390,000 pounds of debris from the lake and most of it is recycled. The leader of Living Lands and Waters, Chad Pregracke, was awarded CNN's Hero of the Year in December 2013 and received $250,000 to put toward cleaning the Mississippi. Our community will see a direct benefit from this.

Chad Pregracke with Living Lands and Wasters and a volunteer in a boat on McKellar Lake, 2011.

Living Lands and Waters has the ability to reach areas accessible only by boat; they ferry volunteers to and from the shoreline and ultimately haul the debris onto their river barge for later removal. Over the years, they have seen a significant reduction in the trash on the lake, but efforts must be continued. To address a similar problem where the Wolf River empties into the Mississippi, the city installed a "trash rack" at the Bayou Gayoso Pumping Station. It is a floating rack that traps debris that comes out of the pumping station. This project was installed in the summer of 2011 and functions as intended.

Living Lands and Waters has inspired the formation of a local group of University of Memphis students called Memphis River Warriors. They have, to date, removed 50,000 pounds of debris from McKellar Lake. For more information on this group view their page here: http://on.fb.me/Hm5XIL.

Stacey Reed with 15,000 pairs of shoes for Soles4Souls, 2013.

One person can accomplish so much when a goal is in mind. Stacey Reed, a Memphis resident working as liaison for Soles4Souls, initiated a shoe drive and after a few years crossed the finish line in 2013 with 15,000 pairs of shoes. The 18 pallets of shoes she collected were spared from the landfill and shipped to those in need overseas.

Memphis City Beautiful Commission loans tools to groups holding neighborhood cleanups around the city and loans litter boxes to organizations holding special events. They also work closely with schools to teach recycling and liter prevention. In fiscal year 2013, 20,478 volunteers participated in clean-up projects through City Beautiful. The organization also maintains the litter hotline for reporting litterbugs (901-52-CLEAN or 901-522-5326). For more information please visit their site: http://www.memphiscitybeautiful.org. Another group called Clean Memphis organizes many clean-up events around the city.

ENVIRONMENTAL QUALITY

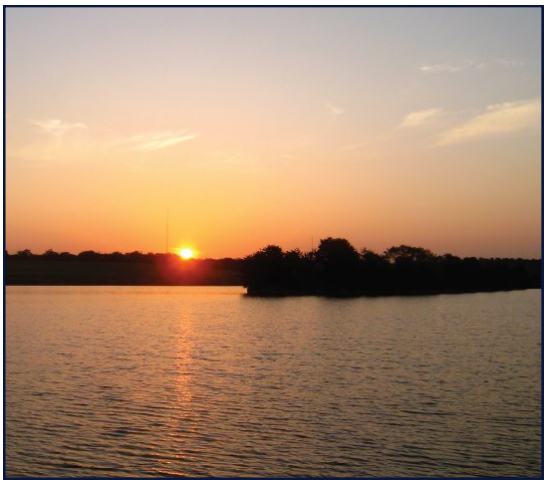
QUICK FACTS

Water supplied to Memphis comes from underground aquifers that have been filtered and recharged through sand over hundreds of years.

Air quality within three counties of the Memphis Metro Area are in nonattainment (Shelby, Crittenden, and northern DeSoto), but model predictions show that attainment will be possible again in a year or two.

Wetland Demonstration Site

In 2012, Shelby County Government's Storm Water Management Program turned a seven acre overgrown detention pond near Holmes and Riverdale into a wetland demonstration site. The project benefits the county in terms of avoiding costly levee and pipe repairs, and not having to conduct costly clean-up projects in the area due to illegal dumping. What was once unsightly is now home to an ecosystem of blooming plants, birds, and dragonflies which can be observed from the viewing platform. The wetland can receive up to 750 cfs (cubic feet per second) of stormwater runoff from the 408 acre watershed that drains into it. The water purified by the vegetation eventually flows into Nonconnah Creek and then to the Mississippi River.



Natural resources are precious and should be protected to the extent possible. Shelby County's water supply comes from below the surface of the earth in the natural sand aquifer. The sand filters out impurities of the water producing nearly perfect water. The air we breathe is another natural resource that should be protected. Although three counties within the Memphis Metropolitan Statistical Area (Shelby, Crittenden, and part of DeSoto) are in nonattainment, model predictions show that attainment will be possible again in a year or two.

WATER QUALITY

In a large rain event, rain hits impervious surfaces and washes away debris and pollutants into the storm drains. On roads the pollutants can range from motor oil to heavy metals from brake wear. Low Impact Development (LID)/Green Infrastructure is one way to address stormwater runoff in an environmentally sensitive way. It is in contrast to the traditional pipe system that has been in place for many decades where water is piped off-site and then treated in large detention or retention basins. LID techniques allow for the integration of stormwater management principles in a smaller scale and on-site. Examples of LID design are bioswales, greenroofs, cisterns, bioretention facilities, and porous pavement.

Roger Ekstrom, a native Memphian and graduate student at University of North Carolina, developed a draft report entitled the *Mid-South Regional Low Impact Development Locational Study*. The preliminary findings note that municipalities have to pay to pipe the water and to clean it and those costs can be lessened using LID practices and the natural filter of the earth. The higher elevations in Shelby County should be where LID practices are concentrated since it will receive the first flush of rainwater which carries the most contaminants. Treating the water at the source through LID before it flows downhill and into the river system is the most efficient solution. Installing LID practices will allow the water to naturally infiltrate into the earth and recharge the sand aquifer without causing the water to be piped into the Mississippi River. Further research on this topic using GIS will attempt to find strategic locations for LID technologies within Shelby County.

FUTURE INITIATIVES FOR WATER

The Mississippi River is a regional resource and the economic life blood of the Memphis area. The Mississippi River Cities & Towns Initiative consists of a group of mayors from cities along the Mississippi, led by Memphis Mayor A C Wharton, Jr. as co-chair. Among

other points, mayors will address the health of the river, specifically oxygen depletion caused by agricultural runoff. They will also address flooding mitigation during severe weather.

Through the Mid-South Regional Greenprint & Sustainability Plan, a public planning process has been initiated to develop a Regional Water Resources Plan to protect watersheds, develop policies, and identify water quality problems. The Resource Conservation working group with the Greenprint will provide guidelines for the protection of priority wetlands, aquifer recharge areas, wildlife corridors, and critical habitats for threatened and endangered species.

AIR QUALITY

The Ambient Air Monitoring Branch within Shelby County Health Department monitors air quality levels throughout Memphis and Shelby County. This branch develops, maintains and operates a regional air monitoring network of six NO2 station with 25 air monitors, and a data acquisition system used to store, retrieve, and report data. These stations measure pollution levels of Carbon Monoxide, Lead, Nitrogen Dioxide, Ozone, Particulate Matter and Sulfur Dioxide in ambient air.

Three counties within the Memphis MSA (Shelby, Crittenden, and part of DeSoto) are currently designated as nonattainment with the 2008 ozone standard, which means the area is not able to meet the ozone National Ambient Air Quality Standard (NAAQS). The Memphis area ozone averages have been steadily decreasing since 1990 with the exception of 2012 with its' hotter than normal summer. The national standards have continued to tighten over the past 15 years, which has caused the area to be in nonattainment. Modeling indicates within the next three years the area should be meeting the NAAQS for ozone again.

Dr. Ngee-Sing Chong, Middle Tennessee State University and Dr. Chunrong Jia, University of Memphis collaborating on the air toxics study.

The Shelby County Health Department, working with the University of Memphis and Middle Tennessee State University, received an EPA grant to study air toxics in Shelby County. A comprehensive air toxics study has never been conducted across Shelby County. This three-year study is measures ambient concentrations of air toxics in the Shelby County communities and assess the significance of seasons and industrial/urban/suburban environments on the air toxics concentrations. One hundred sites are currently being monitored and a 24-hour sample is collected quarterly each year.

LOW IMPACT DEVELOPMENT PROGRAMMING

Infiltration island at the Kroc Center.

Memphis-Shelby County Office of Sustainability received a $21,900 Green Development Grant from TN Department of Environment and Conservation (TDEC), Tennessee Stormwater Association, TVA, and TDOT. With this funding, the office will host a two-day workshop on Low Impact Development (LID), March 6-7, 2014. It will feature keynote speaker Stephen Luoni of the University of Arkansas who was instrumental in producing *Low Impact Development: a Design Manual for Urban Areas*. The workshop will be open to the public, but geared toward developers, designers, and municipal stormwater decision makers. Other keynote speakers include stormwater and engineered soils leaders Robert Adair and Barrett Kays, FASLA.

Government and non-profit partners are the City of Memphis Stormwater Program, Shelby County Engineering, Memphis Chapter of Urban Land Institute, Tennessee Chapter of the American Society of Landscape Architects (TNASLA), Tennessee American Planning Association (TAPA), and West Tennessee Branch-American Society of Civil Engineers (West TN ASCE).

Directly following the workshop, a LID design competition will be launched. These competitions have emerged recently as a grass-roots effort to challenge designers and developers to integrate LID into the landscape and have successfully changed the perception of LID as a stormwater management strategy. Design teams will consist of at least one engineer and one landscape architect, with a minimum of one being local. There will be one to three proposed sites to choose from for competition entry. Winning teams will receive monetary compensation between $10,000 and $15,000.

MEMPHIS-SHELBY COUNTY
Low Impact Development
Design Competition

AIR QUALITY IMPROVEMENTS WITH FLEET VEHICLES

The Air Quality Improvement Branch of the Pollution Control Section of the Shelby County Health Department worked with the Shelby County School system that had a goal of utilizing clean diesel technology in their entire fleet. With the retrofitting of 132 buses completed in late 2012, this goal was met. The technology of diesel particulate filters (DPF's) and closed-crankcase ventilators (CCV's) for the buses were chosen. As a result, these measures are estimated to have reduced particulate matter by 85-95%, hydrocarbons by 85-95%, and carbon monoxide by 50-90% per bus. This greatly reduced the carbon footprint of the school bus fleet that travels over 3,700,000 miles every year.

The innovative technology is EPA approved, commercially available by a number of producers, and practically reduces all particulate matter from the school buses. The CCV's eliminated emissions from coming into the cabin of the school bus and the CCV's in combination with the DPF's greatly reduced the children's exposure to diesel emissions upon boarding and embarking from the school bus. This act, coupled with a long-standing anti-idling policy for all bus drivers since 2004, resulted in a real improvement in quality of life for the students and air quality in general. This was an investment in the 24,000 children that ride the school buses everyday by providing continuous clean air while on the bus. The success of the project led the Air Quality Improvement Branch to retrofit 60 Memphis Area Transit Authority buses in 2013. Using grant and air quality penalty funds, the buses were fitted with DPF's and CCV's.

COMMUNITY HEALTH

QUICK FACTS

Farmland lost in Tennessee annually:
100,000 Acres

Number of community gardens established by GrowMemphis:
30 Gardens

Percentage of Shelby County Residents Living in Food Deserts:
16%

Roots Memphis Farm Academy

Roots Memphis Farm Academy was established in 2012 as a farmer training program to help grow the number of farmers in the area by teaching sustainable farming and business development. Graduates use currently vacant or underutilized land in Shelby County to cultivate fresh food for subsistence, income, and contribution to the local food system.

Shelby County faces a number of critical health issues, particularly in low income areas. Heart disease, stroke, obesity, diabetes, cancers, and infant mortality are just a few of the health outcomes of concern for the county. A number of related health indicators where Shelby County falls below average include healthy food access, air quality, and physical activity. In response to these growing concerns, a number of important initiatives and organizations have emerged over the last five years to address health issues.

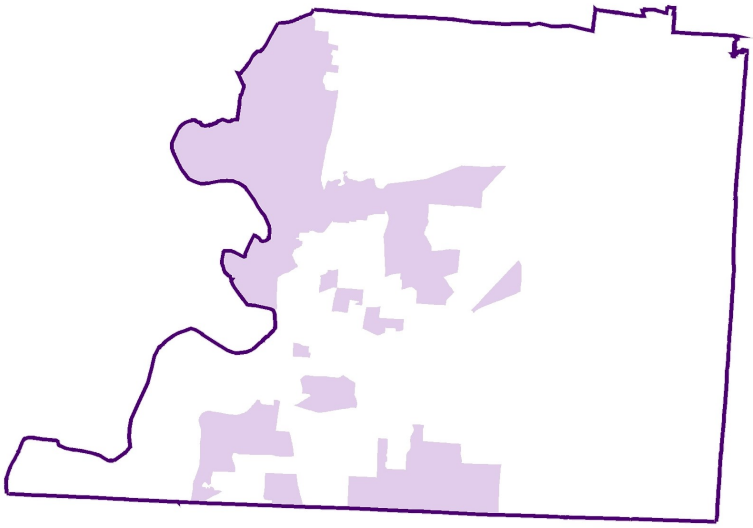
Shelby County Health Department is taking a lead role in addressing critical health issues in through ongoing initiatives and special projects such as the Mobilizing Action through Planning and Partnership (MAPP) process initiated in early 2013. The MAPP process is a community-wide planning process to improve community health by identifying and prioritizing community health issues, identifying resources to address issues, and taking action. MAPP has organized nearly 100 stakeholders in Shelby County to participate in a visioning and health assessment process.

In addition to efforts of the health department, the county is working to address community health through Healthy Shelby. This initiative is one of the five priorities of Memphis Fast Forward and operates as a program area of Healthy Memphis Common Table. Healthy Shelby is designed to focus on reducing the infant mortality rate in Shelby County, improving chronic disease management, and encouraging proactive end of life planning. The broader efforts of Healthy Memphis Common Table, organized in 2003, center around building collaborations to address community health, health equity, and health delivery systems through focusing on provision of primary care, obesity, diabetes, asthma, and food deserts.

The concern for access to healthy foods is shared among a number of organizations and agencies throughout Shelby County. In particular, GrowMemphis, created in 2007 as a program of the Mid-South Peace and Justice Center, trains new community gardeners to transform vacant parcels into sustainable community gardens. The organization currently works with about 30 community gardens. In 2010 GrowMemphis first convened a countywide working group to address food- related issues in Shelby County, leading to the development of the Food Advisory Council for Memphis and Shelby County.

In 2012, the Food Advisory Council published *Good Food For All: The Need for a Food Advisory Council for Memphis and Shelby County*, a white paper advocating for greater attention and action to improve food access and security in Shelby County. Among the findings of *Good Food For All* was that the county does not have a healthy food system. A Gallup Poll taken in 2010 concluded Memphis faced the greatest needs related to

hunger and food access. According to the Food Access Atlas developed by the U.S. Department of Agriculture (USDA), approximately 32% of Shelby County residents have low access to food, a measure determined by factors such as distance to a grocery stores, number of grocery stores in an area, and individual and community resources such as income or transportation access. Approximately 16% of Shelby County residents live in areas designated by USDA as food deserts, or areas with low access to fresh foods and generally low income.



Food deserts in Shelby County. Source: USDA

With the amount of farmland throughout the state of Tennessee declining at a rate of 100,000 acres per year, efforts such as those of GrowMemphis to promote local food systems is increasingly important not only for food security, but also positive economic impact to the county. GrowMemphis and the Food Advisory Council for Memphis and Shelby County have been instrumental in amending the Unified Development Code (UDC) to ease regulation on farmers markets, community gardens, and urban agricultural practices. The Food Advisory Council is currently working with the Shelby County Health Department to amend the Memphis Food Ordinance Handbook.

Over the last five years, Shelby County has seen a growth of organizations and markets advancing the local food system. In addition to the Memphis Farmers Market in downtown Memphis, established in 2006, farmers markets are available weekly in Whitehaven, South Memphis, the Church Health Center, Memphis Botanic Gardens, and Cooper-Young, as well as in suburban municipalities of Millington, Bartlett, Arlington, Germantown, and Collierville. Agricenter International operates a farmers market Monday through Saturday.

One of the most important recent improvements in promoting community health and sustaining the local food system is the emphasis on farm-to-school opportunities by Shelby County Schools. In 2011, Anthony Geraci was named director of the Central Nutrition Center of the former Memphis City Schools and began to immediately implement objectives of serving healthy meals in school cafeterias, improving student nutrition, providing agricultural opportunities at schools, expanding health and nutrition education, and supporting local and regional farmers. In addition to sourcing produce locally for healthier meals in schools, Shelby County Schools also operates a demonstration farm at Grahamwood Elementary School in Memphis.

Green Machine Mobile Food Market

Photo credit: University of Memphis

The University of Memphis and St. Patrick's Catholic Church created the Green Machine Mobile Food Market, a converted MATA bus that brings fresh produce to neighborhoods with limited food access. Routes began running in 2013 and generally cover areas around North Memphis, South Memphis, and as far east as Hickory Hill.

In addition to the emphasis placed on healthy eating, a number of organizations and initiatives focused on active living are helping to improve community health in Shelby County. More information about active living initiatives can be found in sections of this report related to transportation and the Mid-South Regional Greenprint and Sustainability Plan.

Bobby Lanier Farm Park
Germantown, TN

Mary Phillips teaching children about the cucumber trellis during the Bobby Lanier Farm Park Young Farmers Program.

The City of Germantown created the Bobby Lanier Farm Park as a model of agriculture and land stewardship in suburban Shelby County. The Farm Park includes a community garden, farmers market, programs for children, cooking demonstrations, garden talks, visiting farm animals, and garden tours.

Future initiatives for expanding efforts to address community health and the local food system include healthy corner store initiatives undertaken by the Food Advisory Council for Memphis and Shelby County and YMCA of Memphis and the Mid-South, diabetes prevention programming by the YMCA, and the development of a food hub by the Memphis Center for Food and Faith. Further, the Memphis and Shelby County Office of Sustainability has identified a critical need for completing a comprehensive regional food system assessment in order understand the assets and liabilities within each phase of the food system – including production, aggregation, distribution, consumption, and waste – in addition to evaluating the market demand for healthy food. Such an assessment could allow the County and region to make more informed decisions on priorities for improving the local food system in coming years and allow efforts such as community gardening, urban farming, food hubs, farmers markets, and farm-to-school to be more sustainable.

COMMUNITY ENGAGEMENT

QUICK FACTS

Number of partner organizations in the Mid-South Greenprint Consortium:
84 Organizations

Number of Project Green Fork Certified Restaurants as of October 2013:
56 Restaurants

Number of Shelby County Companies ranked in the Top 100 Southeastern Sustainable Companies:
7 Companies

Respondents to Mid-South Regional Greenprint Surveys:
1031 People

Office of Sustainability listserv participants:
888 People

Likes on Facebook as of January 2014:
519 Likes

Followers on Twitter as of January 2014:
692 Followers

Unique visitors to the Office of Sustainability website from April 2011 to January 2014:
12,104 Visitors

Page views on the Office of Sustainability website from April 2011 to January 2014:
48,716 Views

The Office of Sustainability has positioned itself as an advocate for sustainable practices both in the community and within government. The Office has generated an email distribution list of over **800 contacts** and established strong social media followings on Facebook and Twitter. These outlets allow the Office to spread the message around the benefits of sustainable practices to a broader audience. The Office also advocates for sustainable practices within the City of Memphis and Shelby County Government and serves as a liaison to community members looking to engage with local government. This helps organizations navigate the maze of government and connect them with the agency that can best help them and lead to a more efficient response.

The Office of Sustainability works to provide opportunities for engagement on sustainability issues on a regular basis. This is achieved through partnerships with the many organizations working on similar issues. The private sector in Shelby County is also embracing sustainability as a way of doing business. The list below highlights a few of the types of activities that have taken place around sustainability, either through the Office of Sustainability or within the private sector in general.

PRIVATE SECTOR SUSTAINABILITY ENGAGEMENT

The private sector has embraced sustainability throughout Shelby County. The evidence for this can be found in the growth of the number of companies that are ranked in the top 100 Southeastern Sustainable Companies. There were 7 companies ranked in the top 100 companies in 2013, and a host of other smaller firms that are currently submitting Global Sustainability Reports.

2013 Top 100 Southeast Sustainable Companies Located in Shelby County
Autozone
FedEx Corporation
First Horizon National
Fred's Inc.
International Paper
Mid-America Apartments
Mueller Industries
Wright Medical Group

Source: http://southeasterncorporatesustainabilityrankings.net/

There has also been a growth in the number of restaurants that have become certified by Project Green Fork (PGF) since it's formation in 2008. PGF contributes to a sustainable Mid-South by helping reduce environmental impacts, with a focus on strengthening homegrown restaurants. There is a six step process to which restaurants must adhere before they are eligible to receive PGF certification. These steps range from using environmentally friendly products and conducting energy audits to recycling and composting of waste. The number of PGF restaurants has grown from 17 in 2009 to 56 as of October 2013.

SUSTAINABILITY ADVISORY COMMITTEE

The Sustainability Advisory Committee was formed to focus, support, and assist the work of the Office of Sustainability. The members include participants from each municipality in Shelby County, grassroots leaders, sustainability experts, university researchers, and private citizens who reflect the diversity within our community. The primary responsibility of the Committee is to monitor the progress of the Sustainable Shelby Implementation Plan, provide advice and support in program implementation and policy setting for the Office of Sustainability, and to hold periodic public meetings.

MEMPHIS AND SHELBY COUNTY SUSTAINABILITY MONTH

Since 2012, April has been declared as Sustainability Month in Memphis and Shelby County by Mayors A C Wharton and Mark Luttrell. During this month, there is a concentrated effort to partner with organizations throughout the community to develop a comprehensive list of activities and programs intended to engage the broader public in sustainability. In April 2012 and April 2013, a series of weekly editorials were published in the Commercial Appeal highlighting various aspects of sustainability in the community. In 2012, the Office partnered with the EcoLaborate, the University of Memphis and Launch Memphis to host Ignite:Sustainability. During this 2.5 hour event, over 85 citizens and students viewed 20 five-minute presentations highlighting projects and initiatives from throughout the region. In 2013, the Office partnered with Memphis City Beautiful to coordinate the Green Up Day at City Hall, which served as an educational opportunity for employees in the Civic Plaza to learn about sustainable programs in the City of Memphis. These are just a few of the projects that have taken place in prior years.

North American Sustainability Directors Host Annual Conference in Memphis

In September 2013, the Urban Sustainability Director's Network (USDN) held their annual conference at AutoZone Park in Downtown Memphis. USDN is a national learning network for city leaders in sustainability positions across North America. Over 135 people representing cities all across the United States and Canada got an opportunity to exchange best practices and learn from the things/ initiatives happening in the Memphis region. In December 2012, the Memphis-Shelby County Office of Sustainability applied to have Memphis and Shelby County host the conference and since then worked in collaboration with USDN to coordinate the event after Memphis was selected in January 2013.

The conference included sessions on a wide variety of topics, ranging from rental housing energy efficiency, neighborhood planning, food system assessments, sustainability metrics, and a host of other issues. Participants enjoyed walking and bicycle tours of local landmarks and sustainable development projects, such as the Harahan Bridge, Beale Street Landing, Broad Street, Overton Park, Shelby Farms Greenline, Court Square, University of Memphis Law School, Sears Crosstown Building, Chisca Building, and more.

MAYORS' REGIONAL ROUNDTABLE CONVENING

On Thursday, July 11, 2013, City of Memphis Mayor A C Wharton and Shelby County Mayor Mark Luttrell invited mayors and government officials from across the region to the FedEx Forum to discuss various opportunities for regional collaboration. Roughly 13 mayors and over 25 government officials from throughout the metro area attended the two-hour event, which covered topics ranging from economic development, the Memphis International Airport, and expanding green assets throughout the region.

MEMPHIS AND SHELBY COUNTY SUSTAINABILITY SUMMIT

The Tennessee Energy Education Initiative, TN Department of Environment and Conservation's Office of Energy Programs, Pathway Lending, and Memphis-Shelby County Office of Sustainability, presented the free Sustainability Summit at the

Memphis Botanic Garden on June 26- 27, 2013. The two day conference focused on energy efficiency in healthcare, education, and multi-family housing and had over 200 people in attendance.

MAYOR'S ENERGY CHALLENGE

In November 212, the Mayor's Energy Challenge was coordinated in partnership with Pathway Lending, TVA, the State of Tennessee, and MLGW, to simplify the process of accessing the tools and resources needed for individuals and businesses to implement energy projects. As a part of this initiative, $10 million in loan funds has been made available to Shelby County businesses for energy improvements. Other resources that can be used to take on energy projects are outlined on the project website at: http://www.sustainableshelby.com/energy.

MEMPHIS AND SHELBY COUNTY BUSINESS ENERGY EFFICIENCY ROUNDTABLE

November 2011, the Office partnered with Pathway Lending and Pew Charitable Trust to host a roundtable discussion on the benefits of energy efficiency in the business community. The discussion focused on breaking down the real and perceived barriers to making energy efficiency upgrades at their facilities. The meeting included representation from City of Memphis Mayor A C Wharton, Shelby County Mayor Mark Luttrell, FedEx, Smith & Nephew, Methodist LeBonheur Healthcare System, Buckeye Technology, International Paper, MLGW, and TVA, amongst others. The Mayor's Energy Challenge was a product of these discussions.

FUTURE COMMUNITY ENGAGEMENT

In the future, the Office will continue to play a pivotal role in the area of advocacy and engagement. In order to maximize the value of the Office, there will be an increased focus on the identification and tracking of sustainability indicators to more accurately report progress in the respective areas. There will be more emphasis on identifying specific targets in areas that can be used to further engage the community in goal setting and attainment. The Office will continue to be a resource on sustainability matters and promote the initiatives that move toward that end.

STAR Communities Program

The Office of Sustainability has received grant support to participate in the STAR Communities Program, a certification program for community sustainability. STAR Communities is a rating system that was developed in 2011 by roughly 400 leaders in sustainability from across the country. The program helps communities establish goals and targets on various sustainability indicators and communities eventually receive certification upon achieving certain thresholds. This tool will be used to assist the Office identify metrics, establish firm targets, and report progress to the public annually for Memphis and Shelby County. For more information on STAR, please visit https://www.starcommunities.org/.

STAR COMMUNITIES | Sustainability Tools for Assessing & Rating Communities

APPENDIX

Green shading represents strategies that have been completed, are in-progress, or on-going. Original language for each item has been amended for the sake of brevity. For full text please view original pdf: http://www.sustainableshelby.com/implementation-plan

No.	Summary Sentence	Status	Comments
Great Neighborhoods for a Great Community			
2.1.1	Declare Memphis and Shelby County as a "Community of Great Neighborhoods" through a joint executive order.	Not Complete	This strategy has not been addressed to date.
2.1.2	Establish a "Great Neighborhood Score" to set the standard of high-performing, successful neighborhoods and by which to evaluate all proposals and applications to the Division of Planning and Development.	Not Complete	This strategy has not been addressed to date.
2.1.3	Revise the current fiscal impact model (anticipated tax revenue vs. cost of additional services) for development to ensure that it more closely reflects the actual costs of new development as a part of the Great Neighborhood Score.	Not Complete	This strategy has not been addressed to date.
2.1.4	Reorganize the DPD around Neighborhood Planners who are experts of specific geographic regions.	Not Complete	The Department of Planning was cut in half during the economic recession in 2009, so this strategy has not been addressed to date.
2.1.5	Neighborhood Planners in the DPD will work with the neighbors to create a character guidebook.	Not Complete	The Department of Planning was cut in half during the economic recession in 2009, so this strategy has not been addressed to date.
2.1.6	Apply to the League of American Bicyclists to become a "Bicycle Friendly Community".	Complete	Memphis Metropolitan Planning Organization applied for this designation and received an honorable mention in 2011. In addition, Memphis City Hall received a bronze in the category for a bicycle friendly business. http://www.commercialappeal.com/news/2011/sep/15/memphis-pedaling-into-bike-honor-roll/
2.1.7	Support community gardening programs and create an Urban Garden and Organic Farming Initiative, offering training in urban farming and help transform vacant urban parcels into community gardens.	Complete	GrowMemphis' primary work is aimed at training new community gardeners to transform vacant parcels into sustainable community gardens. Currently they work with about 30 community gardens. Recently they collaborated to design an Urban Agriculture Entrepreneur Program to help create business plans for those more interested in larger scale, for-profit urban farming. (http://growmemphis.org/) Roots Memphis Farm Academy is a farmer incubator program that will create new farmers by combining sustainable agricultural education and business plan development with an incubation process that connects graduates to land, financing, and markets. Graduates of the Farm Academy will utilize currently vacant land to produce food in the urban core, providing themselves and their families with much-needed income. (http://www.rootsmemphis.org/)
2.1.8	Establish three demonstration neighborhoods where targeted policies, incentives, and public and private partnerships will be applied to develop a model sustainable neighborhood.	Complete	Three demonstration neighborhoods were designated by Community LIFT as Binghampton, Frayser, and Upper South Memphis. LIFT works in these neighborhoods to target investments in community building projects. (http://www.communitylift.org)
2.1.9	Assist developers to reach their pledge for the Fairgrounds to be a "green" project and for the redevelopment to demonstrate sustainable urbanism principles in action.	Not Complete	Plans for redevelopment of the Fairgrounds are being studied at this time.
2.1.10	Create a "Neighborhood Clean-up Drive" program where a neighborhood has access to resources and equipment to remove debris, trash, and abandoned cars.	Complete	Memphis City Beautiful assists neighborhoods in their clean-up efforts, contact them through their website. (http://memphiscitybeautiful.org/) Read recent news about their efforts along with the City of Memphis' 25-square blight pilot project: (http://www.commercialappeal.com/news/2012/may/09/sharing-the-load/)
2.1.11	Create shared design guidelines and establish a design review processes for the redevelopment of government owned properties in order to preserve neighborhood integrity and strengthen community character.	Complete	Design guidelines for surplus properties have not been developed; however, the redevelopment of these parcels must adhere with the principles set forth in the Unified Development Code. (http://www.shelbycountytn.gov/DocumentCenter/Home/View/5049).
2.2.1	Develop a Comprehensive Plan for the City of Memphis, unincorporated Shelby County, and other municipalities based upon the principles of Sustainable Urbanism.	Not Complete	The Department of Planning was cut in half during the economic recession in 2009, so this strategy has not been addressed to date. The Mid-South Regional Greenprint is a regional comprehensive plan focused on green infrastructure that is being coordinated by the Office of Sustainability. This project is a first step towards the completion of a comprehensive plan.

No.	Summary Sentence	Status	Comments
2.2.2	The Environmental Resource Protection component to the Comprehensive Plan will inventory and provide guidelines for the protection of priority wetlands, aquifer recharge areas, wildlife corridors, and critical habitats for threatened and endangered species.	In-progress	The Memphis-Shelby County Office of Sustainability's Mid-South Regional Greenprint and Sustainability Plan furthers this goal (http://www.midsouthgreenprint.org/)
2.2.3	The Comprehensive Plan will map the location of existing and future neighborhoods, employment centers and business districts with transit-ready density levels in conjunction with the adopted Long-Range Transportation Plan and Regional Transit Master Plan. Amend the UDC to include tools to ensure that plans are reviewed for conformance with the requirements for transit-ready neighborhood developments.	Not Complete	The Memphis-Shelby County Office of Sustainability's Mid-South Regional Greenprint and Sustainability Plan furthers this goal (http://www.midsouthgreenprint.org/). However, no amendments have been made to the UDC for this goal.
2.2.4	The Parks and Open Space and the Transportation sections of the Comprehensive Plan should connect parks and open spaces with a cohesive bicycle and pedestrian network while preserving wildlife corridors and ecosystems.	In-progress	The Memphis-Shelby County Office of Sustainability's Mid-South Regional Greenprint and Sustainability Plan furthers this goal (http://www.midsouthgreenprint.org/).
2.2.5	Within the Comprehensive Plan, neighborhood plans will be created with specific attention given to protecting and enhancing the character of established neighborhoods including the desired density.	Not Complete	The Office of Sustainability plans to work on methods for establishing more neighborhood scale plans, within the constraints of the existing budget climate.
2.2.6	Prepare a major road plan in conjunction with the Comprehensive Plan to include existing and future collector streets, major road alignments, and right-of-way requirements.	Not Complete	When a Comprehensive Plan is eventually commenced, this will be a part of the process.
2.2.7	Suspend the acceptance of applications for new residential developments smaller than four-acre lots within unincorporated Shelby County while the Comprehensive Plan is being prepared and future policies should discourage leap frog development and encourage infill.	Not Complete	This strategy has not been addressed to date.
2.2.8	The LUCB should consist of chairmen of city and county legislative bodies' planning and zoning committees as ex-officio members; two architects, two developers, two civil engineers, two representatives from either a neighborhood or community advocacy group (or a combination thereof), and two professional planners with two of the board members LEED Accredited Professionals.	In-progress	The Land Use Control Board is made up of a diverse range of industry professionals. http://shelbycountytn.gov/index.aspx?nid=140
2.2.9	Ordinance No. 2524 should be amended to charge the LUCB with the responsibility of preparing, adopting, and implementing a Comprehensive Plan and be required to use the adopted plans as the basis for its decisions.	Not Complete	This strategy has not been addressed to date.
2.2.10	LUCB members should obtain a minimum of 12 hours of annual training to remain members of the body.	Complete	LUCB members currently undergo annual training as well as ethics training.
2.2.11	DPD will advocate strongly for its recommendations and adopted plans.	Complete	The Department of Planning references adopted plans in the LUCB and BOA staff reports.
2.2.12	Prepare and direct a yearly "Training and Professional Development Plan" for planners in DPD to identify gaps in skills and knowledge for each department, taking into account emerging trends and best practices.	Not Complete	Due to budget constraints, this strategy has not been adopted.
2.2.13	The planning functions of the DPD and HCD should be collaborative as they address neighborhood redevelopment and planning projects, and the divisions should consider new structural approaches that address duplicate functions.	Not Complete	There is on-going collaboration between Department of Planning and Development and Housing and Community Development, however no structural approach has been developed for long term collaboration.
2.2.14	Greater requirements for public input should be required by DPD like electronic notices, more effective sign posting, and public board meetings streamed online.	Complete	Electronic notices are provided on zoning cases and board meetings are streamed online. Archived footage can be reviewed here: http://www.cityofmemphis.org/Government/CityCouncil/ArchivesofMeetings.aspx
2.2.15	Increase public participation requirements for documents such as the comprehensive plan, neighborhood plans, annexation studies and other special interest plans and projects.	Not Complete	Public participation has been a hallmark of the Mid-South Regional Greenprint planning process and other planning initiatives driven by the MPO and the Aerotropolis Master Plan process. This will continue to be a pivotal part of work in DPD.
2.2.16	Create a quarterly reporting system, similar to the previously produced Urban Development Report, to track development patterns.	Not Complete	This strategy has not been addressed to date.

No.	Summary Sentence	Status	Comments
2.2.17	Allow private development LEED Neighborhood Development Certified Projects to be fast-tracked through the entitlement and permit process.	Not Complete	This strategy has not been addressed to date. Support for this approach was echoed in the work of the Green Building Task Force. The Office of Sustainability will explore how to implement this goal.
2.2.18	Ordinances for "Sustainability Development Zones" where special bonuses are given for compact, mixed-use, transit-oriented, and energy-efficient development should be passed.	Complete	This has essentially been achieved through the approval of the overlay districts.
2.2.19	After the Comprehensive Plan and comprehensive rezoning, the UDC should be amended to require that planned developments be approved by ordinance.	Not Complete	This strategy has not been pursued due to process concerns, as this would require three readings rather than one. This would lengthen the approval process and make development more difficult.
2.2.20	The UDC should include additional use standards for certain hazardous waste industrial uses including radioactive materials.	Complete	See section 2.6.4B of the Unified Development Code for Industrial Use Standards of Radioactive Materials/Waste (http://www.shelbycountytn.gov/DocumentCenter/Home/View/5049).
2.2.21	The UDC should require new local street lanes to be no wider than the measurement that corresponds to the desired automobile speed needed.	Complete	See section 5.2.7C of the Unified Development Code on Major and Minor Connector Street widths (http://www.shelbycountytn.gov/DocumentCenter/Home/View/5049).
2.2.22	Study existing streets to determine those that have characteristics encouraging excessive traffic speeds and initiate plans for reducing lane number or widths or provide other traffic calming devices on those streets.	Complete	Long Range Transportation Plan 2040 has a complete streets policy (page 5-41) to give the region ideas on how to do this, it is not mandatory. If a particular road can encourage strategies they get more points in the 2014-2017 TIP (http://www.memphismpo.org/sites/default/files/public/documents/lrtp-2040/chapter-05-transportation-strategies-final.pdf).
2.2.23	The UDC should implement reduced parking requirements and provide maximum allowances based on the current best planning practices.	Complete	See table in 4.5.3E of the Unified Development Code for a list of parking reductions that can be applied (http://www.shelbycountytn.gov/DocumentCenter/Home/View/5049).
2.2.24	The UDC should permit angular on-street parking in pedestrian-oriented neighborhoods where appropriate and should limit surface parking lots in urban areas by encouraging the redevelopment of buildings on existing surface parking lots and require building facades to meet the street edge (2.2.24).	Not Complete	The promotion of placing parking behind buildings is in the Unified Development Code, angled on-street parking is not in the UDC since it is not a zoning issue.
2.2.25	Form a Green Building Task Force made up of real estate professionals to examine the existing building code and make recommendations on how it could become more green.	Complete	In September 2011, the Green Building Task Force was convened and met on a monthly basis. Read the recommendations in the report here (http://www.sustainableshelby.com/sites/default/files/Green%20Building%20Task%20Force%20Final%206-12-12.pdf).
2.2.26	All technical building code committees and appeals boards should have at least two LEED Accredited Professionals.	Not Complete	There is no requirement for LEED professionals on technical committees, however the boards seats are occupied by industry professionals.
2.3.1	CIPs' should be reviewed for consistency with the adopted Comprehensive Plan and DPD should prepare a written Conformance Evaluation for each proposed CIP investment.	Not Complete	Since there is not an updated Comprehensive Plan in place, this strategy has not been addressed.
2.3.2	Provide a Sustainability Impact Statement for each proposed project in the CIP and for key pieces of legislation and policy decisions; the statement would be a key factor in the evaluation process.	Not Complete	This strategy has not been addressed to date, but Memphis-Shelby County Office of Sustainability will look into this in 2014 as a part of participation in the STAR Communities Program (http://www.starcommunities.org/).
2.3.3	Urban art projects whose funding is guaranteed by CIP funding should be expanded to include Shelby County Government, Memphis City Schools, and Shelby County Schools in earmarking 1% of all CIP projects. Local Urban Art CIP programs should be amended to allow funding to be spent in alignment with an Urban Arts Plan so that funds are not limited to a site-specific project.	Not Complete	This strategy has not been addressed to date.
2.4.1	DPD will work with HCD and their existing neighborhood-level commercial revitalization initiatives to support locally-owned small businesses to address financing needed for building upgrades and façade improvements, improving access to low interest loans and grant opportunities and providing business management counseling.	On-going	On-going.
2.4.2	A proactive Environmental Team (E-team) should partner with neighborhoods to aggressively use the Tennessee Nuisance Law and the Neighborhood Preservation Act to address problem properties.	On-going	The E-Team, made up of various groups working in environmental remediation, meets on a periodic basis and works to use various strategies to combat blight and abandonment.

No.	Summary Sentence	Status	Comments
2.4.3	Amend ordinances to add a maintenance code that sets higher standards for privately and publicly-owned property including maintaining the original transparency of commercial building fronts and retaining appropriate front and rear external lighting regardless of occupancy.	Not Complete	This strategy has not been addressed to date.
2.4.4	Aggressively pursue large scale redevelopment opportunities using either the existing Shelby County Land Bank or a newly created joint Memphis-Shelby County Land Bank.	Complete	Shelby County Land Bank markets surplus city and county properties and now makes it easier for prospective buyers to select properties (http://www.shelbycountytn.gov/DocumentCenter/Home/View/5327).
2.4.5	The Land Bank Office should prepare a study of revenue gained from the outright sale of tax delinquent properties vs. if the property is freely gifted to county government to sell for use in a redevelopment project and returned to the tax rolls with a higher assessed value due to its revitalization.	Not Complete	This strategy has not been pursued, as it has the potential for abuse. This idea must be explored further.
2.4.6	A process should be created to streamline the transfer and sale of tax reverted and surplus property. Authority should be granted to Shelby County Government to receive unwanted property from owners who have unpaid taxes due; authority should be granted to allow county government the ability to gift property to 501(c)(3) groups for purposes other than single-family residential development.	Partially Complete	No process has been established for the County to receive unwanted property from taxpayers, but a process has been established to allow county properties to be gifted to nonprofits. In 2010, state legislation passed to allow a county to gift a property to non-profits by the 106th General Assembly (SB2810; HB3069; Public Chapter 1064). Since this law passed, Shelby County through their Land Bank has donated over 87 properties to non-profits for community use (http://legiscan.com/TN/text/SB2810/2009).
2.4.7	The Homebuyers Revolving Loan Program should be re-established and actively seek collaborative relationships with other relevant government, non-profit, housing, and real estate development agencies.	On-going	Homebuyers Revolving Loan Program has been on-going for many years, due to current economic conditions across the nation, it is not as robust as in the past.
2.4.8	Identify and study existing smaller urban lots to determine whether they may be re-zoned to the R3 (minimum lot size 2,500 square feet) district.	Not Complete	This strategy has not been addressed to date.
2.4.9	The DPD and HCD should work to establish an official Reinvestment Boundary and all public incentive programs should be limited to projects and areas within the official Reinvestment Boundary.	Not Complete	This strategy has not been addressed to date.
2.5.1	The Comprehensive Plan and all neighborhood plans should contain standards and principals for creating a better public realm.	Not Complete	This strategy has not been addressed to date.
2.5.2	Establish an in-house design studio for the creation of best practice planning documents in order to provide design support for plans created by Memphis and Shelby County Governments. The staff should partner with local educational institutions to provide design experience to students.	Complete	The Memphis Regional Design Center serves this purpose.
2.5.3	Create a countywide Streetscape Master Plan to identify the street types and their corresponding streetscape elements which could include raised crosswalks, curb extensions, street trees, on-street parking, bicycle lanes, medians, and street furniture.	In-progress	Street types and streetscape elements are included in MPO's Regional Bicycle and Pedestrian Plan, in addition a Complete Streets Design Guide is being created to address this topic (http://memphismpo.org/sites/default/files/public/documents/bike-ped-plan/regional-bicycle-and-pedestrian-plan-full.pdf).
2.5.4	A Downtown Tax Increment Financing (TIF) District should be created immediately to provide the Center City Commission with a dedicated funding source needed to fully implement the Downtown Streetscape Master Plan.	Not Complete	Not being pursued at this time, as this idea was rejected by the Memphis City Council several years ago.
2.5.5	The UDC should require all commercial property (including nonconformities) to install required landscaping improvements and achieve compliance with the existing sidewalk ordinance prior to the issuance of a Certificate of Occupancy Permit.	Complete	See section 4.6 of the Unified Development Code for Landscape & Screening requirements. Nonconformities, however, are protected from any and all new regulations of a zoning code (http://www.shelbycountytn.gov/DocumentCenter/Home/View/5049).
2.5.6	Encourage neighborhoods to use vacant government-owned lots to plant native vegetation and then transplant these to the corridors in their neighborhood. Educate the community about the importance of urban forestry and native vegetation.	In-progress	This is encouraged whenever possible. Memphis City Beautiful, Agricenter, STAX Museum, and other city departments cleaned up a vacant lot in Soulsville and planted sunflowers. (https://www.facebook.com/media/set/?set=a.682772811736480.1073741843.140007209346379&type=3).

No.	Summary Sentence	Status	Comments
2.5.7	Develop an urban forestry program, hire a full-time urban forester to audit the current system, develop a Tree Master Plan, and create an initiative to plant 5,000 street trees per year).	Not Complete	Working toward this goal, 200 Yoshino cherry trees were planted in downtown Memphis, 300 trees were planted in Overton Park, and Shelby Farms Park Conservancy's goal is to plant one million trees. (http://www.commercialappeal.com/news/2012/feb/05/mud-island-event-to-mark-planting-of-cherry/), (http://www.overtonpark.org/2012/12/18/400-new-plants-in-the-ground), & (https://shelbyfarms.sitewrench.com/onemilliontrees).
2.5.8	The Comprehensive Plan and City of Memphis Division of Park Services Facilities Master Plan should have a goal of providing a public park within a 10-minute walking distance of every neighborhood.	In-Progress	The Memphis-Shelby County Office of Sustainability's Mid-South Regional Greenprint and Sustainability Plan calls for this goal (http://www.midsouthgreenprint.org/).
2.5.9	Efficient public transportation should connect the community to our regional parks.	Complete	MATA service extends to nearly all regional parks within Shelby County. View schedules here: (http://www.matatransit.com/mapsandschedules/route-schedules/).
2.5.10	Use sustainability as a guiding principle for all improvements to Shelby Farms Park in order to set the standard for our community.	Complete	The conservation goals of the Shelby Farms Park Conservancy as outlined in the 2009-2013 business plan include: "The plan for conservation will ensure that the principles of environmental stewardship and green and open are applied to all projects and programs." "Sustainable practices will be developed and implemented in the areas of energy consumption, stormwater management and solid waste management / recycling." "The Master Plan sets a goal of planting one million trees."
2.5.11	Public space should include regularly scheduled activities and events to encourage usage by the general public and an information packet should be created to provide interested organizations and individuals with all the information needed to reserve public space for events.	Complete	Park space in Memphis and Shelby County is regularly used by the public. Schedules are posted online for Shelby Farms Park (http://www.shelbyfarmspark.org/calendar), Overton Park (http://www.overtonpark.org/upcoming-events), Memphis City Parks (http://www.cityofmemphis.org/Government/ParksNeighborhoods.aspx), the State Parks TO Fuller (http://tnstateparks.com/parks/about/t-o-fuller) & Meeman-Shelby (http://tnstateparks.com/parks/about/meeman-shelby), and municipal parks in Arlington (http://www.townofarlington.org/index.aspx?nid=25), Bartlett (http://www.cityofbartlett.org/index.aspx?NID=167), Collierville (http://www.colliervilleparks.org/), Germantown (http://www.germantown-tn.gov/index.aspx?page=236), Lakeland (http://tn-lakeland.civicplus.com/index.aspx?NID=123), and Millington (http://www.millingtontn.gov/index.aspx?NID=106).
2.6.1	Lobby the Tennessee Legislature to establish a dedicated funding source (such as a statewide gas tax) for better urban public transit and, until then, MATA should be funded by county government and all municipal governments on a sliding scale.	Not Complete	This strategy has not been implemented to date. Recent referendums for a local sales tax to fund public transportation failed.
2.6.2	Develop a Regional Transit Plan recommending strategies for creating a world-class public transit system throughout the greater Memphis region.	In-progress	As part of a larger regional planning effort with the Greenprint Plan, the Memphis and Shelby County Office of Sustainability is looking at how accessible our employment areas are to the population in the Bus Transit to Workplace study (http://www.midsouthgreenprint.org/transit/). The project will examine how the region's employment is distributed geographically and how well employment areas are served by transportation, including bus routes, bike lanes, and walking paths.
2.6.3	Encourage MATA to acquire and implement technology to measure service performance such as Automatic Vehicle Location (AVL) and Automatic People Counters (APC) Devices.	Complete	In 2012, MATA equipped buses with GPS and Automatic People Counters (http://www.memphisflyer.com/memphis/whats-the-mata/Content?oid=3079488).
2.6.4	Provide rapid bus service between residential areas and urban and suburban employment centers to serve as an intermediate step in the planning of a bus rapid transit system and future light rail.	Complete	MATA provides Bus Rapid Transit on their "Whitehaven Flyer" line running between Downtown and Whitehaven (http://www.memphisdailynews.com/news/2013/oct/25/rapid-return/).
2.6.5	Evaluate the existing trolley service and address barriers that prevent them from providing regular, reliable, and on-time trolley service, and work toward the goal of offering free service.	Not Complete	This strategy has not been addressed to date.
2.6.6	Sell discounted monthly transit passes to customers so that riders can realize greater financial benefits the more they use their pass.	Complete	MATA offers FastPass which is unlimited rides at a discounted rate. View the fee schedule here: (http://www.matatransit.com/FaresandPasses/Fastpasses/).

No.	Summary Sentence	Status	Comments
2.6.7	Offer free bus passes to private sector and government employees to encourage riding public transit.	Not Complete	This strategy has not been addressed to date.
2.6.8	Design, install, and maintain bike racks near all transit centers and include bike racks on all buses.	Complete	MATA has bike racks on all fixed-route buses & bike racks at all passenger facilities (http://www.commercialappeal.com/news/2010/may/21/cyclists-rack-up-on-bus-boon/) & (http://www.matatransit.com/ridersguide/bike-and-ride/).
2.6.9	The UDC should require all new development plans to comply with the Major Road Plan for road extensions and improvements, limiting the basis for waivers.	Complete	See section 1.9 of the Unified Development Code for plans that are considered in any decisions that are made, including MPO's Long Range Transportation Plan (formerly called Major Road Plan) (http://www.shelbycountytn.gov/DocumentCenter/Home/View/5049).
2.6.10	Incorporate a "connectivity analysis" into MPO's Long-Range Transportation Plan to identify locations where connectivity could be improved and prioritize CIP funding.	Complete	MPO's Long-Range Transportation Plan incorporates the connectivity analysis and one of the criteria for ranking projects in the CIP Budget Committee is if the project is included in an adopted plan (http://www.memphismpo.org/project/lrtp-2040).
2.6.11	Partner with intermodal rail yards, port operators, trucking companies, and neighborhood residents in high-freight volume areas to identify routes most in need of improvement and routes that need to be relocated.	Not Complete	Not being pursued at this time.
2.6.12	Incorporate improvements identified in the Memphis Regional Chamber's Infrastructure Study into the MPO's next Long-Range Transportation Plan.	Complete	The Chamber's study was included in the LRTP 2040 as part of the chapter on Existing Conditions Analysis (http://www.memphismpo.org/sites/default/files/public/documents/lrtp-2040/chapter-04-existing-conditions-and-needs-assessment0-final-red.pdf).
2.6.13	Organize business plan competitions to create local car-sharing and bicycle-sharing programs to test these ideas within Shelby County.	In-progress	Downtown Memphis Commission brought zip-car to Memphis which is a car-sharing program. Shelby County Health Department brought vRide to the area which is a van-pooling program and has conducted a bike share feasibility study. Since the bike share program would cost an estimated $2 million, funding solutions are being sought before continuing. (http://www.zipcar.com/memphis), (http://www.vride.com/), & (http://bikepedmemphis.files.wordpress.com/2013/02/memphis-bike-share-final-report_021913.pdf).
2.6.14	Hire or designate a Bicycle and Pedestrian Coordinator for the greater Memphis region to advance the potential of new bicycle initiatives, ensure that bicycle needs are integrated into plans and support the efforts of grassroots bicycle organizations .	Complete	Kyle Wagenschutz, the city's first Bicycle and Pedestrian Coordinator, was hired September 2010 by the City of Memphis and the Memphis Metropolitan Planning Organization. Read more about Kyle here (http://www.commercialappeal.com/news/2010/sep/07/e7bikeweb/) & (http://www.commercialappeal.com/news/2011/oct/06/off-the-clock-kyle-wagenschutz-hes-a-key-mover/).
2.6.15	Update the Bicycle and Pedestrian Plan to incorporate changes suggested in the 2030 Long Range Transportation Plan to identify bicycle lanes that can be easily striped, contain the latest design standards for bicycle and pedestrian facilities, and be consistent with local municipal plans.	Complete	The Regional Bicycle & Pedestrian Plan, adopted in 2011, includes recommendations for specific streets (pp.59-238) (http://memphismpo.org/sites/default/files/public/documents/bike-ped-plan/regional-bicycle-and-pedestrian-plan-full.pdf).
2.6.16	Promote an inter-jurisdictional dedicated funding source for bicycle and pedestrian improvements prioritized in the MPO's Bicycle and Pedestrian Plan in local CIPs and yearly operating budgets.	In-progress	Funds are set aside in MPO's Transportation Improvement Program (TIP) for bicycle and pedestrian type of projects, and higher points are awarded to projects if they are included in the Regional Bicycle & Pedestrian Plan (http://memphismpo.org/plans/improvement-program-tip/overview), (http://memphismpo.org/sites/default/files/public/documents/bike-ped-plan/regional-bicycle-and-pedestrian-plan-full.pdf).
2.6.17	The Ride Sharing Program should consider ways to encourage carpooling, car-sharing, and bicycle sharing through prepaid gas cards and an interactive website or service for linking potential carpoolers with a goal of retooling the current rideshare program.	Complete	Shelby County Health Department's Ride Sharing Program, called vRide, reduces pollution. For more information about sharing a ride visit: (http://www.vride.com/).

No.	Summary Sentence	Status	Comments
2.7.1	Review existing green building codes throughout the United States and recommend how Memphis and Shelby County can implement model green building codes and develop a "Green Points" program requiring all new construction to submit a LEED for New Construction checklist and earn a specified minimum number of points in order to receive a building permit.	Not Complete	This strategy has not been addressed to date.
2.7.2	Amend Building Codes to require that all commercial buildings and multi-family residential buildings of 10,000 SF or more achieve a minimum of LEED Certified or equivalent and require that all new construction achieve a minimum of LEED Certified or equivalent.	Not Complete	This strategy has not been addressed to date.
2.7.3	Adopt an energy code to encourage better performing buildings and educate the public beforehand.	Complete	Memphis-Shelby County Code Enforcement adopted the 2009 Energy Code in 2012 as an upgrade from the previous version (http://shelbycountytn.gov/index.aspx?NID=390).
2.7.4	Develop a public education and awareness campaign aimed at dispelling myths about the cost of green buildings and infrastructure.	Not Complete	Not being pursued at this time.
2.7.5	Require all land use applications with a site plan component to have a completed LEED for Neighborhood Development (LEED ND) scorecard as part of the application review process.	Not Complete	LEED ND aspects were incorporated into the subdivision requirements of the UDC. A scorecard is not a part of the application process though.
2.7.6	Survey local developers about what incentives would be most effective in creating more sustainable projects and study major metro areas to learn how they exceed their local standards for sustainable design.	Complete	Vivian Jaynes, a Memphis-native, completed this strategy as part of her master's project in City and Regional Planning at UNC-Chapel Hill. Read her recommendations and case studies here: (http://www.sustainableshelby.com/sites/default/files/Green%20Building%20Recommendations-Vivian%20Jaynes%206-19-12.pdf).
2.7.7	The UDC should include incentives, such as density bonuses, when green roofs are included in a development plan.	Not Complete	Incentives can be explored. Since density maximums are not included in the UDC, a density bonus would not necessarily an incentive.
Protecting and Improving Our Environment			
3.1.1	Provide free on-site home energy audits for residents of Shelby County with priority given to low and moderate income residents in conjunction with a public awareness campaign coordinated by the Office of Sustainability.	Complete	The Office of Sustainability coordinated the Mayors' Energy Challenge to promote public awareness around various opportunities for residential and commenercial energy efficiency. http://www.sustainableshelby.com/energy
3.1.2	Amend the City of Memphis code of ordinance to set minimum standards for energy efficiency for all rental property.	Complete	City of Memphis Ordinance 5292 was passed in 2009 to provide for minimum energy efficiency in rental property (http://www.memphistn.gov/Portals/0/pdf_forms/energy_efficiency_rental_properties_ordinance.pdf). Renters can report low energy efficiency standards at 901-322-5757. Read more about the program and a story of its effectiveness: (http://www.mlgw.com/news/news_oneyearordinace), (http://mlgw.blogspot.com/2013/07/mlgw-rental-ordinance-in-action.html).
3.1.3	Departments and divisions should be able to use grant funds to implement efficiency measures with savings being rolled back into the grant program.	In-progress	Energy efficiency improvements are taking place in City and County facilities. There are complications with regard to rolling savings back to a particular division since most buildings are occupied by multiple divisions. However, incentive structures are being explored.
3.1.4	Create a new ordinance to require an energy audit, using a rating system such as the Home Energy Rating System (HERS) Index, before new or existing homes are sold.	Not Complete	There is no requirement for an energy rating, however MLGW now has eScore, an optional program that ranks your house on a 1-10 scale on energy efficiency. Rebates are offered through this program as incentive for improvements (http://www.mlgw.com/escore).
3.1.5	Amend local demolition permits to require applicants to submit a recycling plan for proposed demolition of structures larger than 2,500 SF and require recycling of 25-50% of all demolition or construction waste for construction projects requiring a permit.	Complete	For buildings over 10,000 SF, applicants must recycle 25-50% of demolition or construction waste.
3.1.6	Conduct a comprehensive waste audit of public buildings to better understand the amount of resources used and thrown away and document the process.	Not Complete	This strategy has not been addressed to date.
3.1.7	Implement a recycling program and designate areas in government buildings where the public can bring recyclable materials.	Complete	Recycling containers for the public are placed in various locations around the city and county. View a list of drop-off locations near you (http://www.sustainableshelby.com/sites/default/files/recycling%20brochure.pdf).

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3.2.1	Join ICLEI's Carbon Disclosure Project in an effort to openly acknowledge the county's carbon footprint.	Complete	Office of Sustainability joined ICLEI in 2011, however membership was not renewed in 2012 after careful consideration regarding the cost of membership versus the value of participation.
3.2.2	Encourage Memphis Light, Gas, and Water Division (MLGW) to show customers the amount of carbon dioxide released through their use of resources.	Complete	By logging into My Account on MLGW's website and viewing the "live green/ reduce your footprint" link in the upper right, you can see your carbon footprint based on your usage (www.mlgw.com).
3.2.3	Perform an Environmental Quality Assessment to determine the baseline measurements and establish goals for the region.	Complete	The Office of Sustainability focused on the environmental assessment of City and County buildings, as the City and County have more control over carbon reductions in these facilities. Moving forward the Office is looking at tracking additional indicators such as gasoline use, miles of bike lanes, and amount of alternative energy installed.
3.2.4	Help municipalities and organizations apply for all applicable Congestion Mitigation and Air Quality Improvement Program (CMAQ) grants provided by the Tennessee Department of Transportation.	Complete	The Memphis Metropolitan Planning Organization (MPO) works with member jurisdictions and agencies to prepare proposals for the TDOT statewide CMAQ program, and the MPO is the agency which actually submits the proposals to TDOT (http://memphismpo.org/).
3.2.5	Initiate a public planning process to develop a Regional Water Resources Plan to protect watersheds, develop policies, and identify water quality problems.	Complete	The Memphis-Shelby County Office of Sustainability's Mid-South Regional Greenprint and Sustainability Plan furthers this goal (http://www.midsouthgreenprint.org/).
3.2.6	Form an inter-state coalition to oversee issues and factors that affect ground water quality and quantity.	In-progress	Memphis Mayor A C Wharton co-chairs the Mississippi River Cities and Towns Initiative which focuses on economic and environmental issues around the River. http://www.commercialappeal.com/news/2013/jun/29/wharton-picked-to-help-lead-mississippi-river/?print=1
3.2.7	The UDC should have an environmental protection zoning overlay to restrict inappropriate new development in environmentally sensitive areas.	Complete	This is done through the floodplain overlay in the UDC.
3.2.8	Establish relationships with local environmental justice offices to identify, communicate, and collaborate on environmental concerns that threaten neighborhoods.	On-going	This is on-going through the Office of Sustainability.
3.2.9	Create an environmental justice training program for public sector staff and other interested organizations.	Complete	All City and County employees receive Title IX training and organizations such as the local Sierra Club focus on environmental justice programs throughout the county (http://tennessee.sierraclub.org/chickasaw/).
3.2.10	Recruit organizations that will be partners for a Health Equity and Community Development program which would be an exemplary holistic, community-based approach to ensure all citizens have access to quality healthcare, preventative programs, and information about healthy lifestyles.	Complete	The Healthy Shelby Initiative, launched by Shelby County Mayor Mark Luttrell, Jr., focuses on better health, better care, and lower costs as strategies for improved community health and economic vitality (http://memphisfastforward.com/healthyshelby).
3.2.11	Greening Greater Memphis' proposal for a network of green assets should be adopted as a priority for our community.	Complete	The Memphis-Shelby County Office of Sustainability's Mid-South Regional Greenprint and Sustainability Plan furthers this goal (http://www.midsouthgreenprint.org/).
3.2.12	Enhance access to area rivers and lakes for recreational water activities in conformance with best practices for parks and open space.	In-progress	The Memphis-Shelby County Office of Sustainability's Mid-South Regional Greenprint and Sustainability Plan furthers this goal (http://www.midsouthgreenprint.org/).
Greening Our Economy			
4.1.1	Develop an agenda for the future that builds into existing and future economic development plans to create green jobs and grow a green sector in the regional economy.	Complete	The Brookings Institution Metropolitan Business Planning Initiative conducted by Memphis-Shelby County EDGE addresses these issues in their final report.
4.1.2	Increase local research capacity for green technologies and renewable energy by establishing a Cleantech Demonstration Center to create, test, and showcase products and The Green Business Incubator to create start up companies resulting from the research.	Not Complete	This strategy has not been addressed to date.
4.1.3	Establish a Sustainability Seed Fund to provide early stage capital for local green businesses, innovators, and participants in the Green Business Incubator (4.1.3).	Not Complete	This strategy has not been addressed to date.
4.1.4	Issue an RFP to create a local Green Technology Industrial Park as a public-private partnership for green businesses (esp those created through Green Business Incubator) to work together.	Not Complete	This strategy has not been addressed to date.
4.1.5	Workforce Investment Network (WIN) should provide funding and support for Green Job training programs through current workforce training programs and identify green job opportunities.	Not Complete	Memphis Bioworks Foundation offered free Environmental Job Training and Placement for select zip codes during the summers of 2012 and 2013. This is through an EPA grant (http://focus.commercialappeal.com/media/2393280)

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4.1.6	Partner with The Memphis Convention and Visitors Bureau to identify and bring to the area national Green Job and "Cleantech" events and conferences.	Not Complete	The Tennessee Valley Solar Solutions Conference was held at the Memphis Cook Convention Center April 10-11, 2012. *The Tennessee Renewable Energy & Economic Development Council (TREEDC) held their Conference in Memphis November 18, 2011.
4.2.1	Partner with regional business leaders to create a bi-annual sustainable business conference to inform local businesses of the broader sustainability movement and connect local green business ventures.	Complete	The first annual Memphis-Shelby County Sustainability Summit was held in partnership with the Office of Sustainability, TDEC's Energy Office, and Pathway Lending (a non-profit bank). There were more than 200 attendees present for the two-day conference. Read more here.
4.2.2	Require applications for entitlements or incentives to quantify the economic and environmental impacts/benefits of the proposed project.	Complete	This is included in the applicant's narrative when submitting a project.
4.2.3	Amend PILOT (Payment-in-lieu-of taxes) application processes to award additional points to projects that incorporate existing vacant or underutilized buildings and that achieve specific sustainability benchmarks such as "LEED for Existing Buildings".	Complete	Awardees are given additional time on their PILOTs if they practice specific "green" measures. See pages 12-14 of the program overview (http://www.shelbycountytn.gov/DocumentCenter/Home/View/1340).
4.2.4	Revise policies to require that any project receiving tax abatement through the PILOT program must achieve a minimum of LEED Bronze Certified or equivalent for all new construction over 50,000 SF.	Not Complete	Awardees are given additional time on their PILOTs if they practice specific "green" measures. See pages 12-14 of the program overview (http://www.shelbycountytn.gov/DocumentCenter/Home/View/1340).
4.2.5	Amend PILOT application processes to award additional points to projects that incorporate existing vacant or underutilized buildings in lieu of new construction and that achieve specific sustainability benchmarks such as LEED for Existing Buildings.	Complete	Awardees are given additional time on their PILOTs if they practice specific "green" measures. See pages 12-14 of the program overview (http://www.shelbycountytn.gov/DocumentCenter/Home/View/1340).
4.2.6	Aggressively pursue large scale redevelopment opportunities using either the existing Shelby County Land Bank or a newly created joint Memphis-Shelby County Land Bank.	Complete	Shelby County Land Bank will market surplus city and county properties which will now make it easier for prospective buyers (http://www.shelbycountytn.gov/DocumentCenter/Home/View/5327).
4.2.7	Develop an open, multiservice fiber network, publicly built and maintained but open to the private sector.	Not Complete	Through a grant, the South Memphis neighborhood of Soulsville will receive community-wide Wi-Fi infrastructure (http://bit.ly/LpEl1n). Look here for places in Memphis and Shelby County that have free Wi-Fi (http://www.ilovememphisblog.com/2012/12/free-wifi-memphis/). As part of the City of Memphis "Clean and Green" strategy, an open Wi-Fi network is being explored.
4.2.8	Work with the Shelby County Health Department to review and update their rules and regulations to remove any barriers that may be faced by local farmers in selling and offering of their goods and produce in local farmers markets.	In-progress	The Food Advisory Council for Memphis-Shelby County is coordinating this with the Shelby County Health Department (https://www.facebook.com/pages/Food-Advisory-Council-for-Memphis-and-Shelby-County/153732174665397).
Learning Green Lessons			
5.1.1	Update the Sustainable Shelby website to include educational materials and inform citizens of ongoing projects in the Office of Sustainability.	Complete	Visit website (http://www.sustainableshelby.com/), "like" on facebook (https://www.facebook.com/pages/Memphis-Shelby-County-Office-of-Sustainability/217893028232155), and "follow" on twitter (https://twitter.com/SustainShelby).
5.1.2	Raise awareness of sustainable practices by designating "Sustainability Month" and holding educational sessions for the public during that time.	Complete	Mayors Luttrell and Wharton declared April 2012 & April 2013 to be Sustainability Month. Read their 2012 editorial and 2013 editorial and view the 2012 calendar of events and 2013 calendar of events. (http://www.commercialappeal.com/news/2012/mar/31/guest-column-celebrating-sustainability-in-our/), (http://www.commercialappeal.com/news/2013/mar/29/guest-column-sustainability-as-a-part-of-the/), (http://www.sustainableshelby.com/event-calendar/2012-04), & (http://www.sustainableshelby.com/event-calendar/2013-04).
5.1.3	Organize a bi-annual Mid-South Sustainability Summit that hosts nationally recognized speakers and a forum where information can be exchanged.	Complete	The first annual Memphis-Shelby County Sustainability Summit was held in partnership with the Office of Sustainability, TDEC's Tennessee Energy Education Initiative, and Pathway Lending (a non-profit bank). There were more than 200 attendees present for the two-day conference (http://www.sustainableshelby.com/memphis-shelby-county-sustainability-summit-free), (http://www.sustainableshelby.com/sites/default/files/Summer%202013%20Sustainability%20Newsletter.pdf).

No.	Summary Sentence	Status	Comments
5.1.4	Begin a neighborhood outreach program, led by DPD's Neighborhood Planners, that would emphasize education and collaboration on the planning process with neighborhood associations and community based organizations.	Not Complete	The Department of Planning was cut in half during the economic recession and this is not feasible at this time.
5.1.5	Develop and offer sustainability educational programs and activities, particularly for children, at local libraries.	Complete	While these activities do not always take place in libraries, there are many non-profits hosting educational activities for children. For example: each year, Shelby Farms offers greenline gardening workshops and other youth activities (http://shelbyfarmspark.org/youthprograms), Memphis City Beautiful and Clean Memphis do programing in the schools, Wolf River Conservancy offers field trips and service projects (http://www.wolfriver.org/educationalprograms), and Bobby Lanier Farm Park offers an array of educational activities for children (http://www.germantown-tn.gov/index.aspx?page=1259).
5.1.6	Create a roadway safety education campaign to educate the public about how to act safely as pedestrians, bicyclists, or motorists.	On-going	A roadway safety campaign is being formed. Check out these tips on bicycle safety with an informative safety video & information on sharing lanes (http://www.youtube.com/watch?v=qtejslbYsjg)
5.1.7	Encourage financing options for energy efficiency improvements on new and existing buildings.	Complete	Through the Mayors' Energy Challenge, a public-private partnership was designed to provide the necessary tools and resources to motivate individuals in the community to make their homes and businesses more energy efficient. View more details on the website and video: http://www.sustainableshelby.com/energy and http://www.youtube.com/watch?v=HLT_0R4gKDQ
5.2.1	Include the concepts of sustainability into the current curriculum like an "eat what you grow" program.	Not Complete	Not being pursued at this time. The Shelby County Health Department is engaged in the work on healthy living and thus food deserts. They support the Green Machine and farmers' markets.
5.2.2	Create a sustainability-focused "Clean Up, Fix Up, Green Up" program that includes a check list for school children to take home and to do as part of a larger countywide clean-up program.	Not Complete	This strategy has not been addressed to date.
5.2.3	Design new school buildings to combine national best practices and LEED Certification to demonstrate the principles of green building and the importance of resource conservation.	Complete	When building new schools, the consolidated Shelby County School System uses many of the principles of green building in terms of lighting, occupancy sensors and mechanical equipment.
5.2.4	Perform periodic energy audits of existing buildings and conduct energy retrofits when necessary in the school systems.	Complete	The Energy Manager for the merged school system tracks energy use in all buildings and makes upgrades when feasible and when opportunities arise. Craigmont High School received a top award from EPA for their energy reductions (http://www.environmental-expert.com/news/craigmont-high-school-in-memphis-tenn-named-a-top-finisher-in-energy-star-national-building-competit-369293).
Leading by Example			
6.1.1	Form the Office of Sustainability.	Complete	The Office of Sustainability was formed in April of 2011 and is located in the Division of Planning and Development, a joint City-County agency.
6.1.2	Hire an experienced urbanist with a record of proven success for Office of Sustainability.	Complete	Paul A. Young was appointed April 2011 as Administrator of the Memphis and Shelby County Office of Sustainability, a joint City-County agency (http://www.commercialappeal.com/news/2011/jun/28/plan-with-purpose/).
6.1.3	Create a public advisory commission to serve as an information conduit from neighborhoods and green organizations to the Office of Sustainability.	Complete	The Sustainable Advisory Committee held its first meeting 9-21-2011.
6.1.4	Establish a center for sustainability "The Green Center" as the focus for all things sustainable in our community to house the Office of Sustainability, a business incubator, a venture fund for green businesses, a sustainability policy institute and office space for nonprofit green organizations.	Not Complete	This strategy has not been addressed to date.
6.1.5	Create and maintain an online directory of local green businesses.	Not Complete	This strategy has not been addressed to date.
6.1.6	Develop a "Sustainability Scorecard Program" for all departments and divisions within Shelby County Government that could become a model for other area governments and evaluate them on a yearly basis to determine the progress made toward sustainability goals.	Not Complete	This strategy has not been addressed to date.

No.	Summary Sentence	Status	Comments
6.2.1	Revise current City and County purchasing policies to consider the total cost over the life of the goods, services, and equipment.	Not Complete	This strategy has not been addressed to date.
6.2.2	Institute a "Green Purchasing Policy" that requires the purchase of environmentally preferable products within 10 percent of the lowest bid and submit to the public a detailed yearly purchasing report.	Not Complete	This strategy has not been addressed to date.
6.2.3	Create a task force to study how county government can leverage its buying power by coordinating with other local municipalities.	In-progress	The City and County leverage buying power on certain State contracts and commodoties such as fuel.
6.2.4	Inventory all vehicles in the city and county fleets and create a plan for gradual replacement of the existing fleet with vehicles that are alternatively fueled and energy efficient.	In-progress	This work is in-progress by Memphis Bioworks Foundation through a sub-planning award from the Mid-South Regional Greenprint Plan.
6.2.5	Develop a pilot program that allows a department to reserve a portion of the savings through energy and resource conservation for use within that department or division and prepare a "Responsible Consumption Plan" that documents its specific efforts to save energy and reduce consumption.	Not Complete	This strategy has not been addressed to date.
6.2.6	Create an outreach program with the goal of increasing education and awareness of the government contractor/vendor program and certification process including the establishment of a County's Bonding Assistance Program and Insurance Assistance Program for small business owners doing business with Shelby County.	Complete	Shelby County continues to do educational sessions and outreach on these issues.
6.2.7	Establish measurable goals for increasing opportunities for local, minority, and green businesses to provide goods and services.	Not Complete	The City of Memphis has a goal of 25% for local and minority businesses; while Shelby County has an LOSB goal of 20%. There are currently no measurements for green businesses.
6.3.1	Require that all new publicly owned buildings greater than 10,000 square feet achieve a minimum of LEED Silver Certification.	Not Complete	It is possible to have a green standard of building, but just not require the certification because it is cost prohibitive.
6.3.2	Conduct energy audits on publicly owned buildings and rate their efficiency.	Complete	With the assistance of funds from the Department of Energy grant, the Office of Sustainability conducted energy audits on two public buildings, Shelby Farms Visitor's Center and Memphis and Shelby County Code Enforcement. The City of Memphis is working with Memphis Bioworks Foundation and Siemens to coordinate future audits and improvements, while the Office of Sustainability is working with the Shelby County Division of Public Works to coordinate audits and improvements at County facilities.
6.3.3	Conduct a comprehensive review of existing assets and anticipated future needs for new public buildings for the next 25 years and develop a strategic method for selecting future project sites.	Complete	Shelby County Government has a database of public buildings and a policy to determine if those can be reused. The City of Memphis has not developed this inventory yet, but it is in the plans for the General Services Division.
6.3.4	Create a database of all existing public buildings, create a policy for determining if an existing building can be reused or expanded in lieu of new construction, look for vacant or underutilized privately-owned buildings to purchase in the vicinity of the proposed project, and consider the availability of existing underutilized or vacant buildings before any decision to undertake a new construction project is finalized.	Complete	Shelby County Government has a database of public buildings and a policy to determine if those can be reused. Every CIP project for renovation is required to compare the cost of reusing vs. new construction. One county building recently renovated is 157 Poplar Ave where the Trustee's Office and the Jury Pool are located. Read more about how renovating this building saved $5.3 million (http://www.wmctv.com/story/23481265/reusing-county-building-saves-millions-of-taxpayer-dollars).
6.3.5	Hold public meetings at the start of the schematic design phase for each new public building or capital project, investigate the potential negative impacts, and suggest possible mitigation strategies.	Not Complete	The building design presentation before the Shelby County Commission is public, but not during the design phase. For the City of Memphis, this is handled in-house by the City Engineer.
6.3.6	Create a set of design guidelines for new public buildings (through a public participation process) that addresses neighborhood impact, building height, massing, scale, lot coverage, use of materials, architectural character, landscaping requirements, parking requirements, exterior lighting, noise generation, signage, fencing, and other related concerns.	Complete	These topics are covered in various sections of the Unified Development Code (http://www.shelbycountytn.gov/DocumentCenter/Home/View/5049).
6.3.7	When significant upgrades or modifications to an existing publicly owned building are made, complete a "LEED for Existing Buildings" checklist to assess the feasibility of incorporating sustainable design into the project.	Not Complete	This strategy has not been addressed to date.

No.	Summary Sentence	Status	Comments
6.3.8	Identify at least three feasible future uses for new construction in an "Alternate Use Plan" and estimate the extent of changes that would be required and include an estimate from the Engineer specifying the expected useful life of the building.	Not Complete	This strategy has not been addressed to date.
6.3.9	Create an official policy encouraging the co-location of compatible uses within new and existing public buildings and schools whenever feasible.	Not Complete	While not an official policy, Shelby County considers co-location whenever feasible. Two examples are Shelby County Crime Victims Center, which is a hub of victim services, and Head Start facilities.
6.3.10	Key public departments should have at least one employee certified as a LEED Accredited Professional.	Not Complete	There is no policy in place to reflect this goal.