

# TOGETHER MAKING NASHVILLE GREEN



June 2009

REPORT TO THE HONORABLE KARL DEAN, MAYOR  
FROM THE GREEN RIBBON COMMITTEE  
ON ENVIRONMENTAL SUSTAINABILITY

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# The Mayor's Green Ribbon Committee on Environmental Sustainability

Alicia Batson, M.D.\* - Physician and Market Grower, Hungry Gnome Farm

Michael Blosser\* - Vice President of Environmental Health and Safety, Louisiana Pacific

Linda Breggin† - Senior Attorney and Director of Southeast Environmental Programs, Environmental Law Institute

Laurel Creech - Director, Team Green

Anne Davis† - Chair, Mayor's Advisory Committee on Environment

Gary Gaston\* - Design Studio Director, Nashville Civic Design Center

Jennifer Hagan-Dier\* - Assistant Commissioner, State Department of Revenue

Tom Hardin - Retired, Resident of Historic Edgefield

Doug Hausken - Executive Director, Cumberland River Compact

John Ingram, Chairman, Ingram Industries Inc., Co-Chair, Green Ribbon Committee

Jamie D. Isabel, Sr. - President and Founder, Dalmatian Creative Agency, and former Metro Council Member

Lawrence Jackson - Retired, formerly President and CEO of Global Procurement for Wal-Mart

Ellen Jacobson, M.D. - Dermatologist

Decosta Jenkins\* - President and CEO, Nashville Electric Service

Skip Lawrence\* - Chief Managing Officer, Lawrence Bros., LLC

Randy Lowry - President, Lipscomb University, Co-Chair, Green Ribbon Committee

Bert Mathews - President, The Mathews Co.

Diane Miller Mulloy - President, Milagro Biofuels

Diane Neighbors - Vice Mayor, Metropolitan Government of Nashville and Davidson County

Jean Nelson† - President and Executive Director, Land Trust for Tennessee

Mike Pearigen - Attorney, Farmer and Luna PLLC

Dave Pelton - President, Trust for the Future

Greer Tidwell\* - Director of Environmental Management, Bridgestone Americas Tire Operations

Steve Turner - Principal, MarketStreet Enterprises

Rose Wang - Chair, Mayor's Youth Council, and student, Martin Luther King Academic Magnet School

David Williams - Vice Chancellor for University Affairs and Athletics, General Counsel, Secretary of the University and Professor of Law, Vanderbilt University

Tiffany Wilmot\* - President, Wilmot Inc.

\*Subcommittee Co-Chairs

†Writing Committee



2008

**19** - Mayor speaks at Earth Day announcing:  
-Expansion of Metro Government In-house recycling  
-Anti-idling policy for city vehicles  
-Metro Employee MTA Rideshare Program  
-Standardized thermostat settings for all city government buildings to optimize energy use.

Metro Nashville becomes a member of ICLEI, Local Governments for Sustainability.

**5** - Green Building Permit & Green Certificate of Occupancy ordinance signed.

**11** - Metro Department "Green Team" is created.

**18** - Council passes ordinance to reduce paper consumption.

JANUARY

APRIL

MAY

JUNE

JULY

AUGUST

OCTOBER

Mayor Dean signs US Mayor's Climate Protection Agreement.

Mayor mandates 100% employee recycling.

**19** - Mayor signs Executive Order 33, appointing Environmental Sustainability Manager and creating the Green Ribbon Committee.

Online environmental survey of Nashville Residents; over 1,800 people respond.

MTA begins RideShare program for Metro Employees.

**30** - Green Ribbon Committee Kick-off Meeting.

**23** - Mayor signs Executive Order 34 Creating Bicycle and Pedestrian Advisory Committee.

**24** - Grand Opening of Music City Central downtown bus transit station.

US Green Building Council presents Mayor Dean with Green Star Award.

# NASHVILLE'S GREEN

# 2009

**11** - Mayor Commissions Downtown Tree Master Plan.

**20** - Mayor's Office discontinues purchase of bottled water.

Mayor Dean joins the Mayor's Alliance for Green Schools.

Metro Government becomes signatory to Tennessee's Water Blue Print.

**6** - First Green Permit issued.

**14** - MTA Begins Hybrid Bus service on Gallatin Pike.

**16** - Green Ribbon Committee presents 16 goals and 72 recommendations to Mayor.

**16** - First Green Certificate of Occupancy issued to Lawrence Brothers, LLC.

**17** - Lake Sturgeon released at Shelby Bottoms.

Green Ribbon Committee releases full report.

## NOVEMBER

**11, 13, 15, 20, & 22** - Green Ribbon Committee holds five public meetings throughout Davidson County to elicit ideas on making Nashville green; over 300 people participate.

## DECEMBER

**21** - Appointment of bicycle/pedestrian coordinator.

## JANUARY

**10** - Council passes ordinance requiring green infrastructure to improve stormwater absorption and infiltration downtown.

**11** - Completion of first Greenhouse Gas Inventory of Metro Nashville and Davidson County.

**17** - The Gulch attains LEED Silver ND, first LEED ND project in Southeast and 10th in US.

## FEBRUARY

## MARCH

**16** - Residents have first pickup day for curbside recycling in Bellevue.

**27** - Clean Water Infrastructure Program signed.

**28** - Nashville is flagship city for World Wildlife Federation's EarthHour 2009.

## APRIL

**22** - Caterpillar Financial receives LEED Gold EB, first privately owned commercial building in Tennessee to achieve LEED EB.

**23** - State of Metro, Mayor announces plan to:  
 -Purchase adjoining parcels of land to Peeler Park and Warner Park  
 -Support dedicated funding for mass transit in State Legislature  
 -Green Metro's Fleet by expanding use of hybrid, electric and bio-diesel vehicles  
 -Develop a Community Parks Plan.

## MAY

**5** - Farmer's Market Grand Re-opening Event.

Food Charter dialogue announced.

## JUNE

# RIBBON TIMELINE

The Honorable Karl Dean  
Office of the Mayor  
Metropolitan Courthouse  
Nashville, Tennessee 37201



Dear Mayor Dean,

We transmit herewith the "Summary Report with Goals & Recommendations" of the Mayor's Green Ribbon Committee on Environmental Sustainability, appointed by you pursuant to Executive Order 33 dated June 19, 2008.

The goals and recommendations set forth on the following pages are respectfully submitted to you as both a vision and action steps for making Nashville one of the greenest cities in America.

To that end, our report presents a set of 16 goals and 71 recommendations ranging from energy conservation to transportation to public participation. The attainment of our ambitious vision for Nashville's future will require focused implementation on the part of both public and private sectors of our city. The Committee recognizes that the context for arriving at these recommendations is different from the context for implementation decisions. Therefore, this report is presented as a set of recommendations for consideration by the Mayor and Metropolitan Council as to timing and implementation, and also more broadly by all the citizens of Davidson County.

There is more to our city than our city government, obviously, but clearly our city government has a duty to lead by example and do more. Even so, all Nashvillians have a stake in the health of our waters, our air, and our general environment. The greening of our city will require the active participation of many hands and hearts, and the responsibility for realizing a sustainable future is truly in the hands of all citizens. We suggest that this report can help point the way forward.

On behalf of the 27 members of the Committee (listed on the previous page) it has been our privilege to undertake and complete this important assignment.

Sincerely,

John R. Ingram, Co-Chair  
Chairman, Ingram Industries Inc.

Randy Lowry, Co-Chair  
President, Lipscomb University





“Nashville needs to be a leading city for sustainable living with clean air, clean water, and plenty of preserved open space.”

Mayor Karl Dean

# Executive Summary

On June 19, 2008, Mayor Karl Dean issued Executive Order 33<sup>1</sup>, creating a Green Ribbon Committee on Environmental Sustainability and establishing the role of Environmental Sustainability Manager in the Office of the Mayor.

Mayor Dean’s appointment of the Green Ribbon Committee presented a unique opportunity to develop a shared vision of how to protect and enhance Nashville’s distinctive environmental quality and livability. It provided a means for Nashville to harness community interest in environmental leadership and to initiate environmental policies, structures, and processes to address and anticipate environmental and livability issues and to enhance Nashville’s overall economic, social, and environmental performance.

Executive Order 33 charged the Green Ribbon Committee to recommend targets and metrics to ensure that Nashville is a leader in livability and environmental quality in the United States. Mayor Dean is a signatory to the U.S. Mayor’s Climate Protection Agreement, a voluntary commitment now signed by more than 900 mayors to work toward reducing greenhouse gas emissions in their communities. With aspirations for becoming the greenest and most livable city in the Southeast, a baseline from which environmental efforts could be measured was needed. In February, 2009, Nashville’s Health Department under the direction of Nashville Electric Service and the Mayor’s Green Ribbon Committee completed the city’s first comprehensive baseline greenhouse gas (GHG) inventory<sup>2</sup> in order to gain understanding of the sources and levels of emissions from transportation, building heating and cooling and other sources.

Executive Order 33 also requested recommendations for high-level policy direction consistent with the Governor’s Task Force on Energy Policy, as well as specific strategies to help guide Metropolitan Government, businesses, households, residents, and neighborhoods to achieve the livability and environmental quality goals.

The Mayor’s Green Ribbon Committee on Environmental Sustainability comprised 27 citizen leaders in Nashville’s business, government, environmental, education, and civic sectors. Members have broad experience, expertise, and interest in environmental and livability issues.

1. See Appendix A

2. Baseline inventory of Greenhouse Gas Emissions for Metropolitan Nashville and Davidson County is available on the Green Ribbon website at [http://www.nashville.gov/mayor/green\\_ribbon](http://www.nashville.gov/mayor/green_ribbon).

# A vision for a GREEN CITY

The Committee met from July 2008 through April 2009 working in full committee plenary sessions and in four subcommittees.<sup>3</sup> The subcommittees were organized around the subjects of Education & Outreach, Building & Energy, Mobility and Natural Resources.

Throughout the process of developing recommendations, the Green Ribbon Committee actively engaged citizens, businesses, related Metropolitan Government departments and many others during the course of its deliberations.<sup>4</sup> Hundreds of concerned citizens and subject matter experts were involved during the period when the Committee was developing the recommendations contained in this document. Additional input was received from officials at the federal and state levels.

Staff members from Metropolitan Government departments with environmental responsibilities<sup>5</sup> were assigned to support the Green Ribbon Committee and the Environmental Sustainability Manager during the course of this process. This group became known inside Metropolitan Government as “The Green Team.”<sup>6</sup> Participating departments completed a survey as input to the Green Ribbon Committee.

## COMMUNITY INVOLVEMENT

Per Mayor Dean’s charge, the Green Ribbon Committee solicited ideas and involvement from citizens throughout the city. On the day Mayor Dean signed the Executive Order creating the Green Ribbon Committee, a citizen’s environmental survey was launched on a newly created Web site at [www.nashville.gov/mayor/green\\_ribbon](http://www.nashville.gov/mayor/green_ribbon)

By December 2008, more than 1,800 Nashvillians had provided their views about how to make Nashville more sustainable and what they were personally willing to do as citizens to make it so. Over 80% of respondents indicated that they would be interested in being involved with the environmental sustainability efforts of Metropolitan Government.

The Committee established a web site that provided announcements of committee meetings, summaries from sessions, and other background information. All Green Ribbon Committee plenary meetings were open to the public. In November 2008, the Committee launched a series of five public workshops throughout the city to systematically engage Metro area citizens in discussions about environmental sustainability in Nashville and the work of the Committee. Approximately 300 people attended, generating some 900 recommendations.<sup>7</sup>

This wide-ranging and open dialogue produced a large body of information, which was considered and discussed by Green Ribbon Committee members working through their four subcommittees. The Committee also utilized the expertise of The Meridian Institute and its principal consultants Michael Lesnick and Ann Olsen.



3. See Appendix B

4. See Appendix C

5. Environmental responsibilities of those key Metro departments are highlighted on the Green Ribbon website at [http://www.nashville.gov/mayor/green\\_ribbon/docs/MetroDepartmentHighlights.pdf](http://www.nashville.gov/mayor/green_ribbon/docs/MetroDepartmentHighlights.pdf).

6. See Appendix D

7. A summary of public input is in Appendix E. The full survey summary is on-line at: [http://www.nashville.gov/mayor/green\\_ribbon/survey.asp](http://www.nashville.gov/mayor/green_ribbon/survey.asp). The complete public workshop report is on-line at [www.nashville.gov/mayor/green\\_ribbon/docs/PublicMeetingSummary.pdf](http://www.nashville.gov/mayor/green_ribbon/docs/PublicMeetingSummary.pdf)



## RESULTS

This fact-finding and analysis process generated the report that appears on the following pages, consisting of 16 goals and 71 action recommendations. The recommendations are further explained as being achievable in the Committee's view as either "Quick Wins," or in the "Mid-Range" or "Long-Range" future. (These time values for each recommendation are indicated with the abbreviations Q, M or L to the right in the recommendation chart.)

The Committee respectfully recognizes that in regard to actions by Metropolitan Government the implementation of any particular recommendation will be determined ultimately by the Mayor and Metropolitan Council, in some cases working in concert with decision-makers in neighboring jurisdictions. Likewise, progress by decision-makers in the private sector will be determined by entities outside government.

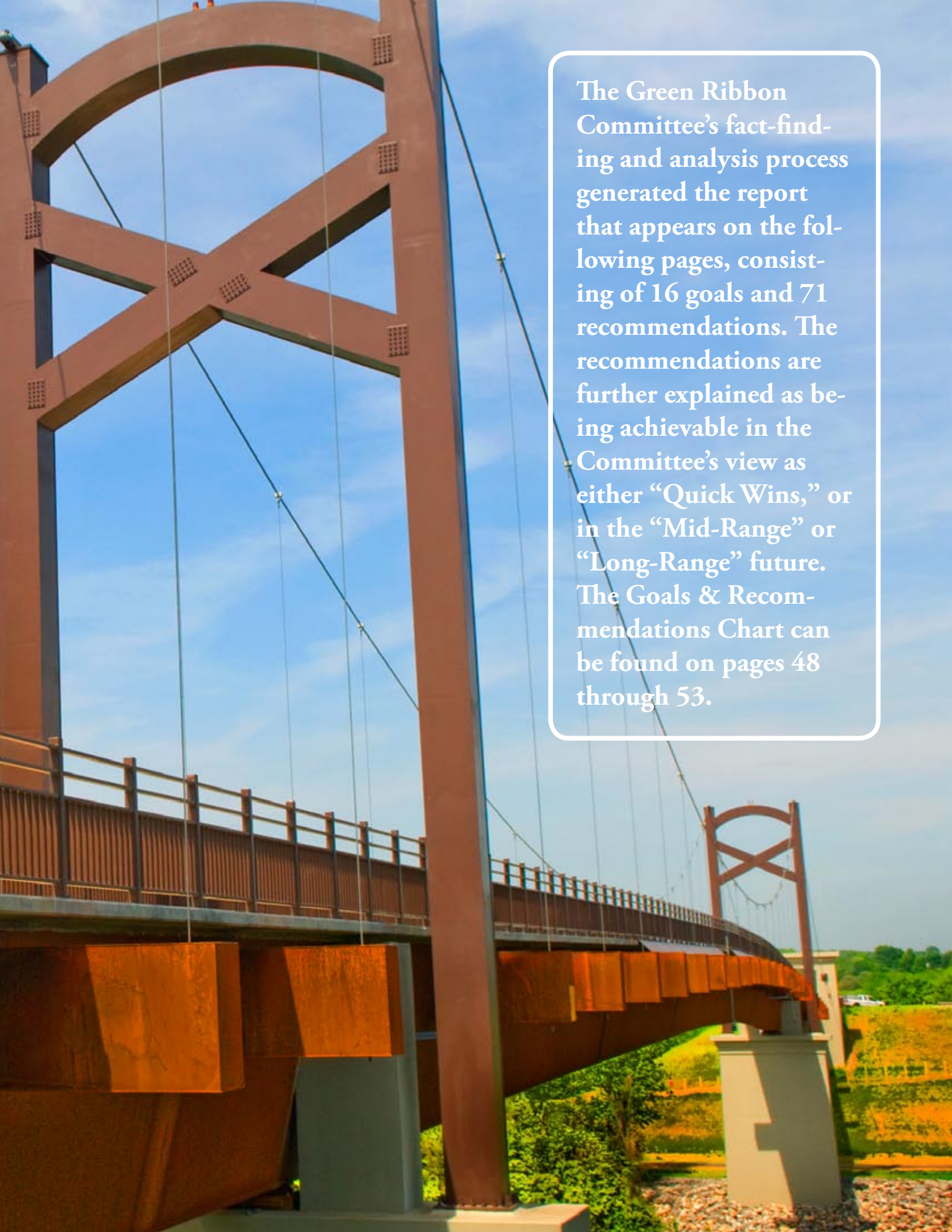
How fast and how far Nashville as a community moves toward sustainability will depend on the ongoing engagement of all facets of our city. The Green Ribbon Committee invites everyone in Nashville to learn more and actively contribute to this historic effort. For more details, please visit the Green Ribbon Web site at: [www.nashville.gov/mayor/green\\_ribbon/index.asp](http://www.nashville.gov/mayor/green_ribbon/index.asp).

## ACKNOWLEDGEMENTS

This report would not have been possible without the commitment of many individuals and organizations. We deeply appreciate their gracious willingness to share experience and insight that were vital to the creation of this report. We are grateful for the generosity of Green Ribbon Committee members for sharing their expertise and time, to Lipscomb University, Ingram Industries Inc. and Croft Middle School for hosting meetings and providing refreshments, and to the following individuals for their generous donation in contributing to this initiative and the greening of Nashville; Steve Turner, John Ingram, Dennis Alpert of Wal-Mart, Roe Elam of the Tennessee Fund for Sustainability, and Anne Davis and Karl Dean. We also extend deep gratitude to Keel Hunt for his valuable contributions, and to Gary Gaston and Marne Duke for designing this report. We are grateful for the dedicated efforts of Metropolitan Government staff for their valuable assistance to the Green Ribbon Committee, Jenna Smith and Sharon Smith for their leadership, hard work and dedication to the greening of Nashville; and especially to Mayor Dean for having the vision of a greener Nashville and providing the leadership and support for the creation of a unified plan that will make Nashville a leader in environmental action.



Finally, while the inspiration for the 16 goals and 71 recommendations found in this report can be traced to many sources, we would like to acknowledge the dedication of those who are committed in their work and in their lives to making Nashville green.



The Green Ribbon Committee's fact-finding and analysis process generated the report that appears on the following pages, consisting of 16 goals and 71 recommendations. The recommendations are further explained as being achievable in the Committee's view as either "Quick Wins," or in the "Mid-Range" or "Long-Range" future. The Goals & Recommendations Chart can be found on pages 48 through 53.



# Overarching Recommendations

## Greenhouse Gases

1 Goal  
3 Recommendations



## Education & Outreach

5 Goals  
18 Recommendations



## Energy & Building

3 Goals  
25 Recommendations



## Mobility

1 Goal  
11 Recommendations




## Natural Resources

6 Goals  
14 Recommendations



# Overarching Recommendations



This report proposes that Nashville initiate a comprehensive and coordinated program to advance the environmental sustainability of the city. The report proposes that development occur, and services be delivered, in a way that does not degrade the ecosystems and communities that contribute to our quality of life and overall livability.

Nashville is a great city, and together Nashvillians are developing a green vision. Looking forward 10 years and more we envision a city where every citizen of Davidson County has at least two modes of transportation available and accessible in order to reach food, work, school, worship and recreation, and the entire process of visiting music city is green for tourists – from arrival, to checking into a hotel, walking along streets, eating in restaurants and visiting cultural and musical institutions – tourists and visitors will all know the story of Nashville as a Green City and return home to tell about it and perhaps to have learned something as well in the process.

Ten years from now, we envision that Nashville will have developed and executed the most progressive open space plan in the Southeast to preserve its incredibly unique ecological, cultural, and historic landscape and enhance its reputation as a desirable location for people and businesses to locate. We look forward to the time, soon, when Nashville will have a locally-based, sustainable food system, and all 2,500 miles of streams will be clean and healthy. We would like to plan for a Nashville that will have a robust tree canopy and significantly improved air quality - where energy use will be reduced and renewable energy use such as from solar power and geothermal will be increased. Waste will be reduced and we will be recycling more of the waste we generate,

saving money and our natural systems. Land use will be linked with Open Space and Transportation Planning to focus development along the urban transportation corridors with the goals of increasing density within the urban core, preserving rural/non-urban lands, and conserving land between the transportation routes for ecological corridors. The social, environmental, and economic benefits citizens and businesses will realize from traditional neighborhood development will be realized.

Several specific actions emerged as overarching recommendations of the committee - recommendations that carried great significance toward the protection and enhancement of Nashville's natural capital and the aspiration of Nashville becoming the greenest city in the Southeast. This section describes the goals and overarching recommendations, which will set Nashville on course to becoming a leader in environmental quality and livability in the United States:

**1. Establish a Metropolitan Government agency for environmental and sustainability policy with authority, accountability and funding (a board, director and staff) to keep a permanent focus on environmental/green issues:** The recommendations contained in this report set forth an ambitious

environmental agenda for Nashville and Metropolitan Government. To make Nashville a truly sustainable city, in addition to a unified vision for protection and preservation of our natural and built environment, the city also needs a unified structure to ensure the full potential of our actions and leverage and use resources in the most efficient manner. There are several models that can be considered, all models, however, should include a “common sense environmental/livability review” for major Metro decisions. The review would not bar any decision or require any particular action, rather, would ensure the consideration and identification of 1, Environmental and livability impacts, including irretrievable commitment of natural resources (such as decisions that will impact water supply for the next decade) and 2, potential alternatives that may lessen the environmental and livability impacts of the decision while still achieving the purpose/need of the proposed action.

The goal of this recommendation is to keep a permanent and shared vision on environmental/green issues and have the most effective framework for success in carrying out that vision.

## 2. Develop Green Jobs as a pathway to a green

**economy:** Green jobs is a term used to describe positions that can help poise Nashvillians for new innovative career opportunities, improve the environment and help transition the city to a green economy. According to a study prepared by Global Insight, Inc. for the U.S. Conference of Mayors in October 2008, the U.S. economy generates more than 750,000 green jobs—a number that is projected to grow over 4 million jobs over the next three decades. The report found that over half of current green jobs were in the fields of Engineering, Legal, Research and Consulting - thus highlighting the important role that supportive or “indirect” jobs play. The report projects Green Jobs could contribute 10% of new jobs through 2038, representing the fastest growing job segment in the U.S. economy. Metropolitan Government should work with local organizations, business, community members and area academic institutions to create a “green jobs corps” or similar recruitment, training and placement program in the pursuit of a new economic development strategy to make the city cleaner, greener, and more energy efficient.

## 3. Create a Sustainability Education and Green

**Building Design Center:** As a public-private partnership, this center will showcase and educate residents, businesses, builders, etc on environmental sustainability and green building techniques and technology.

## 4. Adopt an Environmentally Preferred Purchasing Program for Metropolitan Government:

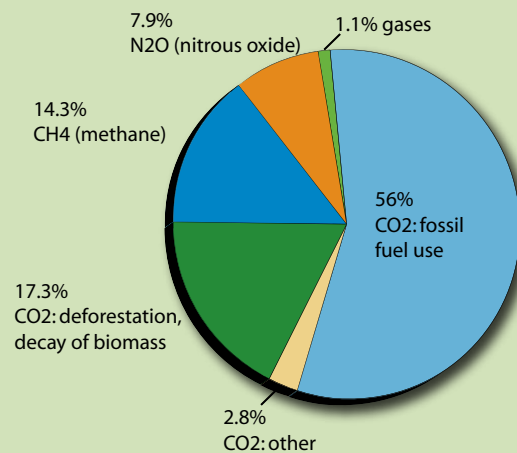
Adopt environmentally preferred purchasing (EPP) policies for all consumables, durable goods and equipment Metropolitan Government departments purchase. The USGBC has standards for such categories as “Green Cleaners,” low mercury lighting, non-toxic pest control, recycled content supplies, Energy Star products, etc. that can be referenced in developing policy.

## 5. Create a Green Business/Building Roundtable:

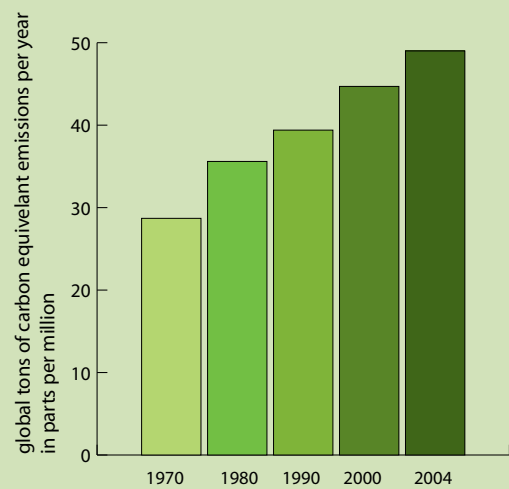
Work with the Chamber of Commerce to create a Green Business/Building Roundtable and “Green Your Business” education program with goal of networking, inspiring, and educating individuals and companies so Nashville’s buildings and businesses become greener and healthier.

**Global greenhouse gas emissions due to human activities have grown since pre-industrial times, with an increase of 70% between 1970 and 2004.<sup>8</sup>**

2004 GHG Emissions by Output



Global GHG emissions



8. Climate Change 2007: Synthesis Report, Summary for Policymakers, Intergovernmental Panel on Climate Change.

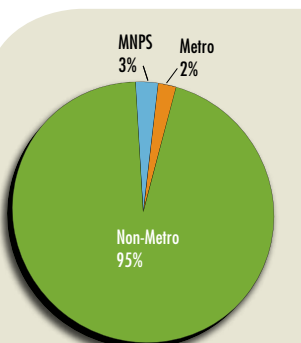
# Greenhouse Gas Inventory

With aspirations for Nashville to become the greenest and most livable city in the Southeast, in February, 2009, the Metropolitan Health Department under the direction of Nashville Electric Service and the Mayor's Green Ribbon Committee completed a baseline greenhouse gas (GHG) inventory for Nashville and Davidson County. The purpose was to gain understanding of the sources and levels of emissions from transportation, building heating and cooling and other sources.

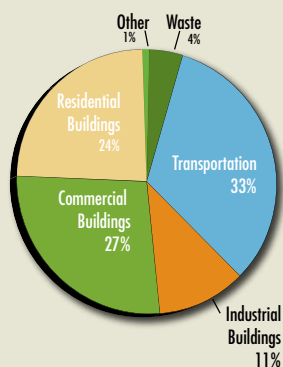
Using ICLEI software and methods, the resulting inventory indicates the total 2005 community-wide GHG emissions were equivalent in greenhouse potency to approximately 14.4 million tons of carbon dioxide, or 23.9 tons per capita. The inventory found the primary sources of GHG emissions from this community are energy usage in buildings and transportation. Many of the goals and recommendations contained in this report reflect aspirations to significantly reduce Nashville's GHG emissions.

The actions of every business and every resident have a meaningful impact on our emission levels. The Greenhouse Gas Inventory showed (as displayed in the chart below) that Metropolitan Government and Metro Nashville Public Schools operations together contribute approximately 5% of the 14.4 million ton baseline total for the County.<sup>9</sup> The data provided by the Greenhouse Gas Inventory underscores the importance of overall community support as we work together toward a greener Nashville. By sector, results of Nashville's community greenhouse gas inventory showed the following emissions from greatest to least:

- Buildings electrical use (residential, commercial and industrial): 62%
- Transportation: 33%
- Waste generation and disposal: 4%
- Other (Methane emissions from closed landfill): 1%



2005 Metro vs. Community Greenhouse Gas Emissions



2005 Nashville Community Greenhouse Gas Emissions

In the Municipal inventory, most emissions (44%) come from city buildings. This is followed by 21% for energy use by water and sewer services,<sup>10</sup> 15% for employee commute, and 15% for vehicle fleet.

The U.S. Mayor's Climate Protection Act targets a 1990 baseline year and 2012 as a target date for reaching pre-1990 levels; however, because Nashville began the inventory process later than many other cities, access to data from 1990, or almost 20 years ago, in order to complete a comprehensive inventory for that year would have been difficult at best. Nashville is now aligning itself with recent national trends to use 2005 as a baseline year, beginning with realistic short-term goals, and then seeking ambitious reductions as various green initiatives and technologies become in effect. The goals set forth below are both realistic and bold, and will ensure that Nashville is successful in GHG reduction:

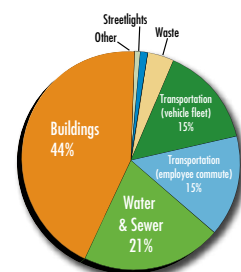
- Level off CO<sub>2</sub>e emissions to 2005 levels by 2012
- 20% below 2005 levels by 2020
- 80% by below 2005 levels by 2050<sup>11</sup>

The larger Nashville community is therefore challenged to reach these emissions goals as well. Strategies to begin to reach these goals include:

- A multi-year Nashville themed campaign about the correlation between behaviors and greenhouse gas emissions.
- Creation of a Nashville Carbon Offset Program to fund specified local green projects designed to "offset" greenhouse gas emissions and help the city in reaching its emission reduction goals.
- Metropolitan Government departments to incorporate climate protection criteria and actions into planning activities, budgeting and performance measures.

Further, recommendations contained throughout this report will have great impact on reducing Nashville's emissions. As evaluation in outlying years occurs in tracking Nashville's progress toward achieving emissions reductions goals, additional strategies should continue to be developed.

2005 Municipal Greenhouse Gas Emissions by Sector



9. The complete report of this inventory is published on the Green Ribbon website at [http://www.nashville.gov/mayor/green\\_ribbon/docs/2009GreenhouseGasInventory.pdf](http://www.nashville.gov/mayor/green_ribbon/docs/2009GreenhouseGasInventory.pdf)

10. Water and Sewer services are typically analyzed separately because the operations usually contribute to a higher percentage of energy use within government operations.

11. Reaching this goal will make city government almost carbon neutral.



# 16

# goals

*On April 16, 2009, the Green Ribbon Committee presented 16 Goals and 71 Recommendations to Mayor Dean at the Shelby Bottoms Nature Center.*

# 71

# recommendations



*Build a Culture of Sustainability*

# Education & Outreach

## **GOAL: For all Nashvillians to care for and connect with Nashville's natural resources for future generations**

Foundational programs that will build a culture of sustainability in Nashville and developed recommendations along three platforms:

- Educating Future Generations through curriculum, outdoor education and greener operations
- Inspiring our Community through a one-stop shop website, engagement and friendly competition
- Leading By Example by the Green Ribbon Committee, Metro Government, and our Business Community

The subcommittee held 5 public meetings in November 2008 and then identified 3 focus areas - Diversity, Education, and Business - to concentrate their research and ensure a pathway to success. Leaders in these areas were asked to consider:

- How Nashville could effectively communicate, educate, and inspire engagement on environmental sustainability throughout neighborhoods and sectors?
- What city-wide goals, programs, and projects would they most like to see implemented to help Nashville become a leader in environmental quality?

## **RECOMMENDATIONS:**

### *Quick Wins*

- 1. Update the existing Green Ribbon website and prominently place onto the nashville.gov site - include all available information and resources.**



**2. Provide a “Green Operations Support and Education” fact sheet:** For everyone to receive when applying for a business license.

**3. Require Metro Green Education:** A “Green Education” component as a part of Metropolitan Government’s Human Resources training program and encourage a similar program for Teacher In-Service.

**4. Expand current “Green Team”<sup>12</sup> of 10 core agencies to all Metropolitan Government:** Each Department designates an “Environmental Steward.” The Green Team would convene regularly to review initiatives, provide educational opportunities for staff, and develop new programs to improve sustainability within departments. The Green Team would also serve as a liaison for reporting to the Green Ribbon Committee.

**5. Create a “Green Neighborhood Program”:** To foster positive competitive spirit among all neighborhoods across the city. The program could include conducting roadside cleanups, recycling at neighborhood events, education programs on water, energy and more.

**6. Designate April as “Earth Month” at Metro Libraries:** Libraries highlight environmental activity / books during focus period - April - “Earth Month.”

**7. Establish a Green Speakers Bureau:** Beginning with a core group of environmental leaders.

### *Mid Term*

**1. Establish a Curriculum Coordinator for Conservation and Environmental Education within Metro Nashville Public Schools (MPNS):** Fund (or reassign staff) within MNPS to serve as curriculum coordinator for conservation and environmental education within the public schools system.

**2. Wide-Ranging Green Public Relations and Education Campaign:** Nashvillians, through both the on-line survey and public meetings have asked for a PR and education campaign to focus on the “why” and “how” for specific areas such as water conservation, energy efficiency, recycling, outdoor activity, etc.

**3. Comprehensive (One-Stop Shop) Green Website on Nashville.gov:** Create a comprehensive website on Environmental Sustainability to build from existing Green Ribbon Committee site. Post events, educational and other resources. Information for general public and business owners. Engage people to sign up and get involved in the wide array of volunteer opportunities. Website should allow easy access to information on why/how/when/where of everything green within our community - design and look consistent with PR Plan.

12. See Appendix D

**4. All Metro Schools in Tennessee Pollution Prevention Partnership Program (TP3):** The Tennessee Pollution Prevention Partnership TP3 is a program operated by the Tennessee Department of Environment and Conservation. The TP3 is a network of Tennessee households, schools government agencies, organizations, businesses and industries that demonstrates that pollution prevention protects the environment, saves money and improves communities. Through this program, MNPS would document green activities such as recycling, hazardous waste management, air quality, water conservation, etc. The program also provides state-wide recognition for green schools and schools completing the process are recognized with a green flag.

**5. Establish a Mayor’s “Green Note” leadership award program for recognizing outstanding green leaders:** Conduct spring of each year possibly using Governor’s Environmental Stewardship Award Program as example. Awards can be given for outstanding green leaders by category; for example Churches, Schools, Neighborhoods, Businesses, etc. Businesses that meet standards receive a designation allowing display of “green musical note.”

**6. TP3 for operational facilities (Utilities, Police and Fire stations, Health Care, Parks, Public Works, etc.):** Through this program, Metro would document green activities such as recycling, hazardous waste management, air quality, water conservation, etc. for state-wide recognition/ green flag. Track and communicate performance of operations.

### *Long Term*

**1. Provide an outdoor classroom area for every Metro Public School:** All MPNS should have an outdoor classroom area where students can learn, plant flowers or vegetables and connect with nature.







*Conserve Energy, Reduce Waste, Green our Buildings*

# Energy & Building

In addition to the responsibility for providing recommendations to the Green Ribbon Committee for each of the selected areas, this subcommittee was given oversight responsibility for the development of a greenhouse gas emissions inventory. Nashville Electric Service commissioned Gresham, Smith and Partners to work with the Department of Health to inventory existing Metropolitan Government of Nashville and Davidson County (Metro) GHG sources to provide an understanding of its emission sources and distribution. The year 2005 was chosen as the baseline year due to good data and average weather. The Metro GHG baseline emissions inventory was also conducted to develop a baseline for which environmental efforts can be measured and indicate where improvement may be needed.

Nashville and Davidson County community produced approximately 14.4 million tons of CO<sub>2</sub> equivalents (CO<sub>2</sub>e) in 2005. The sectors producing these emissions are as follows from greatest to least: electric use for residential, commercial and industrial (62.4%); transportation (32.6%); waste generation and disposal (4.0%); and methane emissions from closed landfills (1.0%). Using a 2005 population of 602,679, the tons of CO<sub>2</sub>e per capita is 23.9. This is similar to estimates from the United States overall (23.8) and lower than estimates from the state of Tennessee (24.9).

Metropolitan Government, a subset of the Nashville and Davidson County community, produced 649,417 tons of CO<sub>2</sub>e. The highest emitter for Metropolitan Government was energy use in buildings which accounted for 43.5% of the total CO<sub>2</sub>e emissions. This was followed by 21.5% for energy use by water/sewage services, 15.3% for employee commute, 15.2% for the Metro vehicle fleet, 4.1% for waste generation and disposal, and 0.5% for streetlights. The results of the GHG analyses identified Metro municipal operations contribute to approximately 3.0% of the total CO<sub>2</sub>e emissions for Nashville and Davidson County.

The Metro Nashville Public Schools (MNPS) data is displayed as a subset of the Metropolitan Government data so that varying reduction efforts can be tracked both independently and as a total. MNPS operations generated a total of 239,319 tons of CO<sub>2</sub>e, which accounts for 36.9% of the total municipal emissions. Energy consumption totaled 35.7% of the total municipal energy consumption. Total MNPS operations contributed to approximately 2.0% of the total CO<sub>2</sub>e emissions.



# Energy & Energy Efficiency

## GOAL: Reduce energy use by 5% by 2012 and by 20% by 2020

The majority of Metro greenhouse gas emissions result from consumption of electricity and natural gas, and this area more than any other provides an opportunity for all agencies of the Metropolitan Government to participate and make a substantial impact. We recognize that we only have a short window of opportunity to start on a path of permanent and long-term reductions of greenhouse gas emissions, before climate change becomes significantly worse. All employees of the Metropolitan Government should be motivated to assist in the reduction of our carbon footprint.

## RECOMMENDATIONS:

### *Quick Wins*

- 1. Implement a program at NES to switch from petroleum-based mineral oil to soybean-based insulating oil for various types of electrical equipment used citywide by Nashville Electric Service:** Soybean based insulating oil is non-toxic, biodegradable and is a renewable resource. It has been shown to have a significantly smaller carbon footprint than petroleum-based mineral oil according to the “Building for Environmental and Economic Sustainability Technical Manual and User Guide” from the National Institute of Standards and Technology (NIST).
- 2. Implement a Mayor’s Environmental Change Pledge Program.**

### *Mid Term*

- 1. Develop a Green Fleet program:** Expand use of electric vehicles, electric hybrid vehicles, and ethanol and biodiesel vehicles will help diversify energy supplies, improve emissions and support regional economic activity.
- 2. Develop a city-wide energy use reduction policy to encourage government, businesses and their employees to conserve energy:** Educate employees on the impact their actions have on electrical demand and encourage energy use reduction in the use of lighting, computers, electrical devices, heating and air conditioning.
- 3. Develop a Metropolitan Government sustainability program to create healthy and efficient building practices beyond weather stripping into affordable housing practices, with support from grants and other resources:** Also included will be initiatives for new construction and existing buildings low-income energy conservation and sustainable, affordable housing including Energy Star standards, weatherization, and conservation education.
- 4. Issue window stickers that provide free meter parking for clean technology vehicles:** Provide a window sticker issued from the city for free meter parking for clean technology vehicles, including electric, electric hybrid, biofuel, and other clean technology vehicles.

### *Long Term*

- 1. Develop and deploy an Advanced Metering Infrastructure (AMI) system for NES residential customers:** An AMI implementation would support environmental benefits, would support TVA’s Energy Efficiency and Demand Response initiatives as well as Federal Smart Metering and Smart Grid requirements, and will enable residential customers to manage their energy consumption and conservation efforts.



# Waste Reduction and Recycling

## GOAL: Reduce waste in Davidson County by 35% by 2012 and 65% by 2020

Solid waste and solid waste collection make a substantial contribution to the Green House Gases in Nashville and Davidson County. Metropolitan Government has an antiquated solid waste plan that differentiates between solid waste services based on residential location resulting in inefficiencies, inadequate recycling opportunities and services, redundant transportation routes for haulers, increased traffic and pollution, low recycling rates and high relative costs. Our goal is to encourage the reduction, reuse and recycling of solid waste generated within our borders while also helping to mitigate issues with traffic and fuel pollution in our neighborhoods and communities. This goal will use the waste disposed of in 1995 as a base year to align with waste reduction requirements of the Tennessee Department of Environment and Conservation.

### Recommendations:

#### *Quick Wins*

1. **Develop a plan to increase the number of recycling drop off sites, especially in the General Services District.**

#### *Mid Term*

1. **Provide recycling at multi-family dwellings.**
2. **Develop and implement a city-wide program for recycling construction and demolition debris.**
3. **Require business and industry to divert fiber, ewaste, yard waste, wood (pallets), and metals from landfills.**
4. **Implement a food waste composting program for large producers of food waste.**
5. **Increase the number of downtown recycling containers for pedestrians.**
6. **Insure adequate and convenient recycling containers are available at all Metropolitan Government buildings, city-owned sites, and city-sponsored functions.**
7. **Provide incentives for private waste haulers to offer recycling collection as a cost effective option for residential and commercial customers, with the goal to make recycling more cost effective than landfilling.**

#### *Long Term*

1. **Implement a Pay As You Throw (PAYT) utility program for solid waste disposal in Nashville and Davidson County:** Metropolitan Government will establish and methodically phase in a self-funded Pay as You Throw (PAYT) Solid Waste Utility Program for all Davidson County residents by 2015, which will include financial incentives for residents, infrastructure, education, and consideration of green business practices for haulers to meet waste reduction and green house gas goals. This program will begin with a PAYT program on additional carts and increased frequency of curbside recycling in the Urban Services District (USD) as well as curbside recycling for a fee in the General Services District (GSD) as soon as possible.







# Green Building

## GOAL: Reduce CO2 emissions and environmental impacts of buildings in Nashville

This goal may be achieved through best building practices for sustainable and healthy living, new and existing buildings, public and private buildings and using EnergyStar and LEED certification standards.

### Recommendations:

#### *Quick Wins*

#### **1. Establish a Green Building Challenge to publicize Metropolitan Government's green building practices:**

Program would identify and publicize best practices and demonstration efforts that meet green building goals and evaluate immediate Metro-wide application of specific standards in codes that will evolve to the point where LEED or other 3rd party verification systems will be unnecessary. The Challenge will educate and reach out to Metropolitan Government employees, private owners, developers, contractors, architects, and the public regarding energy and waste saving measures such as: environmental audits, energy reduction, motion sensor lights, water harvesting, pervious pavement, Green Seal cleaning supplies and organic fertilizer/pesticide, white/highly reflective roofs and paving, energy-efficient windows, insulation, leak sealing, geothermal/solar/wind energy, solar water heaters, faucet aerators, Water Sense and storm water strategies, automatic shut off for faucets, Energy Star appliances, thermostat policies, compact fluorescent and LED bulbs.

**2. Create a Green Building Roundtable:** Create a goal for top 50 businesses (measured by both local employment and energy use) for their buildings to become green and healthy.

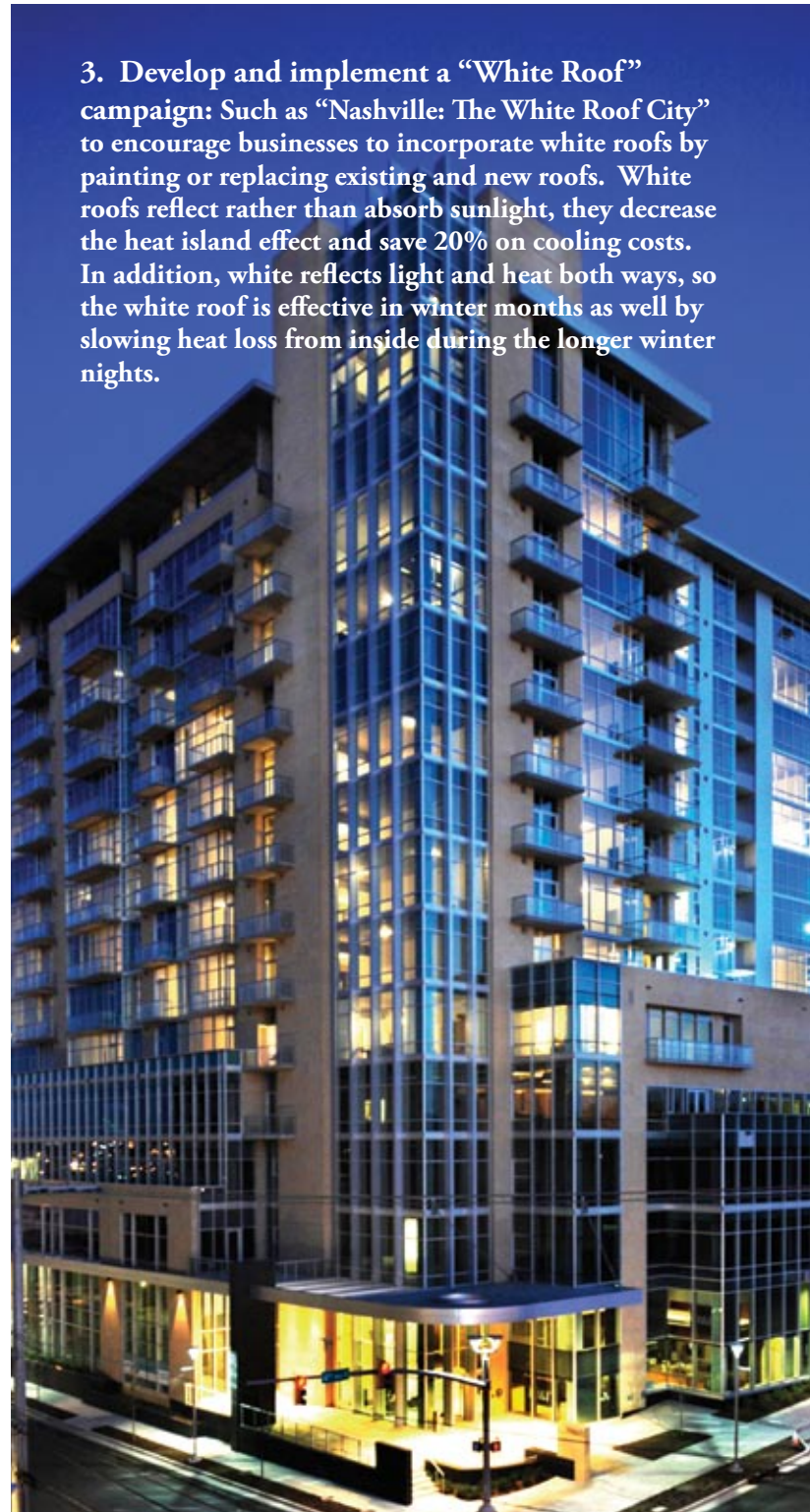
**3. Challenge top 50 businesses to meet Energy Star by 2012 and LEED Existing Building (with a focus on optimizing water usage) by 2020 for their existing buildings.**

#### *Mid Term*

**1. Consolidate operation and maintenance of most Metro buildings in General Services (GS) and create a Metro Energy Manager position in GS to coordinate an energy reduction and conservation program for Metro buildings & to serve as contract administrator for an amended ESCO contract.**

**2. Complete a solar installation at a high-profile public building in Nashville with a kiosk inside that displays solar output and energy use.**

**3. Develop and implement a "White Roof" campaign:** Such as "Nashville: The White Roof City" to encourage businesses to incorporate white roofs by painting or replacing existing and new roofs. White roofs reflect rather than absorb sunlight, they decrease the heat island effect and save 20% on cooling costs. In addition, white reflects light and heat both ways, so the white roof is effective in winter months as well by slowing heat loss from inside during the longer winter nights.



**4. Retrofit 10 existing Metropolitan Government buildings to attain LEED Existing Buildings Silver certification or comparable 3rd party verified system (with a focus on optimizing water usage) by 2012, and initiate a program for retrofitting 50% of existing Metro buildings to attain LEED Existing Building Silver certification or comparable 3rd party verified system by 2020:** All tenant improvements made by Metro or facilities leased by Metro will achieve LEED Commercial Interiors Silver (with a focus on optimizing water usage) by 2012.

**5. All new public or publicly funded construction and renovation over 5,000 sq ft. (or \$2M, which ever is lower) will be LEED Silver certified or comparable 3rd party verified system (with a focus on optimizing water usage) by 2012.**

**6. Encourage all new construction, and renovations greater than 50% of replacement cost, of commercial and residential buildings to meet Energy Star by 2012 and LEED Silver certified or comparable 3rd Party verified system (with a focus on optimizing water usage) by 2020.**

**7. Provide private sector green building incentives, including expedited plans and review, high-density bonuses and fee rebates:** A) Relevant department heads will assign the highest priority to processing permits for LEED Silver certified buildings or similar 3rd party verification system (with a focus on optimizing water), including expedited plans and reviews; B) Provide high density bonuses to downtown commercial, residential and mixed-use developments such as greater height, floor area, and residential unit density bonuses; and C) Provide fee rebates on sliding scale, for permit or certification fees.

### *Long Term*

**1. Establish a center for sustainability education and green building design as a public-private partnership that would showcase and provide education on green building practices:** Metro will create a Green Building Design Center (GBDC) as a public-private partnership, including the U. S. Green Building Council (USGBC), the Civic Design Center, Codes, and General Services Department. The GBDC will showcase green building products, educate building owners, contractors, developers, architects and the public on new technologies and building methods, and assist with implementation of ideas and programs developed by the Green Building Challenge. Solutions may include energy reduction, geothermal and solar installation, storm water management, zero-waste solutions, dedicated recycling areas in buildings, and green roofs. The GBDC will offer free technological assistance, green building guidelines and public promotion for qualified projects.



For more information visit:  
[www.nashville.gov/mayor/green\\_ribbon](http://www.nashville.gov/mayor/green_ribbon)





## Expand Transportation Options

# Mobility

## GOAL: Provide every citizen of Davidson County at least two modes of transportation available and accessible in order to reach food, work, school, worship and recreation

By implementing the Mobility Subcommittee's recommendations set forth below, Nashville and Davidson County can not only achieve this goal, but also:

- Reduce dependence on the automobile to reduce vehicle miles traveled and costs involved with maintaining and developing the corresponding road infrastructure.
- Improve air quality, public health and exceed federal air quality standards by focusing on active transportation options and smart growth development planning.
- Improve quality of life for all citizens through increased connectivity fostering healthy and stable communities.
- Enable Metro departments and agencies to execute sustainability plans and projects already being considered or in development.

The Mobility Subcommittee recognizes that in order to become the “greenest city in the Southeast” Nashville must look beyond its borders to issues, strategies and solutions that impact the entire Middle Tennessee area. In matters of mobility there is clearly a need for regional cooperation and a coordinated regional effort on all three areas of focus: (1) Mass Transportation, (2) Non-Motorized Transportation and (3) Alternative Fuel Vehicles in order to meet our overarching goal.

Although the recommended actions and goals set forth herein were developed primarily for implementation in Nashville and Davidson County each is designed to fit into and complement the development of a multi-modal transportation system for the Middle Tennessee region. Each recommended initiative will move us toward a holistic solution to Nashville and Davidson County's mobility issues and the development of an efficient and affordable multi-modal transportation system to fulfill our goal that “every citizen of Davidson County have at least two modes of transportation available and accessible in order to reach food, work, school, worship and recreation” and move Nashville towards its goal of being the “greenest city in the Southeast.”



# Recommendations:

## Quick Wins

**1. Create a Mayor's Office of Environmental Policy and Sustainability with director and staff:** This office should have the authority to coordinate efforts and work with Metropolitan Government departments and agencies to facilitate Metropolitan Government's commitment to making Nashville the "greenest city in the Southeast." The Director of the Sustainability Office would serve as the principal environmental policy adviser to the Mayor's office and be charged with working with departments and agencies to identify sustainability issues and develop reporting requirements (e.g. Smart Growth Audits). The staff of the Sustainability Office would be charged with working with Director to increase interdepartmental cooperation and identify funding and economic development opportunities.

**2. Establish MTA and "Active Transportation" agencies as part of the planning and zoning process in Davidson County. Require all planning and zoning include sustainability measures regarding mass transit and active transit and require MTA or related organization to approve all permits:** By establishing "active transportation" agencies as part of the planning and zoning process and require all planning and zoning within Nashville and Davidson County include sustainability measures regarding mass transit and active transit we will ensure Nashville and Davidson County breaks its addiction to driving by implementing policy to make biking, walking and mass transit a viable and safe alternative. Require/improve zoning regulations to include mass transit and "active transportation" in development and planning. Current zoning laws and regulations focus on impact on automobile use and motorized traffic. This would require communities to consider and address/create integrated transportation plans and focus on alternatives to automobile transportation – pedestrian and bicycles. (See Mid Term Goal # 5 and Mid-Term Goal #6).

Low-density sprawl typically makes driving the only realistic transportation option. By formally linking transportation and land use, Davidson County will promote smarter growth. Growth policies should be aimed at promoting development patterns that place people closer to jobs, shopping, and other activities.

**3. Work with MPO to generate support for legislation to establish dedicated funding authority for mass transit:** This is the initial step necessary to accomplish Mid-Term Goal #3 and Long Term Initiative #1. Mobility's over arching goal is unachievable without this step. As discussed above, lack of a dedicated funding source has been identified as the primary barrier to establishing an efficient, reliable and affordable integrated multi-modal Regional



Transit System in Middle Tennessee. By supporting the bill before the State General Assembly in Spring of 2009, Metro Davidson County's long-term commitment to sustainability and quality of life will start to take shape.

Studies show that at least 10% of all state and federal transportation funding is to be used on non-automobile or "active transportation" projects. However, MPO and MTA are unable to access this funding without dedicated funding to initiate these projects. Current local and state funding options focus on roads and automobiles, not on the type of holistic integrated Regional Transit System plan needed for Nashville and Davidson County. Working with MPO and other regional agencies and organizations to generate support is an opportunity to educate the public about long-term transportation plans and the need for a regional approach to improve mobility and expand multi modal transportation options.

**4. Identify and implement a highly visible and tangible mobility initiative and complete within one year:** Programs will Generate public demand for mass transit and active transit initiatives; lay the foundation for support for larger initiative to come; provide a valuable service to the public; enliven streetscapes; improve air quality; reduce storm water runoff; and provide access to goods and services. Aspects of this program include:

- MTA circulator bus/shuttle downtown between routes and services.
- Free bus rides.
- Provide complete sidewalk access to at least one school, insure safety and reward schools/student for participation.
- Hold mass transit scavenger event to test the connectivity of several areas in the city.
- Neighborhood and business connectivity and transportation challenge over the summer with winners and prizes.
- Safe Routes to Schools - MPNS Physical Education teachers are receiving an in-service day this summer to train them how to teach safe bicycle and pedestrian skills



to elementary students. Safe Routes to Schools can decrease the estimated 30% of morning traffic attributed to parents driving kids to school. The program encourages kids to walk and bicycle to school. Walking school buses and other techniques combat parental fears about safety. Result is reduced emissions, especially around schools, less traffic and healthier kids. The curriculum is complete, teachers will be trained. We just need to encourage schools to implement the program. Short term, 5-10 schools should regularly participate, Medium-term would be for all Metro elementary and middle schools to participate in the program.

- Bicycle Street Smarts - with more bicyclists on the roads, bicyclists and motorists need education to learn how cars and bikes legally share the road. A two-hour class has been developed by Walk/Bike Nashville to teach the essential safety skills for riding a bicycle on a street. The city, in the short term, could offer these classes with Walk/Bike Nashville instructors, who could train additional instructors. Very low cost.
- Complete Streets - Nashville should look at adopting Complete Streets policies to insure that moving forward the streets can accommodate all modes. The adoption of Complete Streets legislation is the short-term goal, the accompanying policy is the medium-term goal.

**5. Promote and Expand Existing “Alternate Transit” programs by Metro, Businesses and Organizations to Reduce Commuter Traffic and Congestion:**

Metro Davidson County currently has several different “alternate transit” options available to Nashvillians including the MTA bus system, the Music City Star rail system, shared ride services including van pools and car pools, and park-and-ride or park-and-walk options. (See Mid-Term Goal #5 for discussion of the need and desire for additional use of modes of “active transportation” in Metro Davidson County.) The existing options have been enhanced by a small group of employers and businesses including the State of Tennessee and Metropolitan Government offering park-and-ride options as well as Easy Ride bus passes for employees to travel to and from work.

Each of the existing “alternate transit” options decrease commuter traffic reducing congestion and vehicle miles traveled. However, there is a clear opportunity to expand these existing transit programs and increase their use through education of the public and engagement of the business community in promotion of the existing “alternate transit” options. The following are examples of some ways to expand and increase use of the “alternate transit” options in Davidson County:

- Develop a communication network to coordinate carpooling, ridesharing and “alternate transit” use.
- Develop a public relations and marketing campaign to teach benefits of using existing “alternate transit” options and lowering vehicle miles traveled, which might include competition between downtown businesses to lower their carbon footprints and incentives to businesses with employees that use “alternate transit” options.
- Provide transit price incentives and lower rates for monthly



riders or users.

- Review land use in and around downtown Nashville and identify vacant lots outside of downtown that may be used for Park-and-Ride and Park-and-Walk programs.
- Provide area businesses and organizations with “guide” to establishing shared ride programs and develop incentive program for employers who promote Park-and-Ride and Park-and-Walk programs.
- Increase the cost to drive downtown by taxing parking lots in downtown Nashville as developed property thereby generating additional revenue and increasing costs of parking downtown.
- Establish and collect a “commuter fee” on parking downtown, including parking lots, to encourage carpooling and shared ride services, the use of public transportation and Park-and-Ride/Park-and-Walk options.
- Work with area businesses and organizations to make Easy Ride transit passes available to all downtown employees.

Expected environmental and livability benefits include:

- Decrease in commuter traffic and congestion in downtown corridor thereby reducing pollutant emissions that affect human health including particulate matter, toxic organic compounds, nitrogen oxides and CO<sub>2</sub> and improving air quality.
- Improved public health via reductions in local and regional concentrations of pollutants and increased physical activity. People that receive transit passes are more likely to meet physical activity recommendations and less likely to become obese.
- Reduced transportation and health care costs for all Nashvillians.

Potential for revenue generation through:

- Increased ridership.
- Increased usage of “alternate transit” options such as ridesharing, park-and-ride and walk-and-ride lots.
- Fees and taxes associated with parking private vehicles in downtown parking areas.

**6. Utilize the latest and best, “state of the art” thinking and technologies in all mid term and long term planning for Metro Government Departments:** The goal is to ensure that Nashville’s approach to sustainability matches the scale of the problem. Across the nation our experience of road planning and building has taught us that today’s plans do not solve tomorrow’s problems and often contribute to creating bigger problems in the future. Nashville may do lots of good and useful things, but could do nothing that adds up to the scale of change that we actually need.

Striving, planning to achieve what other more advanced cities have accomplished is a recipe for failure. To reach their status will take many years, at which time they will have progressed and Nashville will remain behind. We need to look beyond conventional thinking and conventional solutions to ask what problems will remain in the future, what new problems to expect in the future, and plan to address the future today. Expected environmental and livability benefits are unlimited.

### *Mid Term*

**1. Establish an Environmental Policy and Sustainability Office (EPSO) as an independent permanent Metropolitan Government department with a board, director, staff and dedicated source of funding:** There is no question that local governments are on the front lines when it comes to dealing with climate change and environmental issues. If Nashville is to become the “greenest city in the Southeast” the government must commit resources and staff to establishing and supporting a permanent Environmental Policy and Sustainability Office (EPSO). The EPSO would provide Metropolitan Government with a clearing house for all department projects and budget requests as to impact on environmental standards and sustainability goals. It would also provide necessary oversight of department activities to ensure smart government and smart growth objectives are considered and addressed in all budget requests and projects.

This recommendation builds on Quick Win #1 by establishing the EPSO, initially housed in the Mayor’s office, as a permanent Metro Department or Agency with a Board, Director, Staff and source of dedicated funding. The EPSO could be expanded and made permanent by Charter Amendment with Metro Council support and/or possibly as part of legislation regarding environmental and sustainability requirements and goals for Metro Davidson County. By making the EPSO a permanent Metro department/agency we can expand services provided to Metropolitan Government and the community (discussed in Quick Win #1) as well as expand research and grant writing capabilities.

Expected environmental and livability benefits include unlimited including exceeding all federal environmental standards and





establishing serious commitment to being the “Greenest City in the Southeast.”

**2. Mandate a percentage of all related Metropolitan Government departmental budgets be set aside for “Active Transportation” projects and support:** Require a fixed minimum percentage of all related departmental budgets be set aside to fund alternate modes of transportation, raising the priority of sidewalks, bike routes and lanes, greenway multi-use paths, etc and insure that these alternate modes of transportation receive significant funding. A list of departments may include; Emergency Management, General Services, Metro Health Department, Metro Parks & Recreation, Metro Public Works and MDHA.

Bikeable and walkable communities:

- Reduce car crashes
- Promote exercise and thus reducing the risk of obesity
- Reduce vehicle-related air pollution
- Connect neighbors and promote social ties

**3. Work with MPO to implement mechanisms for dedicated funding for mass transit in order to establish a dedicated source of funding:** Lack of a dedicated funding source has been identified as the primary barrier to establishing an efficient, reliable and affordable integrated multi-modal Regional Transit System in Middle Tennessee. A dedicated funding source is necessary to establish the infrastructure required to support an integrated multi modal Regional Transit System in Nashville and Davidson County (see Long Term Initiative #1).

By working with the MPO to implement mechanisms for dedicated funding Nashville and Davidson County will acknowledge and recognize the importance of an integrated multi modal transit system to Nashville and Davidson County and the Middle Tennessee region for both economic and community development. Supporting dedicated funding will not only support Metro Davidson County’s long term commitment to sustainability and quality of life for all Nashvillians, but also publicly acknowledge the role and responsibilities of the regional and local governments in managing congestion and environmental quality in large urban areas.



Expected environmental and livability benefits are unlimited, but anticipated to include the following at a minimum:

- Increased opportunity to request and receive state and federal funds.
- Improved air quality through reduction in vehicle miles traveled and easing traffic/commuter congestion in and around the downtown area.
- Reduced carbon footprint for individuals and community at large.
- Increased connectivity between communities.
- Improved accessibility to healthy foods, employment opportunities, education options and health care services.
- Improved public health and awareness of environmental impact of actions.

**4. Affordable high frequency and high-capacity reliable trans-**

## portation options for every Nashville and Davidson

**County resident, employee, or visitor:** Provide significant, compelling alternative to driving, bring major redevelopment along transportation corridors close to existing services and corresponding efficiencies/savings and quality of life through implementation of a high-frequency and high-capacity transit service on fixed-routes connecting downtown Nashville with the rest of the region as part of an integrated, multi-modal regional transportation plan.

Focus would be on clean, reliable affordable transportation option for every Davidson County citizen, employee, or visitor. A regional mass transit system could expand transportation service and make Nashville more transit-friendly by phasing in transportation, land use, and urban design improvements in the major population corridors of the area including Murfreesboro Road, Lebanon Road, Gallatin Road, West End Road, Nolensville Road, Charlotte Avenue, Dickerson Road, Franklin Road and Clarksville Pike.

By developing and designing this system with a focus expanding alternative fuel/electric powered transit options in densely populated transportation corridors and activity centers, we will help to improve regional mobility, protect the environment, and spur economic prosperity by giving citizens more choices for travel -- breaking our high dependency on the private automobile in favor of transportation modes that are proven to be more efficient and less stressful for citizens. Even a modest shift from the personal automobile by those willing and able will result in improved air quality, increased transportation system capacity, and an overall rise in the area's quality of life. This is an important step in ensuring that every transportation corridor is served by Bus Rapid Transit and/or Light Rail Transportation supporting MPO's long term plans for a multi-modal regional transportation system for the greater Nashville region.

One of the most significant alternatives to roadway construction is to improve transportation capacity in the deficient corridor(s) with better transit options. Bus Rapid Transit (BRT) is an expansion of standard bus service into a system that emulates rail. BRT systems have similar right-of-way characteristics, stations, and capabilities as rail transit systems yet tend to cost substantially less than fixed guideway systems such as Light-rail.

Expected environmental and livability benefits (i.e., how it supports the goals) include:

- Reduction in greenhouse gas emissions
- Reduction in local emissions and health impacts
- Reduction in travel time during peak hours
- Increased economic productivity
- More equitable access throughout the city
- Reduced accidents and injuries

- Increased civic pride and sense of community
- Reduced emissions of air pollutants
- Reduced noise
- More sustainable urban form, including densification along major corridors
- Reduced cost of delivering services such as electricity, water and sanitation

## 5. Formalize a process to coordinate the development and implementation of “Active Transportation” projects including those related to greenways, sidewalks and bikeways:

Require annual joint review of projects in the parks and greenways master plan and the strategic plan for sidewalks and bikeways to ensure coordination. “A more diverse transportation system that provides viable choices to walk, bike and use public transportation, in addition to driving, will lead to a far more efficient use of transportation resources.” Nashville is ranked as one of the least walkable cities in the United States and Tennessee ranks as the sixth most obese state in the United States. As of now, over one-third of Nashvillians live within a one-half mile of a sidewalk, greenway or bikeway and if all of the “active transportation” projects already developed were completed almost 100% of Nashvillians would live within one-half mile of one of these projects. Many factors influence the choice of which mode of transportation to take. However, the availability of infrastructure and the safety of bicyclists and pedestrians are direct results of transportation policies and funding priorities.

Nashville and Davidson County is lucky to have a strong network of groups, agencies and organizations, both governmental and non-profit, committed to making “active transportation” or more specifically, walking and biking, a viable transportation option for Nashvillians. These groups work to not only raise awareness of issues and educate the public, but also advocate for safer walking and biking options for all Nashvillians. However, historically there has been no formal process or way for these organizations to coordinate their efforts to develop “active transportation” projects resulting in a lack of collaboration and implementation.

Nashvillians want and need transportation choices. When asked for their opinions on mobility issues in Davidson County, those who responded indicated that “active transportation” issues were the most important mobility issues facing Nashville and Davidson County. Specifically, making Nashville a “more bicycle friendly” and “more walkable” city were the identified as two of the top three mobility issues, while the need for implementation of a “multi-modal transportation plan” was the second most prominent issue identified in public meetings. Provided there are safe and viable alternatives to driving, many Nashvillians are likely to change their travel habits shifting short trips to bicycling and walking.



Expected environmental and livability benefits include:

- Bicycling and walking reduce driving, fuel consumption and congestion by: (1) directly replacing cars on short trips, (2) increasing the convenience of public transportation, and therefore, increasing ridership, and (3) stimulating local forms of compact, mixed-use development which results in destinations that are closer to each other, thereby shortening travel distance for all modes.
- Neighborhood walkability is linked to fewer per capita air pollutants and greenhouse gas emissions.
- People in walkable or bikeable neighborhoods drive less, decreasing vehicle miles traveled, congestion, and fuel consumption resulting improvement in air quality (meet or exceed NAAQS standards).
- Safe and accessible “active transportation” options are linked with being more physically active. Specifically, people in walkable neighborhoods encounter increased connectivity between residential and business communities and increased physical activity lowering the risk of obesity and health complications associated with the condition.



**6. Provide local transit and downtown circulator service; connecting service for residents, employees and visitors making trips within downtown by providing a convenient way for a mass transit user to reach their destination and a means of traveling between businesses and services while downtown, a Downtown Circulator achieves all the benefits of a mass transit system:** A downtown circulator is a necessary component of a successful transportation network providing transportation for that “last mile” between the “end of the line” of major transport systems and the passenger’s final destination.

### *Long Term*

**1. Design, develop and implement regional mass transit system to serve major population corridors and activity centers:** The transportation sector produces one-third of all greenhouse gas emissions in the United States.<sup>13</sup> Approximately 85% of transportation sector emissions are related to the surface transportation system. Recent studies indicate that Nashvillians drive an average of 35 miles per day (one of the highest rates in the nation) burning 1,000,000 gallons of fuel each day. Fifty percent of those daily trips are less than three miles. However, there is hope. Americans used public transit in record levels in the third quarter of 2008 according to a survey released in December by the American Public Transportation Association (APTA). Despite falling gas prices, public transit ridership increased by 6.5% over the same period in 2007, the largest quarterly increase in public transit ridership in 25 years. The upward trend is present across the country, while vehicle miles traveled on the nation’s highways declined 4.5% for the same period between 2007 and 2008.<sup>14</sup>

The need for an integrated Regional Mass Transit System is obvious and the desire for an integrated Regional Mass Transit System is clear. By working with the Metropolitan Planning Organization (“MPO”) to design, develop and implement a Regional Mass Transit System Metro Davidson County would provide high-frequency and high-capacity transit service on fixed routes, and where possible in fixed-guideways or dedicated lanes, connecting downtown Nashville with the rest of the region as part of an integrated multi-modal regional transportation plan.

The focus of a Regional Mass Transit Systems would be on clean, reliable affordable transportation options for every Davidson County citizen employee or visitor by incorporating bus rapid transit on dedicated routes, improved bus service routing and connectivity including a downtown Nashville circulator bus/shuttle and a light rail transportation system across the region. A Regional Mass Transit System would expand transportation service and make Nashville more transit-friendly by phasing in transportation, land use and urban design improvements in the major population corridors of the area including, but not limited to Murfreesboro Road, Lebanon Road, Gallatin Road, West End Road, Nolensville Road, Charlotte Avenue, Dickerson Road, Franklin Road and Clarksville.

13. Public Transportation Reduces Greenhouse Gases and Conserves Energy – The Benefits of Public Transportation, American Public Transportation Association (APTA), February 2008 (hereinafter “APTA, Feb. 2008”) citing Department of Energy, Energy Information Administration, 2007.

14. Public Transit Ridership Up, Investing in Upgrades Could Create Over 300,000 Jobs, Environmental and Energy Study Institute (EESI), [www.eesi.org/120808\\_transit](http://www.eesi.org/120808_transit)



By developing and designing this system with a focus on alternative fuel/electric powered transit options, we will improve regional mobility, protect the environment and spur economic development and prosperity by giving citizens more choices for travel – breaking our dependency on the private automobile in favor of transportation modes that are proven to be more efficient and less stressful for citizens. Even a modest shift from the personal automobile will lower vehicle miles driven and reduce carbon emissions resulting in improved air quality, increase transportation system capacity and result in an overall rise in quality of life by connecting Metro Davidson County citizens to their communities and each other.

As of 2010, Nashville Davidson County will not be able to meet the EPA National Ambient Air Quality Standards (NAAQS) for Ozone of .075 ppm thereby jeopardizing the health of our citizens as well as funding for public projects and economic development opportunities. A Regional Mass Transit System will reduce commuting patterns, vehicle miles traveled and fuel consumption improving air quality and helping Nashville exceed NAAQS standards. This system would increase connectivity of citizens to resources and accessibility of resources and services including healthy foods, health care, employment, education and beyond.

## **2. Implement plan to redirect “Pass Through” traffic from the downtown corridor:**

Studies indicate that the majority of motorized traffic utilizing Metro Nashville inner loop is not destined for Nashville, but is just “pass through” traffic on its way to another destination. This pass through traffic brings pollution, congestion and poor health to the residents of Davidson County. Of all the air pollution contributed by motorized vehicles in our area somewhere near 60-70% is the result of this pass-through traffic. A reduction in pass through traffic will likely be necessary to meet EPA Clean Air requirements. The most beneficial way to redirect this traffic is to remove sections of the existing inner loop of interstate, thus reducing air pollution, increasing safety, and improving quality of life.

Other methods include:

- Improve by-pass routes like Briley Parkway and SR 840 South.
- Provide disincentives to traveling through the core during peak commuting times. Disincentives could include truck-delivery restrictions, HOV lanes and HOV connectors to the local street grid, “commuter taxes” for non-Davidson County residents, pass through tolls and congestion pricing.

- Reconstruction of downtown routes to service local travel as the highest priority (including the removal of a section of Nashville inner loop).

Expected environmental and livability benefits included in removing the sections of the inner loop are illustrated by *The Plan of Nashville*. The attached section contains excerpts of that plan. The Mobility supplemental information document contains the balance of this material from *The Plan of Nashville*.

The main benefit to more links is the increased connectivity between neighborhoods and to the downtown, as well as new route possibilities for public transit, pedestrians, and bicyclists. Additional land for redevelopment also becomes available at the intersections of the links.

Most of the land within the interstate right-of-way returns to the neighborhood for private development as well as civic use. Pedestrian and bicycle mobility is enhanced through the reestablishment of pedestrian-scale streets. The neighborhood is also easier to serve with mass transit although this step does not necessarily provide dedicated right-of-way for mass transit.

For several years the American Lung Association has ranked Nashville as among the top 25 cities with the dirtiest air. “More Highways, More Pollution,” a 2004 study by the U.S. Public Interest Research Group, states that Nashville ranks second in the nation in highway capacity, and third in the number of miles driven per capita. Not coincidentally, the report found that Nashville leads the nation in pollution from cars and trucks per capita. Poor air quality contributes to asthma attacks, lung cancer and heart disease.”

Suppose, as the Plan does, that this land were redeveloped as three and four-story buildings mixing substantial amounts of residential with some office and retail uses—a total of around nine million square feet of space. A rough estimate of the aggregate value of construction would be \$1.3 billion in today’s figures.

Annual tax revenues to Metro on the “Spaghetti” site (referenced in *The Plan of Nashville*) alone would, at current rates, exceed \$20 million when built out. And that figure does not take into consideration the financial benefits of all that development money rippling through the economy, or the sales tax revenue generated by new urban residents spending their dollars in the city. “The obese interchange is a field of gold waiting to be mined.”

For more information visit: [www.nashville.gov/mayor/green\\_ribbon](http://www.nashville.gov/mayor/green_ribbon)





Studies indicate that the majority of motorized traffic utilizing Metro Nashville inner loop is not destined for Nashville, but is just “pass through” traffic on its way to another destination.

“Cities around the world are replacing urban highways with surface streets, saving billions of dollars on transportation infrastructure and revitalizing adjacent land with walkable, compact development.”

“Nashville ranks near the bottom in walkability according to Walk Score Walking matters.”

A walkable community promotes better health, reduction in greenhouse gases, more transportation options, increased social capital and stronger local businesses.”





*Protect our Environmental Assets*

# Natural Resources

Nashville is distinctive. We are a big city with a small town feel and it is the spectacular natural beauty of Davidson County that provides the structure for Nashville's overall appeal.

People are choosing to visit, move, and relocate businesses here because of our beautiful landscapes: the open spaces of diverse forests and pastures, the meandering Cumberland River that flows through the middle of the county with all of its feeder streams and headwaters scattered throughout our urban neighborhoods, the quality parks (Warner Parks, Shelby Bottoms, Radnor Lake, Beaman Park, Bells Bend and Percy Priest Lake), the numerous, rich historic sites, the old stone walls, the trees that shade our urban environments, and the rural communities of working farms, hay fields and grazing lands that exist less than a half hour drive from the state capital. If our goal is long term economic prosperity, then our path to that goal must be to preserve, restore and enhance what makes Nashville unique - culturally, historically and environmentally.

Economic development thrives on differentiation, on forging a unique community character to set ourselves apart from other communities. As cities around the country look more alike with ubiquitous subdivisions and big box stores, ever-present fast food chains, haphazard road building, and disconnected and shrinking natural areas, people and businesses looking to relocate search for places that are distinct with plenty of spaces and opportunities to recreate. Nashville and Middle Tennessee is the beneficiary of population growth exactly because it is so different from other places. If we do not act now to protect our critical environmental assets and quality of life, we stand poised to lose exactly what we value most, what makes us not only unique, but what makes us who we are.

This uniqueness is in real danger of disappearing. Nashville currently converts 42 acres of land per 100 new residents. This rapid loss of land has significant environmental, social and economic consequences that could be lessened with immediate implementation of progressive land use planning practices.

Residents and businesses want to maintain and enhance those qualities that make Nashville so livable: economic opportunity, quality growth, natural beauty and environmental quality, outdoor recreation, and broad involvement in community life.

In order to achieve sustained economic prosperity and quality of life, we must change the way we think about our natural resources Davidson County. We must plan for conservation in the way that we currently plan for development. Planning and economic development must align strongly with Nashville's environmental sustainability goals. This does not mean we cannot grow; on the contrary, it provides a clearer picture of how to grow and where to grow.

The accelerating culture of environmental sustainability in Nashville must include active stewardship of the natural gifts with which we have been endowed.



# Open Space



## GOAL: Develop and execute the most progressive Open Space Plan in the Southeast

Open Space is not empty, purposeless land. It has intrinsic value that is environmentally essential, economically significant and measurable. Open space provides direct benefits to human society through ground water storage, climate moderation, flood control, storm damage prevention, erosion control, and air and water pollution abatement. Loss of trees anywhere in a watershed increases local temperatures, energy use and rainfall runoff volume. When these benefits are not provided by open space, the public sector must pay for the man-made infrastructure to replace the functions of natural systems.

Goals for preserving the uniqueness of Davidson County:

- Protection of 50% percent of the existing rural land, and a minimum of a 20% expansion of the green spaces in the urban core by 2015.
- Preservation of 100% of existing agricultural land in Davidson County.
- For every four acres of development outside of the urban core, at least one acre must be set aside as a permanent natural area.
- Expand lands with recreational and educational value by fully supporting the parks master plan (to ensure 100% success of the goals for parks and greenways development).
- Identify and permanently protect 100% of lands that contain critical cultural and ecologic assets.
- Create a Metro Nashville Conservation Fund to help the county acquire and/or protect critical land.
- Execute the most progressive Open Space Plan in the Southeast.

## Recommendations:

### *Mid Term*

#### **1. Fund and hire a professional firm to develop an Open Space Plan for Davidson County with recommendations, and commit to implementing this plan on an aggressive timeline:**

The current economic downturn is an opportunity for Metropolitan Government to acquire and protect land at reasonable prices. The Open Space plan will allow Metropolitan Government to attract private individual and grant funding that is not currently accessible due to the lack of a master plan. This plan will also help bolster the Parks and Greenways plans and their potential acquisition targets. (The development of the plan should NOT slow down the existing efforts to acquire or protect land.)

This plan will provide a comprehensive view of the county's critical cultural and environmental assets and deficits, and identify a strategy to preserve and enhance these assets.

This plan would provide the county with a regional, county, and local view of these critical resources and would facilitate better conservation and development planning.

Open Space Plan Objectives:

- Develop a framework to define the county's land conservation priorities by the end of 2009.
- Achieve a complete inventory of open spaces (and each space's critical environmental assets) in the County 2009 by the end of 2009.
- Create a plan of action for executing the open space plan by early 2010.
- Commit to executing the plan by providing the necessary economic, political, and interdepartmental support.

# Land Use

## GOAL: Link land use planning with open space planning and transportation planning

Steps should be taken to link Land Use Planning with Open Space and Transportation Planning to focus development along the urban transportation corridors with the goals of increasing density within the urban core, preserving rural/non-urban lands, and conserving land between the transportation routes for ecological corridors. Metropolitan Government's Departments of Planning and Codes will plan for conservation in the same way they plan for development.

Specifically, planning should design with the following principles in mind:

- **Transit Oriented Development - TOD\***
- **Traditional Neighborhood Development - TND\***

## Recommendations:

### *Mid Term*

**1. Create a task force to incorporate Smart Growth principles into all of Metro's policies and goals, within the next 3 months (by June 2009):** This task force would report to the Mayor or his designee (if the "Office of Sustainability" is not yet realized). This task force should be comprised of, but not limited to the following stakeholders: Green Ribbon Committee- select members, Tennessee Chapter of U.S. Green Building Council, Cumberland Region Tomorrow, Cumberland River Compact, Land Trust for Tennessee, the Nashville Civic Design Center, Members of Nashville's Urban Land Institute, Metro Departments: Planning, Parks, Public Works (and Beautification), Water Services, MDHA, Health., MTA, MPO, MNPS, Codes and Building and Metro Council members.

The newly formed task force should have the following strategic priorities:

Create a Community Sustainability Plan to replace the General Plan. The Community Sustainability Plan should specify steps to provide an orderly and efficient transition from rural to urban land use including:

- Define an Urban - Rural Demarcation Line (URDL) that designates sufficient urbanizable land for future high density development needs. Note: Cities with plentiful water are twice as likely to sprawl as arid cities unless a growth management plan is in place.
- Identify and inventory urbanizable lands within the URDL to make development decisions more predictable.
- Direct development into the urban core, and along transportation corridors (throughout all subarea plans).

*\* see glossary for term definitions*







- Protect lands and critical environmental assets both inside and outside the URDL.

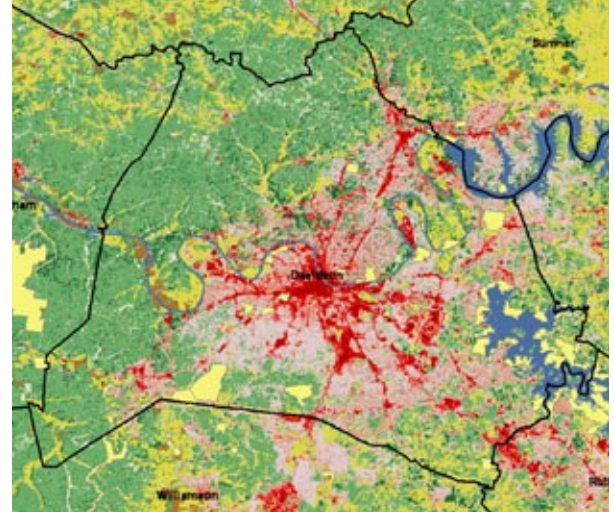
Work with Planning, Codes and other relevant departments to perform a comprehensive review of the existing codes and zoning ordinances to ensure alignment with Smart Growth principles.

Examples of improved policies are:

- Protect our existing natural lands by creating rural zoning categories with higher acreage requirements to prevent sprawl or leapfrog developments. (e.g. create a Rural Preserve or Resource Conservation Zone category that requires 25-50 acres per parcel). Downzoning is very controversial but results of studies reviewed showed either higher land value for the downzoned counties, or little to no appreciable effect on their land values. Instituting a URDL realistically only works when lands outside the URDL are simultaneously downzoned. Baltimore County MD has 68% of their lands in a variety of resource conservation zones (agricultural protection = 36% of county).
- In Davidson County we lack zoning categories that protect our remaining natural lands and critical environmental assets. Our two least dense zones are: AG (1 house per 5 acres) = 129 acres or 0.04% of county; AR2a (1 house per 2 acres) = 125,382 acres or 39% of county.
- Require all new or growing subdivisions to apply a conservation subdivision plan and allocate 20-30% of the most ecologically valuable, contiguous land as a natural area set-aside.
- Intensify infill and urban brownfield development, as well as Grayfield redevelopment by rezoning underutilized industrial or commercial land for residential and mixed-use development along urban transportation corridors. One way to expedite and encourage Brownfield development would be to develop a brownfield Inventory. The EPA has several grant programs that could be used to facilitate reuse of current Brownfields by removing the presence or perceived presence of contamination.
- Rezone areas along urban transportation corridors to include higher density and an increased mix of uses.
- Create strong disincentives and strict mitigation calculations for any development in a greenfield.
- Enact mandatory inclusionary zoning program to ensure that a share of newly created homes within the URDL are affordable for our diverse workforce (20-30%).
- Every variance proposal should be evaluated against Smart Growth principles and only granted if the variance improves the sustainability of a project.

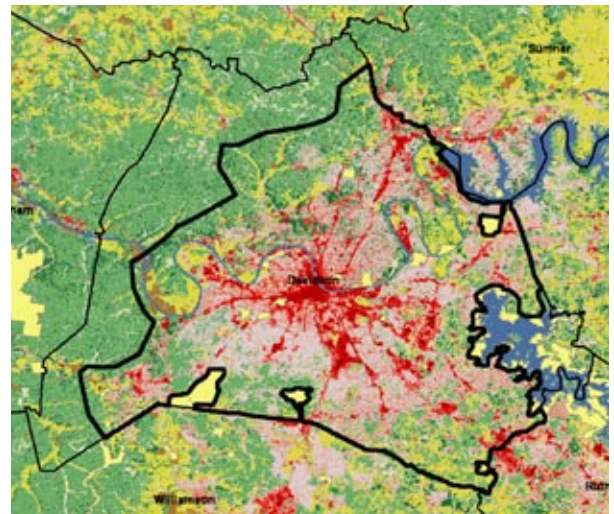
Map Key: Red = high density; pink = low density

## 2005 Land Cover = 230 sq. miles



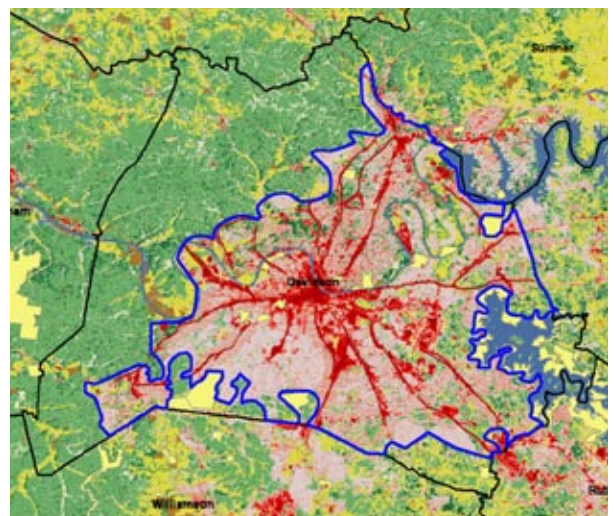
## 2025 Land Cover = 310 sq. miles

Current pace of converting at 42 acres



## Urban/Rural Demarcation Line

at 250 sq. miles





# Trees

## GOAL: Develop and maintain an urban forest program

An Urban Forest Management Program for Davidson County is needed to ensure an effective and efficient approach to realizing the myriad benefits that trees can provide to Nashville. Although many cities have robust urban forest programs, Nashville has not invested adequately in protecting and enhancing its urban forest. This is a missed opportunity because of the far reaching benefits that trees provide but also because Nashville has failed to capitalize on a key natural asset – the large amount of Davidson County land, relative to many other cities, that is non-urban and can support substantial tree canopy. Nashville’s dual task is: 1) to preserve the robust canopy that still covers some of its non-urban lands but is in danger of destruction; and 2) to enhance the more limited canopy that covers its urban and some of its suburban areas.

## Recommendations:

### *Quick Win*

**1. Delineate and Allocate Metro Tree Care and Maintenance:** Develop and implement a memorandum of understanding among Metropolitan Government agencies that delineates and allocates responsibility among Metro agencies for various tree-related activities. Authority over trees currently is distributed among various Metro agencies:

- Public Works: removes dead trees – does not plant trees and maintains trees only to eliminate safety problems.
- Codes: enforces Metro tree ordinance that applies to private commercial properties only.
- Parks: manages trees inside parks and at select sites on city streets.
- Development and Housing Agency and Metro Schools: responsible for trees on their properties.
- Nashville Electric Service: tree trimming and removal.

A memorandum of understanding would reduce the need for and transactions costs associated with making determinations, often on a case-by-case basis, with respect to which agency has responsibility in a particular situation.

In connection with the memorandum of understanding, the coordinating role of the Metro Tree Advisory Committee could be expanded. For example, an ex-officio seat on the Tree Advisory Committee could be created for each agency that has responsibility for trees (e.g., Public Works, MDHA, Schools, Parks, Water Services, Health Department, Planning, Codes). Each agency representative would attend monthly meetings, share information, and participate in developing and implementing a coordinated urban forest management plan.

Expected environmental and livability benefits include improved maintenance and increased planting of trees. The numerous benefits of trees are well-documented and include, but are not limited to, increased retail sales, property values, and energy savings, in addition to improvements in air

## 100 TREES PROCESS...

230,000 gallons of storm water

400 lbs. of ozone emissions

10,000 lbs. of CO<sub>2</sub>

300 lbs of particulates



quality, personal health, water quality, and wildlife diversity. In addition, trees are an important part of any climate change policy, as growing trees generally absorbs substantial amounts of carbon dioxide and the destruction of existing trees releases carbon back into the atmosphere. A preliminary assessment several years ago that used the American Forests’ Rapid Ecosystems Analysis indicates that the value of Nashville trees may be as much as \$3.6 billion a year.

### *Mid Term*

**1. Fund and perform a tree canopy assessment:** A tree canopy assessment provides a baseline for setting tree canopy goals. For example, an assessment or study would identify the percentage of canopy on different types of property and identify opportunities for planting trees (“plantable spaces”). The data obtained also can be used to set tree planting goals based on desired ecosystem services (e.g., plant these trees here to have the greatest impact on reducing stormwater runoff).

An American Forests 2003 Rapid Ecosystems Assessment for Nashville provides a preliminary indication of Nashville’s tree canopy. However, the study is now outdated and was not at the level of detail needed, according to stakeholders and Metro staff.



A tree canopy assessment is a principal building block in many cities' efforts to develop an urban forest management program, in part because it provides baseline data and enables a city to set canopy goals. Accordingly, a tree canopy assessment is a critical step in helping Nashville obtain, to the greatest extent possible, the myriad benefits that trees provide.

The numerous benefits of trees are well-documented and include, but are limited to, increased retail sales, property values, and energy savings, in addition to improvements in air quality, personal health, water quality, and wildlife diversity. In addition, trees are an important part of any climate change policy, as growing trees generally absorbs substantial amounts of carbon dioxide and the destruction of existing trees releases carbon back into the atmosphere. A preliminary assessment several years ago that used the American Forests' Rapid Ecosystems Analysis indicates that the value of Nashville trees may be as much as \$3.6 billion a year.

## 2. Develop and maintain an Urban Forest Program:

To develop and implement an effective program, Nashville should follow the lead of other cities and hire a new Urban Forester who can dedicate the time necessary to developing and implementing a comprehensive Urban Forest Management Plan for Davidson County. Currently, Metro employs an Urban Forester (often called an arborist/ tree inspector in other cities) in the Codes Department whose time is fully occupied by implementing and enforcing Nashville's tree ordinance, which imposes requirements on commercial developers. Urban Forester description:

Specifically, an Urban Forest Management Plan for Davidson County should be developed by 2012 that seeks to:

- Establish long term goals and objectives within specified time periods, including those to help achieve Mayor Dean's Climate Protection Pledge.
- Provide for tree maintenance (watering, removal, replacement, pruning, fertilization, insect and disease control) and tree plantings.
- Include sub-plans for specific urban forest resources – such as street trees and park trees.
- Identify, protect, and restore tree conservation areas.
- Outline comprehensive management strategies to maximize ecological services of healthy urban forest (e.g., stormwater control, air quality).
- Coordinate tree-related activities among all agencies.

In addition, the Plan should evaluate several specific initiatives for potential implementation.

These include but are not limited to:

- Tailored plans for individual Metropolitan Government agencies that plant and maintain trees, such as the Metropolitan Development and Housing Agency, MNPS,

and Nashville Electric Service that plant and maintain trees. These plans could set specific goals for each agency with respect to tree plantings and maintenance and establish new policies or initiatives that will enhance Nashville's tree canopy.

- Street tree standards for tree box design, pruning, tree protection during utility work and additional tree spaces.
- A program/code review that identifies potential barriers to forest conservation and tree planting hidden in local ordinances related to land development. In order to foster support for these changes, the review could be conducted as part of a multi-stakeholder roundtable-type process. A checklist for municipal program/code review is provided by the Center for Watershed Protection's website at: [http://www.cwp.org/Resource\\_Library/Better\\_Site\\_Design/index.htm](http://www.cwp.org/Resource_Library/Better_Site_Design/index.htm) (includes a set of 45 questions organized by topic).
- Partnerships with private, non-profit organizations, including the Tree Foundation (that works to recreate the City's urban forest in a variety of ways, including tree plantings), Trees Nashville (a new non-profit set up to partner with individuals, NGOs, and Metropolitan Government, and community groups such as the West Meade Conservancy (that is building an expanding collection of contiguous urban conservation easements on wooded hillsides). In addition, partnerships with environmental groups, such as the Cumberland River Compact, the Harpeth River Watershed Association, and Greenways Nashville, should be considered. Such public/private partnerships could leverage Metro resources in a manner similar to the Trees Atlanta initiative, which plants and maintains trees, or the Green Seattle partnership, which teams the City with the Cascade Land Conservancy to restore forested parkland. A U.S. Conference of Mayors' survey concluded that fifty-seven percent of 135 cities surveyed maintain formal partnership agreements with volunteer, nonprofit, or community groups to support the preservation and/or planting of trees.
- Expansion of the tree inventory that Mayor Dean has requested for the downtown area. Metropolitan Government staff and stakeholders seem to agree that the downtown area is the most important area to inventory at this juncture. However, because only the downtown, inner loop area will be covered (which does not include, for example, the Gulch or Hillsboro Village) several urban areas will be excluded, as will public property in other parts of Davidson County and private property. Ultimately, a comprehensive tree inventory (that can be based in part on sampling methods) that includes a database of tree location, species, and condition is critical to the development and implementation of a comprehensive Urban Forest Management Plan for the County that

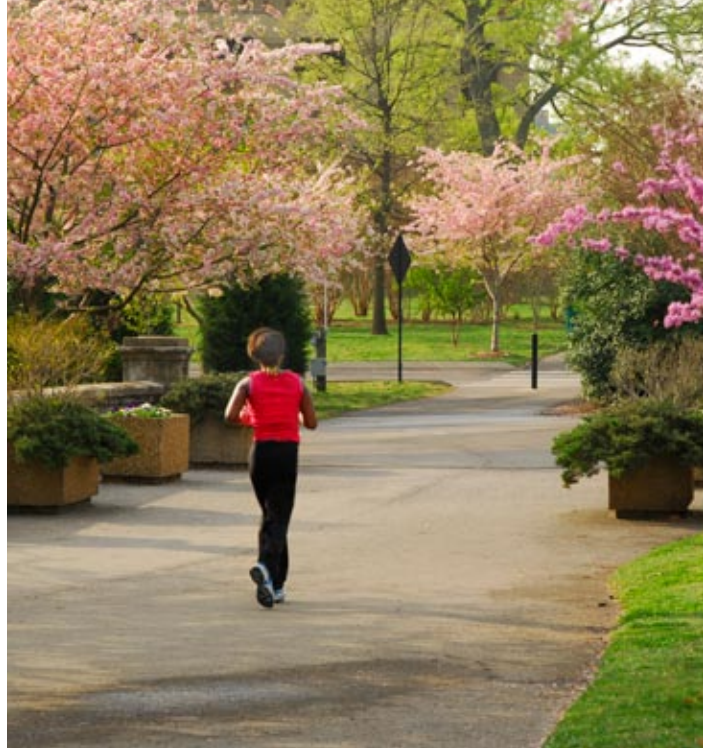


seeks to preserve existing forests.

- Requirements for maintenance of mature trees on private land similar to those imposed by many other cities, in an effort to protect what are often some of the most valuable trees. For example, Austin requires a permit for removal of any tree on private property that is larger than 60 inches in circumference. Atlanta requires that for every tree that is cut down, an equal amount of green area must be replanted. Specifically, trees less than 6 inches in diameter or trees that have died of natural causes or that are deemed dying or hazardous can be removed with a simple, free permit. However, healthy, safe trees over 6 inches in diameter require special permits and the owner must pay recompense to the City of Atlanta to be used for the planting of additional trees. There also is a two week waiting period to allow residents to dispute the cutting of the trees. A US Conference of Mayors' study found that of the eighty-five percent of 135 cities surveyed that have tree ordinances, 63 percent of the ordinances cover removal of trees from private property.
- Additional requirements for commercial and residential development similar to those imposed on developers in many other cities. For example, many cities have commercial and residential development requirements that are more stringent than Nashville's ordinances. These may require additional tree planting and maintenance plans that are monitored during and well past installation. The City of Austin's code requires proposed developments to demonstrate that trees are preserved to the maximum extent reasonable and feasible. "Tree preservation" covers root system preservation. The City of Frisco, Texas requires a minimum of 500 square feet of root space per tree to facilitate the growth of larger canopy trees in and around commercial areas. The town of Chevy Chase, Maryland, requires in connection with new development and construction the submission of a Tree Protection Plan that must be approved by the Town Council and that must meet the requirement that for each tree removed a new tree must be planted.
- Collaborative initiatives with the Tennessee Department of Transportation to plant and maintain trees in connection with street and highway construction and maintenance. For example, initiatives to explore could include adoption of "no mow" policies near streets and highways to enable trees to grow and dedication of a percentage of highway dollars for tree planting and maintenance.
- Public outreach and awareness projects that can supplement existing programs and communicate the need for an Urban Forest Management Program for Nashville and Davidson County and offer educational materials about the value of trees and how to care for them.

Expected environmental and livability benefits include the numerous benefits of trees are well-documented and include,

but are not limited to, increased retail sales, property values, and energy savings, in addition to improvements in air quality, personal health, water quality, and wildlife diversity. A preliminary assessment several years ago that used the American Forests' Rapid Ecosystems Analysis indicates that the value of Nashville trees may be as much as \$3.6 billion a year.







# Food and Farming

## GOAL: Develop a locally-based food system

An important component of a greener, more livable Nashville is the development of a locally-based, sustainable food system. Our city, and its leaders, will recognize the importance of, and help to build, a local food system that promotes environmental renewal, actively supports farmers by removing tax and zoning barriers to farming, fosters a local economy through the purchase and promotion of locally grown and raised foods, actively supports farmland and working farm preservation, strengthens the cultural ties between our rural and urban residents, provides a secure and reliable source of food, enhances the health of our children and citizens and assures equal access to nutritious foods for all Davidson County residents.

To achieve the above goal, the food and farming objectives will, by necessity, need to address the three parts of the food system:

### 1. Supply

- Increase sustainable fruit, vegetable and animal farms, farmers and food production in Davidson County.
- Survey current regional supply and demand through the development of a Middle Tennessee Food Shed Asset Map. Without baseline measurements, we can't evaluate our metrics over time.
- Ensure the right to farm is maintained in appropriate areas of Davidson County.
- Expand the number of community gardens and school gardens in Davidson County.
- Encourage family backyard gardens, rooftop gardens, edible landscapes, composting and commercial urban agriculture in the urban core and fruit and vegetable production, bee-keeping, dairy and egg production and animal husbandry in areas where appropriate.
- Remove zoning barriers to food production and sale in both urban and rural areas of Davidson County.
- Provide for property tax relief for small working farms within 3-15 acres.
- Increase economic opportunities through increased sales outlets for local farmers in Nashville.

### 2. Access

- Increase number of farmers markets in Davidson County and remove zoning barriers for farmers markets in neighborhoods.
- Increase local, fresh food availability in underserved neighborhoods, through farmers markets, Community Supported Agriculture (CSA) programs and neighborhood fresh food groceries.
- Remove zoning barriers to CSA drop off sights in neighborhoods.
- Increase and promote local food in grocery stores, farmers' markets, restaurants, institutions such as hospitals and schools and other food outlets.

### 3. Consumption

- Collaborate with community organizations, parents and MNPS to create a Farm to School program.
- Develop local purchasing guidelines and incentives for Metropolitan Government, businesses, universities, hospitals and families to purchase local foods.



# Recommendations:

## Quick Wins

### 1. Engage Metropolitan Government, our leaders and residents in the preservation and enhancement of urban and rural agriculture in Davidson County:

Such engagement will take many forms, including but not limited to:

1. Evaluation of all existing and potential farmland in urban, suburban and rural Davidson County for its food production potential with a goal towards preservation and protection, which could be accomplished in the proposed Open Space Plan.
2. Pro-active preservation of working, and potentially working, farms through funding assistance for conservation easement programs; the purchase of development rights; or the direct purchase of such lands to offer, with long to medium term lease agreements, to residents and farmers.
3. Review of all Metropolitan Government codes, ordinances and regulations to amend in such a way as to remove barriers and facilitate the development of urban agriculture. See attachment for examples.

Expected environmental and livability benefits include:

- Active preservation of farmland preserves the cultural heritage and identity of our county, by encouraging the production of local foods and community interaction through growing their own food.
- Placing value on the use of land for farming, as opposed to development, provides open space opportunities for neighborhoods and our remaining rural communities.
- Urban farming provides educational and community building opportunities for all residents, encouraging outdoor activities and healthier lifestyles.
- Supports our regional local farm economy through encouragement of local food production.
- Brings farming and sustainable food issues to city/county planning, development, zoning and community service departments.
- Addresses farming as a proper and desirable use of open space.
- Ensures continued growth of the number of farms supplying food to Nashville, increasing the city's food security, and reducing its carbon footprint.
- Provides opportunities for the development of agritourism.
- Increasing the amount of local food consumed and grown reduces Vehicle Miles Traveled for delivery, which

accounts for 11% of GHS associated with food production. Weber and Matthews note that by localizing food economies each average household could achieve a 4-5% reduction in GHG attributed to food delivery.

- Increased purchases of fresh foods have been shown to decrease the amount of money spent on processed, packaged foods. Packaged food uses resources for transportation, and in the creation of the package materials, which are often non-recyclable.
- Farmers and ranchers in the United States receive less than 20 cents of every food dollar that consumers spend on food. Purchasing food directly from a farmer, and supporting businesses that also buy from farmers, increases the percentage of dollars going to directly to farmers to between 60 and 100%.

## Mid Term

### 1. Initiate a planned strategy for city-wide Urban Agriculture by providing funding for a full-time Urban Agricultural Specialist to be hired by Metropolitan Government, or contracted out to a non-governmental organization.

This recommendation would:

- Enable Metro Government to hire a year-round employee, or source to a local agency, the responsibility of providing educational programming and resource information for community food gardens, Metro school gardens, backyard and rooftop gardens.
- Provide consistent training to communities, teachers and parents on beginning and maintaining a garden and compost bin; provide basic needs, such as seeds, soil and starter compost and compost bins (training program completion required); and be available for special educational programs and on-going support to the growing network of urban agriculture in Davidson County.
- Enable coordination of fresh food donations from community gardens and urban farms to area food banks.
- Provide incentives through training and start-up assistance for planting edible and sustainable landscaping throughout Davidson County. Educate residents, developers, businesses and government agencies on sustainable landscaping practices.

Participating in an urban garden can lead directly to solutions for our current chronic health crisis, which is caused primarily by poor eating habits and lack of activity. Hiring an urban agriculture specialist will send a strong and clear message that the development of urban agriculture, the promotion of sustainable farming and local food production,



and the consumption of nutritionally-dense and high quality fresh foods for our citizens and children are all important values to Nashville and Davidson County and its city leaders.

### *Long Term*

#### **1. Initiate a Metro led Farm to School program that incorporates locally grown fresh produce into the MNPS lunch program, with the development of a Middle Tennessee Food Shed Asset Map as an essential first step, followed by integrated educational programs on healthy eating and experiential educational programs on local farming and school gardens:**

Steps to a successful Farm-to-School program in Nashville and Davidson County include:

- Expedite funding and development of a Middle Tennessee Food Shed Asset Map which would survey existing Middle Tennessee produce, meat, dairy and egg farms (within 200 miles, for example) to determine where they are located, farm size, what they grow, how much they grow, who they currently are marketing to and how they are getting their product to market. This survey would provide us the necessary resource list to begin making the connections between farmers and buyers who are interested in purchasing food locally.
- Encourage and support school gardens for educational experiential learning.
- Incorporate farm field trips into the curriculum to regional fruit and vegetable farms, dairies, goat and cattle farms, bee-keepers and honey makers, and composters.
- Incorporate nutrition curriculum into Metro School requirements that connects experiential learning in the garden to healthy choices in the lunchroom and at home.



- Removal of MNPS policies and regulations that provide barriers to Farm-to-School Program development.
- Development of goals and policies by MNPS to encourage school gardens and local food procurement.
- Gradually incorporate locally sourced, fresh snacks, salad bars and eventually lunches into school nutrition services with the goal of increasing the percentage of fresh, local food served to all children in Nashville and Davidson County schools.

Expected environmental and livability benefits:

- Will significantly improve the nutritional quality of food choices for school-age children thereby improving concentration and school performance and decreasing childhood-onset obesity, diabetes and other diet related diseases.
- Will develop new markets for local and regional farmers thereby improving the viability of local farming, the preservation of farmland and the security of our food shed.
- Will increase knowledge and awareness of nutrition, food and farming.
- Long-term health care cost savings for obesity and nutrition-related chronic illnesses such as diabetes, heart disease and cancer.
- Increased participation in school lunch program, leading to increased revenue for student nutrition services.





# Water

## GOAL: Remove 100% of Davidson County's streams from EPA's 303(d) list by 2020

In Nashville and Davidson County, there are about 2,500 total miles of streams and currently 350 miles are on the 303(d) list of impaired waters. By 2020, 100% of the total stream miles will not be listed. It is an ambitious goal that will only be attained by a concerted effort by Metropolitan Government and citizens. It will take all of the other recommendations related to water made by the Green Ribbon Committee to achieve the goal (low impact development (LID), green infrastructure, stream buffers, full cost pricing, etc.). Currently the 350 miles of streams (70 segments) are listed as impaired for various reasons including pathogens, nutrients, siltation, and habitat alterations.

A new committee should be formed to study this goal and set milestones and more detailed objectives in achieving the goal. The committee should be made up of Metropolitan Government staff, nonprofit leaders, and citizens with knowledge and interest in making this goal a reality. Metro Water Services should have an important role in providing leadership and information.



## Recommendations:

### *Quick Win*

**1. Create a dedicated source of funding for stormwater:** Nashville needs to implement a long range strategy to deal with its stormwater problems by creating a dedicated funding source. Currently stormwater projects are funded by monies collected by Metro Water Services and supplemented out of the General Fund, resulting in the program to be underfunded, manifesting a slow response to problems and a backlog of projects.

A dedicated funding source is used by over 800 municipalities in the United States, many in Middle Tennessee, and it is recommended by the EPA. A dedicated funding source for stormwater is a prerequisite for securing other types of funding. The



funding could be generated by a stormwater user fee charged to residential and commercial properties in Nashville and Davidson County.

- Impervious surfaces generate stormwater; therefore, the fee will be based upon the amount of impervious surfaces on a property.
- Currently, the Stormwater Department is mostly funded from the General Fund and during the 2006 audit, the EPA strongly recommended that Metro Water Services establish a dedicated funding source for the Stormwater Department.
- A caveat requiring that all stormwater projects assess and mitigate their water quality impacts should be attached to the funding.
- A portion of the funding should also be directed to projects designed primarily to improve water quality.

A dedicated funding source will benefit the water quality in Nashville in many ways.

The funding will be used for capital improvement projects (CIPs) that would include stream stabilization and water quality treatment system installation. This will reduce both the in-stream sediment load and the pollutant loading to streams. Sediment is one of the most common causes of pollution in Nashville's streams.

A dedicated source of funding will allow the Stormwater Department to apply for grants for a variety of water quality projects. Currently, Stormwater does not have the guarantee of matching funds that most grants require.

The NPDES (National Pollutant Discharge Elimination System) Group of Stormwater would have the resources to hire a full time public education coordinator to inform the public about non-point source pollution and how human actions impact our waterways.

The Stormwater Group could continue buying properties (with the help of Federal Emergency Management Agency) that regularly flood and convert these areas to green space for the community. These preserved floodplains improve our environment and city by reducing pollutants loads to streams, stabilizing the stream banks, providing habitat to wildlife, and reducing downstream flooding.

The structure of the fee itself will also improve water quality and increase green space by encouraging a reduction of impervious surfaces. Businesses will additionally receive fee discounts for installing water treatment structures/areas on their properties.

## **2. Adopt full cost pricing for drinking water:**

Nashville needs to plan for the long term use of its water resources and infrastructure by implementing full cost pricing for water. The monies generated would allow Metro Water Services to meet its need of repairing and replacing infrastructure that is 100 years old in some parts

of the county and would ensure its proper functioning for generations. It would also encourage customers to conserve and more wisely use the precious resource.

Currently Metro Water Services does not charge consumers the real cost of providing clean drinking water and removing wastewater. Prices should change so that all costs, past, present, and future operations, maintenance, and capital costs, are factored into prices and rate structures.

Many of Nashville's impediments to higher water quality come from the fact that we can not fund the needed improvements that need to be made to our aging water and wastewater infrastructure. Some of the problem is that leaks in the infrastructure put nutrients and pathogens (125 miles impaired by pathogens) into our streams. But the leaks also mean that treated water is lost, leading to a loss in efficiency. Secondly, water customers in Metropolitan Government have little reason to conserve water because the price they pay has little to do with the actual cost to the city as a whole that has to be funded by other means (such as commercial water hook-up fees, etc.).

Metro Water will save a large amount of energy if water is conserved. It is currently the Nashville Electric Service's third largest customer. Savings will be gained by fewer gallons of water needing to be treated and pumped to consumers.

## ***Mid Term***

### **1. Rename Metro Water Services, the Department of Watershed Management:**

Metro Water Services Department is currently responsible for ensuring the availability of quality drinking water, treating wastewater, and managing stormwater issues. These are all important aspects of managing our watersheds. The change in name would more closely align the department with their true mission of being a steward of our watersheds and managing them as a unified system. The rebranding of the department will serve to educate the public about our watersheds and how we must be stewards of them.

### **2. Increase utilization of Low Impact Development (LID) techniques and encourage Better Site Design (BSD) on all new or significantly redeveloped sites in Nashville:**

Low Impact Development is a site design strategy that aims to mimic natural hydrology, with an emphasis on the infiltration of stormwater. Traditional stormwater designs are highly impervious and route stormwater immediately offsite or to a central location resulting in greater volumes of stormwater and pollutants reaching our streams. LID designs include green stormwater infrastructure such as bioretention, green roofs, conservation areas, permeable paving, vegetated swales, and stormwater harvesting.



It is recommended that the Metropolitan Government:

- Increase the utilization of Low Impact Development (LID) techniques and encourage Better Site Design (BSD) on all new or significantly redeveloped sites in Nashville.
- Require LID on all new private developments in Nashville. The requirement will be phased in based upon watershed imperviousness and 303(d) status.
- All new development and significant redevelopment Metropolitan Government projects will be required to utilize LID beginning July 1, 2009.
- Fifty percent of street repair and roadway redevelopment projects will be required to utilize the Green Streets model and all other projects will consider using it.
- All Metro departments will review their regulations and policies to remove any impediments to BSD. This includes, but is not limited to: reducing minimum street widths and lengths, reducing parking ratios, requiring permeable paving for some overflow areas, allowing roadside infiltration (not requiring curb & gutter), reducing sidewalk widths & both side of residential street requirement, reducing minimum cul-de-sac radius, limiting imperviousness of residential redevelopment, and ensuring water reuse is permitted.

Benefits to these measure include:

- Improved water quality from increased filtration and biological uptake.
- Reduced flooding and stream bank erosion.



- Increased groundwater recharge.
- Fewer sewer overflows into our streams.
- Increased greenspace and wildlife habitat.

**3. Improve protection of the watersheds in Davidson county by honoring the natural flood plain and stream buffers, which will result in improved water quality, acceleration of Nashville's Greenways system and myriad environmental benefits:**

Improve water quality and habitat protection, accelerate the creation of Nashville's Greenway system, encourage the further development of Blueways, and increase downtown economic development by focusing on improvements to our rivers and streams by:

- Changing zoning ordinances to disallow development in 100% of the floodplain (with the exception of walking or biking trails and educational buildings such as nature centers), with little variance option, in all land use categories.
- Require a minimum natural buffer of at least 50 feet for all water resources (streams, rivers, lakes, wetlands).

- Allow natural buffer to regenerate on Metro properties by not mowing and proactively restore where irreversible.
- Concentrate on more effectively using and preserving all of Nashville's streams but especially the Cumberland River.

Expected environmental and livability benefits include:

- A naturally vegetated riparian buffer comprised of the entire floodplain and an additional buffer (floodplain plus fifty feet) provides both environmental and livability benefits.
- Environmental benefits: pollutant removal, stream bank stabilization, ground water recharge, stream temperature moderation, animal and plant habitat protection and restoration, wetland protection, and food for aquatic organisms.
- Livability benefits: provides lands for future Greenways and pocket parks, more recreational access to (clean) water, decreased damages due to flooding, higher property values near conserved open space.



## GOAL: Meet and Outperform National Air Quality Standards

This goal can be met with strategic behavior and infrastructure changes which will lead Nashville to substantially reduce daily transit miles and improve fuel efficiency; lower overall energy demand and minimize peak energy spikes; and increase renewable energy usage and utilize advanced technologies for electrical power distribution.

Maintaining and enhancing Nashville's clean air will take significant changes in lifestyle and mindset of the local population as well as major infrastructure modifications to optimize the city's use of mass transportation and energy. Clean air is defined in many ways which are discussed in long-term goals, the defining criteria comes from the federal EPA which mandates compliance to limits set for six criteria pollutants. Currently Nashville is exceeding the federal criteria limit for Ozone and will be declared in Nonattainment during 2010. Subsequently the state of Tennessee will be required to submit a plan to mitigate ozone concentrations in the local atmosphere providing the genesis for Clean Air Goals.

The public must be informed and educated that their behavior is adversely affecting public health. Clean air can only come when a critical mass of the population changes their behavior as related to mass transit. Likewise, building owners and residents of Nashville must be informed and educated on energy usage and expectations for their contribution to meeting the goal.

Nashville currently burns approximately 1,000,000 gallons of petroleum daily to support 33 miles per day of driving per person. With population growth alone this usage rate will increase and begin to adversely impact public health and environmental conditions in the area.

Progress toward a healthier environment for Nashville can be measured simply as follows:

- Meet NAAQS Standards in 2015
- Outperform NAAQS Standards: Achieve 90% of NAAQS in 2020

Implementation Opportunities:

- Highly technical and expensive computer generated air models must be developed for the Nashville region to set specific transportation and energy reductions based on expected population increases and specific effects of many input variables such as meteorological transport and methods of energy production.
- Education of the general public as to their contribution to this growing issue will be critical.
- Regional agreements to reduce air pollution emissions must take place to make attainment possible.
- Voluntary programs such as tree planting, increased walking/biking, and smart growth land use will all contribute to attaining this goal.





# Recommendations:

## *Long Term*

**1. Meet & Outperform National Air Quality Standards with strategic behavior and infrastructure changes which will lead Nashville to substantially reduce daily transit miles and improve fuel efficiency; lower overall energy demand and minimize peak energy spikes; and increase renewable energy usage and utilize advanced technologies for electrical power distribution:**

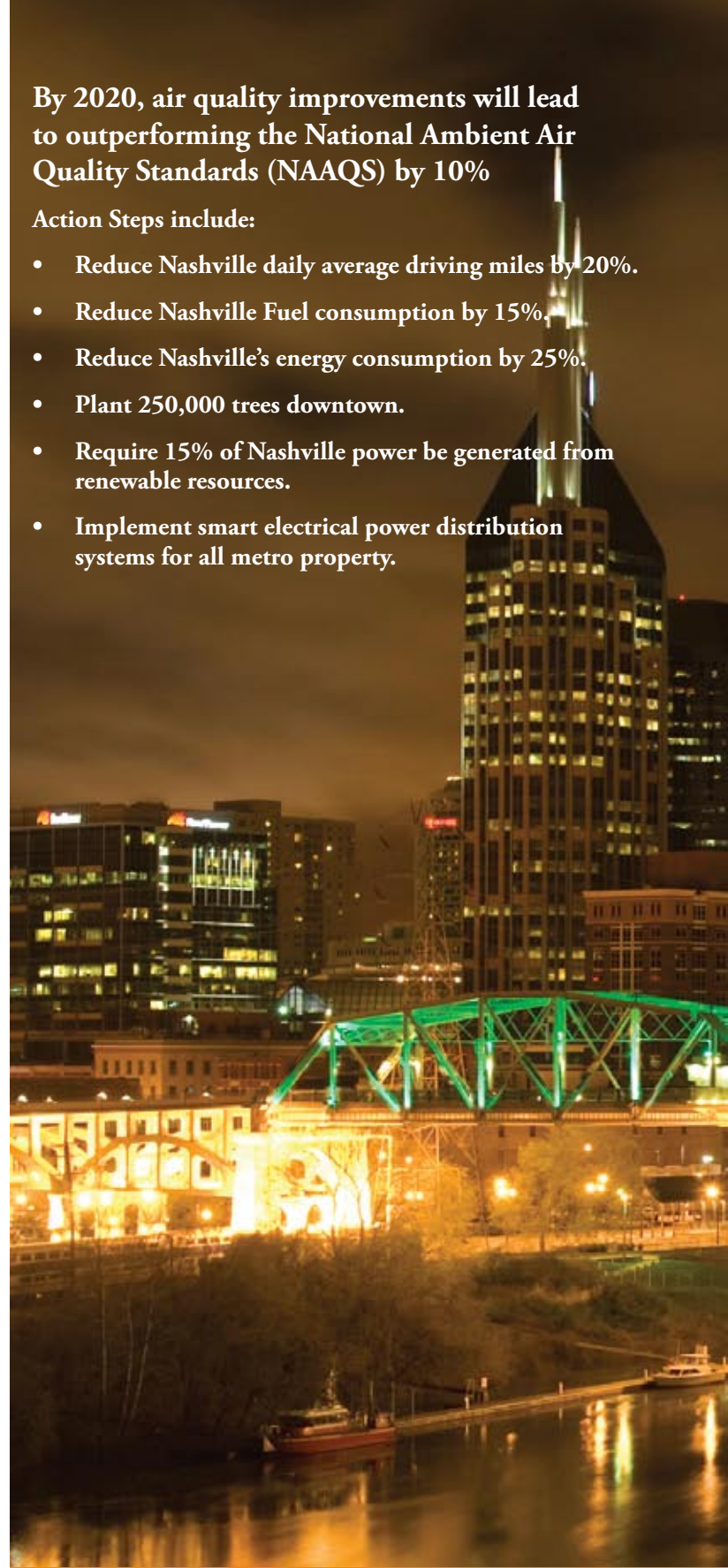
### Action Steps:

- Reduce Nashville daily average driving miles by 7% through improved mass transit, encouragement and support of walking/biking, and improved neighborhood designs and connectivity. Encourage metro employees to set the example with incentives. Implement a parking sales tax downtown to fund mass transit expansion. Support local groups in educating the public and advocating ride sharing, teleworking, and other methods to limit daily trips.
- Reduce Nashville's energy usage by 5% through programs aimed at reducing Metropolitan Government and targeted high user's consumption. Require LEEDs certifications (or equivalent) and specify energy savings products for metro construction/retrofit projects. Form a business/residential consulting group within the government to help businesses/homeowners reduce their energy consumption. Plant 100,000 trees in the metro area to help with cooling.
- Reduce Nashville's Peak Energy Loading by identifying and targeting high energy users to manage demand and lower requirements for the regional energy utilities to supplement peak loads with high energy electricity generating units (typically high pollutant generators). Generate a memorandum of understanding in the regional area to coordinate efforts on this front and possibly require more restrictive pollution control equipment on those units.
- Reduce Nashville fuel consumption by 5% through implementation of various metro led initiatives such as moving to a hybrid/fuel efficient fleets and encouraging like actions on the part of taxis and other fleet operators in the area. Consider adopting California style vehicle emissions limits once EPA approves.
- Advocate for State legal remedies on the Federal level to force reductions in meteorological transport of Ozone (and other criteria pollutants) to the Nashville area.

**By 2020, air quality improvements will lead to outperforming the National Ambient Air Quality Standards (NAAQS) by 10%**

### Action Steps include:

- Reduce Nashville daily average driving miles by 20%.
- Reduce Nashville Fuel consumption by 15%.
- Reduce Nashville's energy consumption by 25%.
- Plant 250,000 trees downtown.
- Require 15% of Nashville power be generated from renewable resources.
- Implement smart electrical power distribution systems for all metro property.



For more information visit:




[www.nashville.gov/mayor/green\\_ribbon](http://www.nashville.gov/mayor/green_ribbon)













# REDUCE GREENHOUSE GASES


**GOAL: Reduce Metropolitan Government's greenhouse gas emissions back to 2005 levels by 2012, reduce 20%**


- 1 Develop a multi-year Nashville themed campaign about the correlation between behaviors and greenhouse gas emissions. (page 14) 
- 2 Create a Nashville Carbon Offset program to fund specified local green projects designed to "offset" greenhouse gas emissions and help the city in reaching its emission reduction goals. (page 14) 
- 3 Require Metro agencies to incorporate climate protection criteria and actions into their planning activities, budgeting and performance measures. (page 14) 


# BUILD A CULTURE OF SUSTAINABILITY

**GOAL: Build a culture of sustainability**

- 1 Expand current Green Team and identify an "Environmental Steward" or "Green Team" for all Metro Departments to set and track environmental goals annually. (page 17) 
- 2 Require a "Green Education" component as a part of Metro's Human Resources training program, and encourage a similar program for teacher in-service. (page 17) 
- 3 Implement program at libraries to highlight environmental activities and books during a focused period of time (e.g., April as "Earth Month"). (page 17) 
- 4 Create a Green Business Roundtable and a "Green Your Business" education program, working with the Chamber of commerce, with the goal of Nashville buildings and businesses becoming green and healthy. (pages 13, 21) 
- 5 Establish a Metropolitan Government agency for environmental and sustainability policy with authority, accountability and funding (a board, director and staff) to keep a permanent focus on environmental/green issues. (pages 12,24,26) 
- 6 Develop a Green Jobs Training Program that would help Nashville's workforce be prepared to meet the demands of a growing green economy. (page 13) 
- 7 Adopt the Tennessee Pollution Prevention Partnership (TP3) program for Metropolitan Government's operational facilities (e.g., utilities, Police and Fire stations, health care, Parks, and Public Works). (page 17) 
- 8 Establish a sustainability education program for builders, contractors and developers. (page 21) 

 = Quick Win

 = Mid Range

 = Long Range

- 9 Establish a Center for Sustainability Education and Green Building Design as a public/private partnership that would showcase and provide education on green building practices. (pages 13, 22)

L

## GOAL: Establish a “green tourism” program with Nashville’s citywide emphasis on being green recognized as part of the city’s popular image

- 1 Establish a “Green Speakers Bureau” beginning with a core group of environmental leaders. (page 17)
- 2 Create a comprehensive website for promoting sustainability. (pages 16, 17)
- 3 Establish a wide-ranging green public relations and education campaign. (page 17)

Q

Q

M

## GOAL: Embrace and celebrate good examples of sustainable living

- 1 Create a “Green Neighborhood Program” that would foster a positive, competitive spirit among neighborhoods across the city to be cleaner and greener. (page 17)
- 2 Provide a “Green Operations Support and Education” fact sheet to everyone applying for a business license. (page 17)

Q

Q

## GOAL: Support and encourage environmental education in our schools to instill upon future generations a sense of love and responsibility for our natural resources

- 1 Appoint a curriculum coordinator within Metro Nashville Public Schools (MPNS) for conservation and environmental education. (page 17)
- 2 Include all MPNS in the Tennessee Pollution Prevention Partnership Program. (page 17)
- 3 Provide an outdoor classroom area for every Metro public school. (page 17)

M

M

L

## GOAL: All Nashvillians should actively connect with and care for our natural resources

- 1 Implement a Mayor’s “Green Note Leadership Award Program” for recognizing outstanding green leaders. Consider multiple award categories, such as churches, schools, neighborhoods and businesses. (page 17)

Q

# CONSERVE ENERGY, REDUCE WASTE, GREEN OUR BUILDINGS

## GOAL: Reduce energy use by 5% by 2012 and 20% by 2020

- 1 Implement a Mayor’s Environmental Pledge Program that would allow citizens to commit to taking five steps toward creating a healthier, cleaner environment for everyone. (page 19)

Q



- 2 Implement program at NES to switch from petroleum oil to soybean-based oil for transformers used city wide. (page 19) Q
- 3 Issue window stickers that provide free meter parking for clean technology vehicles. (page 19) M
- 4 Develop a Metropolitan Government sustainability program that incorporates healthy and efficient building practices (beyond weather stripping) into affordable housing practices. (page 19) M
- 5 Develop an Energy Use Reduction Policy for Metropolitan Government to conserve energy and encourage businesses to do the same. (page 19) M
- 6 Develop a Metropolitan Government Green Fleet program to expand the use of electric vehicles, hybrids and bio-diesel to help diversify energy supplies, decrease emissions and support regional economic activity. (page 19) M
- 7 Adopt an Advanced Metering Infrastructure (AMI) system for NES residential customers that would enable them to manage their energy consumption and conservation efforts. (page 19) L

## GOAL: Reduce waste in Davidson County by 35% by 2012 and by 65% by 2020.

- 1 Develop a plan to increase the number of recycling drop-off sites, especially in the General Services District. (page 20) Q
- 2 Provide incentives for private waste haulers to offer recycling collection. (page 20) M
- 3 Increase the number of downtown recycling containers for pedestrians. (page 20) M
- 4 Develop and implement a city-wide program for recycling construction and demolition debris. (page 20) M
- 5 Implement a food waste composting program for large producers of food waste. (page 20) M
- 6 Require business and industry to divert fiber, e-waste, yard waste, wood (e.g., pallets) and metals from landfills. (page 20) M
- 7 Provide recycling at all multi-family dwellings in the Urban Services District. (page 20) M
- 8 Ensure adequate and convenient recycling containers available at all Metropolitan Government buildings, city-owned sites and city-sponsored functions. (page 20) M
- 9 Implement a "Pay as You Throw" utility program for solid waste disposal in Davidson County. (page 20) L

## GOAL: Reduce environmental impacts of buildings through green building practices.

- 1 Establish a "Green Building Challenge" to publicize Metropolitan Government's green building practices and encourage Nashville's top 50 businesses to meet Energy Star by 2012 and LEED Existing Building (with a focus on water usage) by 2020. (page 21) Q

- 2 Provide private-sector green building incentives, including expedited plans and reviews, high-density bonuses and fee rebates. (page 22) (M)
- 3 Consolidate the operation and maintenance of most Metropolitan Government buildings, and create a new Metro energy manager position and use Energy Service Company (ESCO) to reduce energy. (page 21) (M)
- 4 Develop and implement a “White Roof” campaign encouraging businesses to paint or replace existing or new roofs with highly reflective ones. (page 21) (M)
- 5 Complete a solar installation at a high-profile public building in Nashville. (page 21) (M)
- 6 Adopt the Environmentally Preferred Purchasing (EPP) program for Metropolitan Government-wide consumables, durable goods, and equipment. (page 13) (M)
- 7 Retrofit 10 existing Metropolitan Government buildings to attain LEED Existing Buildings (EB) Silver certification, or comparable third party verified system, and initiate a program for retrofitting 50%. (page 22) (M)
- 8 All new public or publicly-funded buildings and building renovations should be LEED Silver certified or comparable third party verified system. (page 22) (M)
- 9 Encourage all new commercial and residential buildings to meet Energy Star by 2012 and LEED Silver certified or comparable third party verified system by 2020. (page 22) (M)

## EXPAND TRANSPORTATION OPTIONS

**GOAL: Provide every citizen with at least two modes of available and accessible transportation.**

- 1 All Metropolitan Government departments must consider state-of-the-art thinking and technologies in all mid-term and long-term planning. (page 26) (Q)
- 2 Promote and expand existing programs by Metropolitan Government, businesses and organizations to reduce commuter traffic, such as MTA’s EasyRide, van pool and car pool programs, and park and ride locations. (page 25) (Q)
- 3 Choose a highly visible and tangible mobility initiative, and complete it in 2009, such as offering classes on essential safety skills for riding a bicycle on the street. (page 24) (Q)
- 4 Working with the regional Metropolitan Planning Organization (MPO), generate support for enabling legislation to establish dedicated funding authority for mass transit in the region. (page 24) (Q)
- 5 Implement mechanisms to apply the new dedicated funding authority in support of mass transit, in coordination with other MPO members in the region. (page 27) (M)

Q = Quick Win

M = Mid Range

L = Long Range



- 6 Make mass transit and active transportation programs of MTA and other relevant Metro agencies and departments an integral part of the Metro planning and zoning process and formalize a process to coordinate and implement mass transit and active transportation projects. (pages 24, 28) M
- 7 Allocate a percentage of all related departmental budgets to be set aside to fund alternative modes of transportation, raising the priority of sidewalks, bike routes and lanes, and greenways. (page 27) M
- 8 Provide downtown circulator service to transport employees, residents and visitors to retail, restaurants, entertainment venues, parking and places of business within the downtown area. (page 29) M
- 9 Establish affordable high-frequency and high-capacity reliable transportation options for every Nashville and Davidson County citizen, employee or visitor. (page 27) M
- 10 Implement a plan to redirect pass-through traffic from the downtown corridor. (page 30) L
- 11 Design, develop and implement regional mass transit system to serve major population corridors and activity centers. (page 29) L

## PROTECT OUR NATURAL RESOURCES

### GOAL: Design and implement the most progressive open space plan in the Southeast.

- 1 Hire a professional firm to develop an open space plan for Davidson County with an aggressive timeline for implementation. (page 33) M

### GOAL: Link land use planning with open space planning and transportation planning.

- 1 Create a "Smart Growth Task Force" to develop a community sustainability plan that incorporates smart growth principles into Metropolitan Government's goals, policies, codes and ordinances. (page 34) M

### GOAL: Develop and maintain an urban forest program.

- 1 Develop a Memorandum of Understanding among Metropolitan Government agencies delineating and allocating tree planting, care and maintenance by Metropolitan Government. (page 36) Q
- 2 Fund and perform a tree canopy assessment. (page 36) M
- 3 Develop and implement an Urban Forest Management Plan. (page 37) M

## GOAL: Develop a locally-based food system.

- 1 Engage government leaders and residents in the preservation and enhancement of urban and rural farming. (page 40) Q
- 2 Initiate a planned strategy for city-wide urban agriculture by providing funding for a full-time urban agricultural specialist with the responsibility of providing educational programming and resource information for community food gardens, Metro school gardens, and backyard and rooftop gardens. (page 40) M
- 3 Implement a Metropolitan Government-led Farm to School program that incorporates locally-grown fresh produce into the MNPS lunch program with a Middle Tennessee foodshed asset map as an essential first step. (page 41) L

## GOAL: Move 100% of Nashville's streams off the federal 303(d) list of impaired waters by 2020 with measurable progress by 2012.

- 1 Adopt full-cost pricing for drinking water. (page 43) Q
- 2 Create a dedicated source of funding for stormwater control by implementing a stormwater user fee charged to residential and commercial properties in Nashville and Davidson County. (page 42) Q
- 3 Rename Metro Water Services, the Department of Watershed Management. (page 43) M
- 4 Increase the utilization of Low Impact Development (LID) techniques and encourage Better Site Design (BSD) on all new or significantly redeveloped sites in Nashville. (page 43) M
- 5 Improve protection of the watersheds in Davidson County by honoring the natural flood plain and stream buffers, which will result in improved water quality, acceleration of Nashville's greenways system and myriad environmental benefits. (page 44) M

## GOAL: Meet and outperform the national standards for air quality.

- 1 Meet the National Ambient Air Quality Standards (NAAQS) by 2015. By 2020, air quality improvements will lead to outperforming the NAAQS limits by 10%. (page 46) L



# Glossary

**Active Transportation** - Human-powered transportation such as walking and biking.

**Advanced Metering Infrastructure** - A “smart” meter that allows the utility to collect and monitor detailed energy use such as time of day, individual power circuits, etc for individual customers. Information can then be sent back to the customer to assist them in energy conservation measures.

**Alternative Fuel Vehicles** – Vehicles that use low-polluting, non-gasoline fuels such as electricity, hydrogen, propane or compressed natural gas, liquid natural gas, methanol, bio-diesel and ethanol.

**Alternative/Renewable Energy** - Energy generated from natural renewable resources such as solar, wind, geothermal, bio-diesel, etc.

**Alternative Transit** – Usually refers to mass transportation, carpooling, walking, biking or any type of transportation which doesn't include the automobile.

**Bus Rapid Transit (BRT)** - A broad term given to a variety of transportation systems that, through improvements to infrastructure, vehicles and scheduling, attempt to use buses to provide a more efficient service than a traditional bus line.

**CO<sub>2</sub>** – Carbon dioxide.

**CO<sub>2</sub> Equivalent (CO<sub>2</sub>e)** – A unit that converts emissions of different greenhouse gases of varied strengths so they can be added together or compared by calculating their comparative strength to CO<sub>2</sub>.

**Carbon Neutral** – Offsetting carbon dioxide emissions from everyday life such as driving and flying, by reducing consumption and utilizing alternative energy sources, so that there is no carbon footprint.

**Carbon Offset** – Carbon offsets allow purchasers to neutralize the carbon dioxide produced from their businesses and everyday activities – their “carbon footprint” – by supporting a variety of emissions reduction initiatives.

**Codes** – Metropolitan Department of Codes and Building Safety

**Community Supported Agriculture (CSA)** - A system in which consumers pay a farmer in advance for agricultural products.

**Congestion Pricing** – The practice of charging motorists more to use a roadway, bridge or tunnel during periods of the heaviest use.

**Dedicated Funding for Regional Transportation** – The allocation of money to fund regional transportation programs through by statute, charter, etc.

**Downtown Circulator** – A bus or transit system which circles the downtown area providing mass transportation, generally at frequent intervals.

**Ecosystem** - A collection of living things and the environment in which they live.

**Enabling Legislation** – Legislation that gives officials the authority to implement or enforce a law.

**Energy Service Company (ESCO)** - A business that develops, installs, and arranges financing for projects designed to improve the energy efficiency and maintenance costs for facilities.

**EnergyStar** - A joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy designed to help save money through energy efficient products and practices.

**EPA** – The U.S. Environmental Protection Agency

**Environmentally Preferred Purchasing (EPP)** - A program of the federal government to “buy green,” and in doing so, uses the federal government’s buying power to stimulate market demand for green products and services.

**E-waste** – Refers to various types of electronic equipment waste such as televisions, computers, mobile phones, etc.

**Farm to school programs** - Programs that connect schools with local farms with the objectives of serving healthier meals in school cafeterias.

**Food shed / Food shed asset** - Similar to the concept of a watershed: while watersheds outline the flow of water supplying a particular area, food sheds outline the flow of food feeding a particular area. Your food shed encompasses the farm, your table and everything in between.

**Full-Cost Pricing** – The practice where the price of a product is calculated on the basis of its direct costs per unit of output plus a markup to cover overhead costs and profits.

**General Services District (GSD)** – The expanded boundary of jurisdiction of the City of Nashville after the consolidation of the County and City.

**Green building** - The practice of creating healthier and more resource-efficient models of construction, renovation, operation, maintenance and demolition.

**Green Fleet** – A fleet of fuel efficient vehicles such as hybrids and biodiesels.

**Greenhouse Gas (GHG)** – Gases such as carbon dioxide, methane and CFCs that are relatively transparent to the higher-energy sunlight, but trap lower-energy infrared radiation, and result in a warming of the Earth’s atmosphere.

**Greenhouse Gas Inventory** – An accounting of the amounts and sources of emissions of greenhouse gases attributable to an entity such as a city, institution, business, etc.

**GRC** – Green Ribbon Committee

**HOV** – High occupancy vehicles

**Hybrid** – Term usually used to describe a vehicle that uses both an internal combustion and electric engine.

**ICLEI** – International Council of Local Environmental Issues, now officially titled “Local Governments for Sustainability” is a membership association of local governments committed to environmental sustainability.

**Impaired Streams** – Streams that do not meet water quality standards set by the US Environmental Protection Agency.

**LEED** - Leadership in Energy and Environmental Design (LEED) is a green building rating system that recognizes performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.

**Light rail** - high-frequency train service operating in mixed-traffic or in dedicated lanes, typically powered by over-head electrification system.

**Low impact development (LID)** - A landscaping approach that can be used to replicate or restore natural watershed functions and/or address targeted watershed goals and objectives.

**Metro Planning** – Metro Planning Department or Commission

**Metro Water** – Metro Water Services

**MNPS** – Metro Nashville Public Schools

**MTA** – Metropolitan Transit Authority

**MPO** – Metropolitan Planning Organization. A five-county regional planning body that reviews and approves transportation projects requiring federal funding.

**Multi-modal transportation system** - A general term that represents the variety of travel modes available including automobile, bicycle, foot, rail, transit, air, sea and any other way to travel from an origin to a destination.

**NES** – Nashville Electric Service

**National Ambient Air Quality Standards (NAAQS)** - Standards established by the U.S. Environmental Protection Agency for measuring outdoor air quality.

**Non-Motorized Transportation** – Similar to active transportation, non-motorized transportation includes walking, biking, etc.

**Open Space Plan** – A plan that outlines how a community will protect and preserve undeveloped land.

**Ozone** – A naturally occurring, highly reactive, irritating gas comprising triatomic oxygen formed by recombination of oxygen in the presence of ultraviolet radiation. This gas builds up in the lower atmosphere as smog pollution, while in the upper atmosphere it forms a protective layer that shields the earth and its inhabitants from excessive exposure to damaging ultraviolet radiation.

**Pass Through Traffic** – Unlike commuter traffic where vehicles are going from point to point within a city, pass through traffic refers to vehicles passing through a city to another destination.

**Pathogens** – Microorganisms (e.g., bacteria, viruses, or parasites) that can cause disease in humans, animals and plants.

**Pay as you Throw (PAYT)** - Systems designed to incentivize recycling and minimize waste as residents pay for municipal waste management and disposal services by weight or volume collected.

**Planning / Planning Department** – Metro Planning Department or Commission

**Regional Mass Transit** – Mass transportation such as bus, rail, car/vanpooling that focuses on the region and not just a city or county.

**Smart Grid** – A smart grid delivers electricity from suppliers to consumers using digital technology to save energy, reduce cost and increase reliability.

**Smart Growth** - A range of development and conservation strategies designed to protect the natural environment.

**Smart Metering** – A type of advanced meter (usually an electrical meter) that identifies energy use in more detail than a conventional meter; and can communicate that information via a network back to the local utility for monitoring and billing purposes.

**Stormwater** - The runoff that occurs from rain or snowmelt. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater runoff from naturally soaking into the ground.

**Sustainability** - According to the Environmental Protection Agency, sustainability means “meeting the needs of the present without compromising the ability of future generations to meet their own needs.”

**Transit oriented development (TOD)** – Emphasizes moderate to higher-density development, located within an easy walk of a major transit stop, generally with a mix of residential, employment and shopping opportunities designed for pedestrians without excluding the automobile.

**Traditional neighborhood development (TND)** – A planning system that includes a variety of housing types and land uses in a defined area. A TND usually includes a network of paths, streets and lanes suitable for pedestrians as well as vehicles. This provides residents the option of walking, biking or driving to places within their neighborhood.

**TP3** – Tennessee Pollution Prevention Partnership a program of the Tennessee Department of Environment and Conservation.

**Tree canopy** – Term used to describe the layer of leaves, branches, and stems of trees that cover the ground when viewed from above.

**Urban Services District (USD)** – The original boundaries of the City of Nashville prior to the consolidation of the County and City.

**Watershed** - The land area that drains to a stream, lake, river, estuary, wetland, aquifer, or even the ocean.

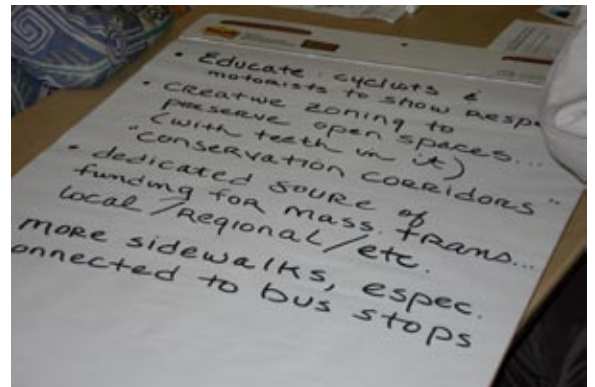
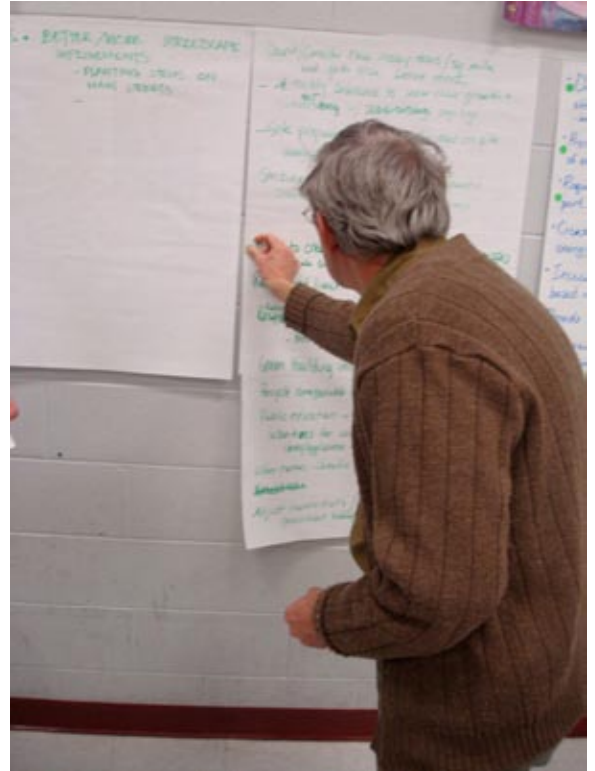
**Wetland** - Areas that are saturated by surface or groundwater that under normal circumstances support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

**White Roof** – A building roof which has been painted white or replaced with white roofing materials.

**303(d) List** – A list of the US Environmental Protection Agency of lakes and streams that do not meet water quality standards.



# Public Meetings



# Appendix A: Executive Order

## THE METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY

KARL DEAN, MAYOR

### EXECUTIVE ORDER NO. 033

*SUBJECT: Green Ribbon Committee on Environmental Sustainability.*

*I, Karl Dean, Mayor of the Metropolitan Government of Nashville and Davidson County, by virtue of the power and authority vested in me, do hereby find, direct and order the following:*

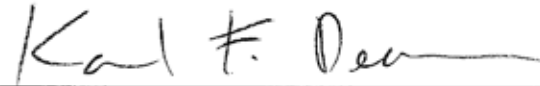
- I. A livable city has the clean air, clean water, open spaces, transportation infrastructure, and energy use profile necessary to provide a prosperous community for current and future generations.
  - II. In order to assure that Nashville continues to be a livable city, the Green Ribbon Committee on Environmental Sustainability (the Green Ribbon Committee) is hereby created and established for the Metropolitan Government of Nashville and Davidson County (the Metropolitan Government).
  - III. The Green Ribbon Committee will recommend environmental goals to the Mayor that will allow Nashville to remain one of the most livable cities in the United States.
  - IV. The goals identified by the Green Ribbon Committee shall be goals that will enable Nashville to become a leader in environmental quality and livability in the United States.
  - V. In addition to the goals, the Green Ribbon Committee will recommend an action plan to help achieve these goals.
1. Responsibility and Authority. The Green Ribbon Committee is charged with the following:
    - a. Recommending targets and accompanying metrics for 2012 and 2020 to measure progress toward the overall goal of ensuring that Nashville is a leader in environmental quality and livability in the United States;
    - b. Setting environmental quality and livability targets at levels that will ensure that the Metropolitan Government area and the Nashville and Davidson County region are leaders in the United States in the stewardship of our energy, water, land, and other natural resources and protection of the environment;
    - c. Continuing identification of environmental quality and energy use and cost trends that will affect livability in the Nashville and Davidson County region;
    - d. Ensuring Green Ribbon Committee's energy use reduction targets:
      - i. Will identify the ways the Metropolitan Government will accomplish its role in meeting the goal of reducing energy use;
      - ii. Are consistent with the U.S. Mayor's Climate Protection Agreement; and
      - iii. Consider regional economic development and transportation options.

- e. Developing strategies, programs, and policies for the Metropolitan Government, businesses, households, residents and neighborhood/community groups to achieve the specific environmental quality and livability targets;
  - f. Drawing upon the reports of recognized experts in the fields of energy efficiency and environmental sustainability and gathering input from the public through public meetings;
  - g. Considering the cost/benefit relationship of proposed actions and other relevant factors such as grant opportunities;
  - h. Facilitating public education and outreach;
  - i. Implementation of its recommendations that are approved by the Mayor; and
  - j. Coordinating the Committee's activities and recommendations to the extent possible with the Governor's Task Force on Energy Policy.
2. Composition. The Green Ribbon Committee will consist of a minimum of 11 members, including 2 appointed co-chairs, with a broad range of perspectives to be selected and appointed by the Mayor.
3. Terms and Meetings.
- a. Members of the Green Ribbon Committee shall serve for (one) 1 year and shall continue in office until the expiration of the term for which they were respectively appointed or until reappointment or until such time as their successors are appointed.
  - b. A vacancy shall be filled in the same manner as a regular appointment and the person appointed shall serve the remainder of the term.
  - c. The Mayor may determine a position is vacant based upon failure to attend meetings regularly.
  - d. Members of the Green Ribbon Committee shall serve without compensation.
  - e. In addition to the co-chairs appointed by the Mayor, the Green Ribbon Committee may elect such officers it finds necessary and appropriate.
  - f. The Green Ribbon Committee shall hold regular meetings not less than quarterly.
    - i. The regular meetings will be held at a date, time, and place to be determined by decision of the Co-Chairs. Special meetings may be called by the Mayor.
    - ii. A quorum for approving decisions by the Green Ribbon Committee shall consist of a majority of the currently filled positions on the Committee.
4. Reports. The Green Ribbon Committee shall deliver periodic reports and make recommendations to the Mayor not less than annually.
5. Departments Covered. Departments, boards and commissions of the Metropolitan Government shall fully cooperate with the Green Ribbon Committee in carrying out the mandates of this Executive Order and shall provide assistance as requested.



6. Environmental Sustainability Manager. An Environmental Sustainability Manager appointed by the Mayor shall:
- a. Organize and facilitate meetings and activities in conjunction with the co-chairs;
  - b. Work with departments, boards and commissions of the Metropolitan Government on their environmental goals and progress;
  - c. Work with the private sector on incentives and outreach programs to encourage green practices;
  - d. Prepare drafts of reports;
  - e. Apprise the Mayor regularly on progress, and
  - f. Perform other such related duties as determined by the Mayor.

ORDERED, EFFECTIVE AND ISSUED:



---

Karl F. Dean  
Metropolitan Mayor

Date: 6/19/08

# Appendix B: Subcommittee Rosters

## Green Ribbon Committee Co-Chairs

John R. Ingram - Chairman of Ingram Industries Inc.

Randy Lowry - President of Lipscomb University

## Public Involvement, Education and Outreach

Gary Gaston\* - Design Studio Director, Nashville Civic Design Center

Greer Tidwell\* - Director of Environmental Management, Bridgestone Americas Tire Operations

Laurel Creech – Director, Team Green

Tom Hardin - Retired, Resident of Historic Edgefield

Jamie D. Isabel, Sr. - President and Founder, Dalmatian Creative Agency, and former Metro Council Member

Diane Neighbors - Vice Mayor, Metropolitan Government of Nashville and Davidson County

Rose Wang – Chair, Mayor’s Youth Council, and Student, Martin Luther King Academic Magnet School

## Energy and Building

Decosta Jenkins\* - President and CEO, Nashville Electric Service

Tiffany Wilmot\* - President, Wilmot Inc.

Anne Davis – Chair, Mayor’s Advisory Committee on Environment

Diane Miller Mulloy – President, Milagro Biofuels

Mike Pearigen – Attorney, Farmer and Luna PLLC

Dave Pelton – President, Trust for the Future

## Natural Resources

Alicia Batson, M.D.\* - Owner and Market Grower, Hungry Gnome Farm

Michael Blosser\* - Vice President of Environmental Health and Safety, Louisiana Pacific

Linda Breggin - Senior Attorney and Director of Southeast Environmental Programs, Environmental Law Institute

Doug Hausken - Executive Director, Cumberland River Compact

Ellen Jacobson, M.D. - Dermatologist

Jean Nelson - President and Executive Director, Land Trust for Tennessee

## Mobility

Skip Lawrence\* - Chief Managing Officer, Lawrence Bros., LLC

Jennifer Hagan-Dier\* - Assistant Commissioner, State Department of Revenue

Lawrence Jackson - Retired, formally President and CEO of Global Procurement, Wal-Mart

Bert Mathews – President, The Mathews Co.

Steve Turner – Principal, MarketStreet Enterprises

David Williams - Vice Chancellor for University Affairs and Athletics, General Counsel, Secretary of the University and Professor of Law, Vanderbilt University

\*Subcommittee Co-Chairs

## Appendix C: Committee Work Process

**Meetings and Tours:** Green Ribbon Committee members assembled as a group for the first time in July of 2008, and full Committee meetings were held each month thereafter. In beginning their work, the group heard from nationally recognized experts, Metro department heads and staff, and went on several informational tours throughout the city, including the new Shelby pedestrian bridge and greenways tour, a tour of a Metro Water Services treatment plant, Vanderbilt Commons LEED gold campus, and Nashville's recycling facility, QRS.

In August of 2008, the Committee's 2nd meeting, Metro departments with environmental mission and responsibilities presented overviews of their work, the challenges they face, and some of the best environmental practices and policies adopted by other cities. Department presentations at this meeting were made by:

- Rick Bernhardt, Executive Director, Planning Department
- Paul Ballard, Chief Executive Officer, Metropolitan Transit Authority
- Terry Cobb, Codes Director, Codes Administration
- Veronica Frazier, Executive Director, Metro Beautification Commission
- Jim Snyder, Senior Engineer, Metro Public Works
- Scott Potter, Director, Water Services Department
- Jeff Themm, Director, Nashville Farmers Market
- Phil Ryan, Executive Director, Metro Development and Housing Agency
- Bob Parrish, Metro Parks and Recreation
- Nancy Whittemore, Director, General Services Department
- Dr. Bill Paul, Director of Health, Health Department
- Rose Wang, Chair of the Mayor's Youth Council and Student at MLK High School
- Terry Cobb, Director, Codes Administration

Early in October, the Green Ribbon Committee formed subcommittees to consider possible actions that the city could take to be a leader in environmental action and livability in four areas identified in the Executive Order: Education & Outreach, Building & Energy, Mobility and Natural Resources.

Each of the four subcommittees was asked to narrow its recommendations to:

- A small set of overall goals with targets for 2012 and 2020
- 6 "Quick Wins" that have little or no cost.
- 6 Mid-term priorities which would likely require some budgetary support.
- 2 Longer-term initiatives which may require extensive planning, development and/or funding.

The subcommittees conducted their work in three phases:

- Phase 1 (October 2008): Collection of information and research
- Phase 2 (December 2008): Issue identification phase
- Phase 3 (Late January – March 2000): Recommendations and reporting

**Screening Principles:** In evaluating potential recommendations, subcommittees used screening principles which included the following:

- Executive Order #33, Green Ribbon Committee on Environmental Sustainability. Would this recommendation/proposal enhance Nashville's status as a leader in environmental quality and livability among cities in the Southeastern U.S.?
- U.S. Mayor's Climate Protection Agreement: Does the recommendation assist Nashville in meeting requirements of this agreement?



- Public Input Received by the Subcommittee: Is the recommendation consistent with input from Metropolitan Government Departments, citizens, and community organizations; research of best practices in other cities; and the knowledge and expertise shared by committee members and hundreds of subject matter experts (see list below).
- Studies and Rankings: Consideration of national studies and rankings such as the Brookings Institution Report which ranked carbon footprints of the largest 100 Metro areas (May 2008), Sustainlane, and Nashville's greenhouse gas inventory.

Green Ribbon Committee meetings were open to the public, and invitations were made to individuals and subject matter experts in the community to provide the Committee with information on work already completed, underway, and planned for the city. Those individuals were also asked to communicate to the Committee goals within the scope of their work for Nashville's environmental excellence.

**Presenters and Advisors:** The following individuals served as expert presenters and advisors to the Green Ribbon Committee:

**Green Ribbon Committee (Full Committee)**

Jim Hartzfeld, Founder and Managing Director,  
Interface Raise

Congressman Jim Cooper, U.S. Representative, 5th  
District

Theresa Costonis, Attorney, Metropolitan  
Government Nashville and Davidson County

Roe Elam, The Tennessee Fund for Sustainability

Michael T. Lesnick and Ann Olsen, Meridian  
Institute

Anna Wilson, Jazz Recording Artist, Transfer  
Records

Zac Koffler, Louis Levin Management - Music  
Industry

**Energy & Building**

Matt Saperstone, Governor's Energy Task Force

Spencer Hissan, Health Department -Greenhouse  
Gas Inventory

Jim Purcell, NES-Energy Efficiency

Sharon Smith, Metro Public Works-Recycling

Mark Tyndall, QRS-Recycling

Bruce Wood, BURNT-Waste Disposal and  
Recycling

Tony Viglietti, NES-Geothermal Initiatives

Steve Johnson, Johnson Consulting-Solar Panels

Susan Ross, TVA-Renewable Energy and Energy  
Diversification

Justin Southwick, Wilmot, Inc.

Terry Cobb, Metro Codes Administration

Sharon Force, Granbery Elementary School

Mike Leonard, Thomas Miller Partners

Ken Scalf, AEC

Forrest Foorster, Graduate Student

Laura Fiffick, Gresham Smith-Greenhouse Gas  
Inventory

Michael Vandenberg, Vanderbilt: Professor of  
Law, Co-director, Regulatory Program, Director,  
Climate Change Research Network

**Education & Outreach**

Leslie Speller-Henderson, Tennessee State University

Michelle Lane, Director of Diversity Business  
Initiative

Brady Banks, Director of Mayor's Office of  
Neighborhoods

Jim Deming - Interfaith Power & Light

Julie Berbiglia - Metro Public Works Recycling

Jennifer Hackett, Vanderbilt University Recycling  
Coordinator

Laura Hansen, Office of the Mayor

Vera Vollbrecht, Metro Parks Warner Nature Center

Donna Nicely, Nashville Public Library Director

Jennifer Barrie, Kilowatt Ours

Jennifer Hagan-Dier, Assistant Commissioner  
- Tennessee Department of Revenue; Department of  
Economic & Community Development – Liaison

Billy Leavell, Turf Managers – Owner

Walt Vernon, Mazzetti Nash Lipsey & Burch, CEO

Judith Hill, Nashville Chamber of Commerce

Terry Clements, Nashville Convention & Visitors  
Bureau

**Mobility**

Paul Ballard, Metro Transit Authority

Michael Skipper, Metropolitan Planning  
Organization

Shain Dennison, Greenways Department  
Toks Omishakin, Metro Planning Commission  
Jim Snyder, Metro Public Works  
Leslie Meehan, Metropolitan Planning Organization  
Eddie Davidson, Mayor's Office

Ann Hammond, Metro Planning Commission  
Billy Lynch, Metro Public Works  
Veronica Frazier, Metro Public Works  
Joe Edgens, Metropolitan Nashville Public Schools  
Chris Armour, Tree Advisory Council  
Heather Langford, Sustainable Solutions Group  
Jennifer Smith, Tennessee Urban Forestry Council  
Becky Taylor & Melissa Stevens, Clean Air Partnership of Middle Tennessee  
Sean Davies, Walk/Bike Nashville  
Dorene Bolze, HRWA  
Cassi Johnson, Food Security Partners of Middle Tennessee  
Margaret Smith, American Lung Association of Tennessee (ALA)  
Joey Woodward, Tennessee Department of Environment and Conservation (TDEC)  
Daniel Boone – Tennessee Scenic Rivers Association  
John Noel - Southern Alliance for Clean Energy

### **Natural Resources**

Scott Potter, Metro Water Services  
Sonia Harvat, Metro Water Services  
Audra Ladd, Land Trust of Tennessee  
Randall Lantz, Department of Parks and Recreation  
Curt Garrigan, Department of Parks and Recreation  
Bob Parrish, Department of Parks and Recreation  
Vera Vollbrecht, Department of Parks and Recreation  
Shain Dennison, Metro Greenways Commission  
Robert Brandt, Greenways for Nashville Board Member, Greenways Commission  
Rick Bernhardt, Metro Planning Commission

# Acknowledgements

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## Appendix D: Metropolitan Government “Green Team”

In conjunction with the Green Ribbon Committee, a Metro Department internal “Green Team” was organized with representatives from 10 Metro Departments with environmental responsibilities: Metro Codes Administration, Nashville Farmers Market, General Services, Health, MDHA, MTA, Parks and Recreation, Planning Commission, Public Works, and Water Services Department. Metro Department Heads appointed staff for this group in late July and the group held its first meeting in August 2008. Mayor Dean attended the second meeting in September 2008 and discussed the dual role this group has with respect to both the Green Ribbon Committee and to their respective departments in keeping each apprised of the other’s needs and activities.

The Metro team is charged with both providing staffing and information/research assistance and department input to the Green Ribbon Committee members as well as keeping their departments apprised of Committee process, status, and output. The following “Green Team” members and more individuals supported work of Green Ribbon Committee subcommittees:

Sonia Harvat, Water Services  
Craig Owensby, Metro Planning Commission  
James McAteer, MTA  
Michael Skipper, MPO  
Toks Omishakin, Metro Planning Department  
Scott Adams, Metro Planning Commission  
Denise Weyer, Metro Parks and Recreation  
Rebecca Dohn, Metro Water and Sewer  
Marne Duke, Farmer’s Market  
Fred Huggins, Metro Health  
Billy Fields, Metro Codes Administration  
Veronica Frazier, Metro Public Works  
Dianna Stephens, General Services  
Michael Hunt, Metro Water and Sewer  
Angie Hubbard, MDHA  
Spencer Hissam, Metro Health Department



A priority identified by Green Ribbon Committee members was the need to identify, support and build upon environmental efforts already initiated or planned within the community and also within the Metropolitan Government. In November 2008, the Green Ribbon Committee asked Metro departments with environmental responsibilities to submit ideas that would benefit Nashville’s livability through a Metro Department Input Survey. The Metro Green Team compiled and submitted to Green Ribbon Committee members during their research phase over 30 quick wins, mid-term, and longer-term bold items toward the greening of Nashville.

The “Green Team” is in the process of expansion to include representatives throughout Metropolitan Government to ensure focused enterprise-wide efforts as the greening of Metropolitan Government’s own operations as well as the greening of the Nashville and Davidson County community continues.



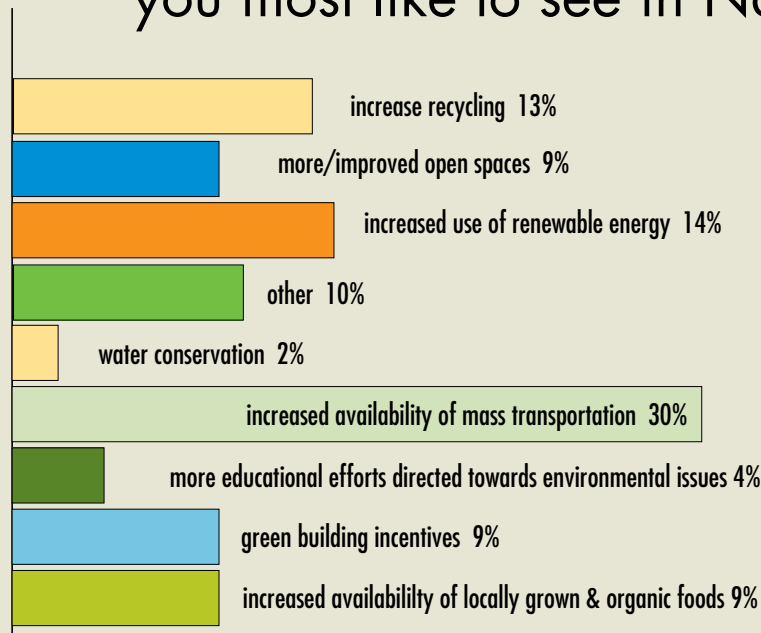
# Appendix E: Citizen’s Environmental Survey and Public Workshops Summary

On the day Mayor Dean signed the Executive Order creating the Green Ribbon Committee in June of 2008, a citizen survey of environmental priorities was launched on a newly created Green Ribbon website on [www.Nashville.gov](http://www.Nashville.gov). By December, over 1,800 citizens had responded to provide their opinions on what would make Nashville more sustainable and what they, as citizens, were willing to do to support a more sustainable Nashville. Survey participants were asked what single sustainable practice they would like to see in Nashville. The top 3 priorities resulting from the on-line survey were:

- more mass transit options offered in the city (30%)
- increased use of renewable energy (14%)
- increased recycling (13%)

Over 80% of respondents stated they would be interested in being involved with the environmental efforts of the Metropolitan Government and many provided their email addresses for continued participation.

## What single sustainable practice would you most like to see in Nashville?



### Public Meetings:

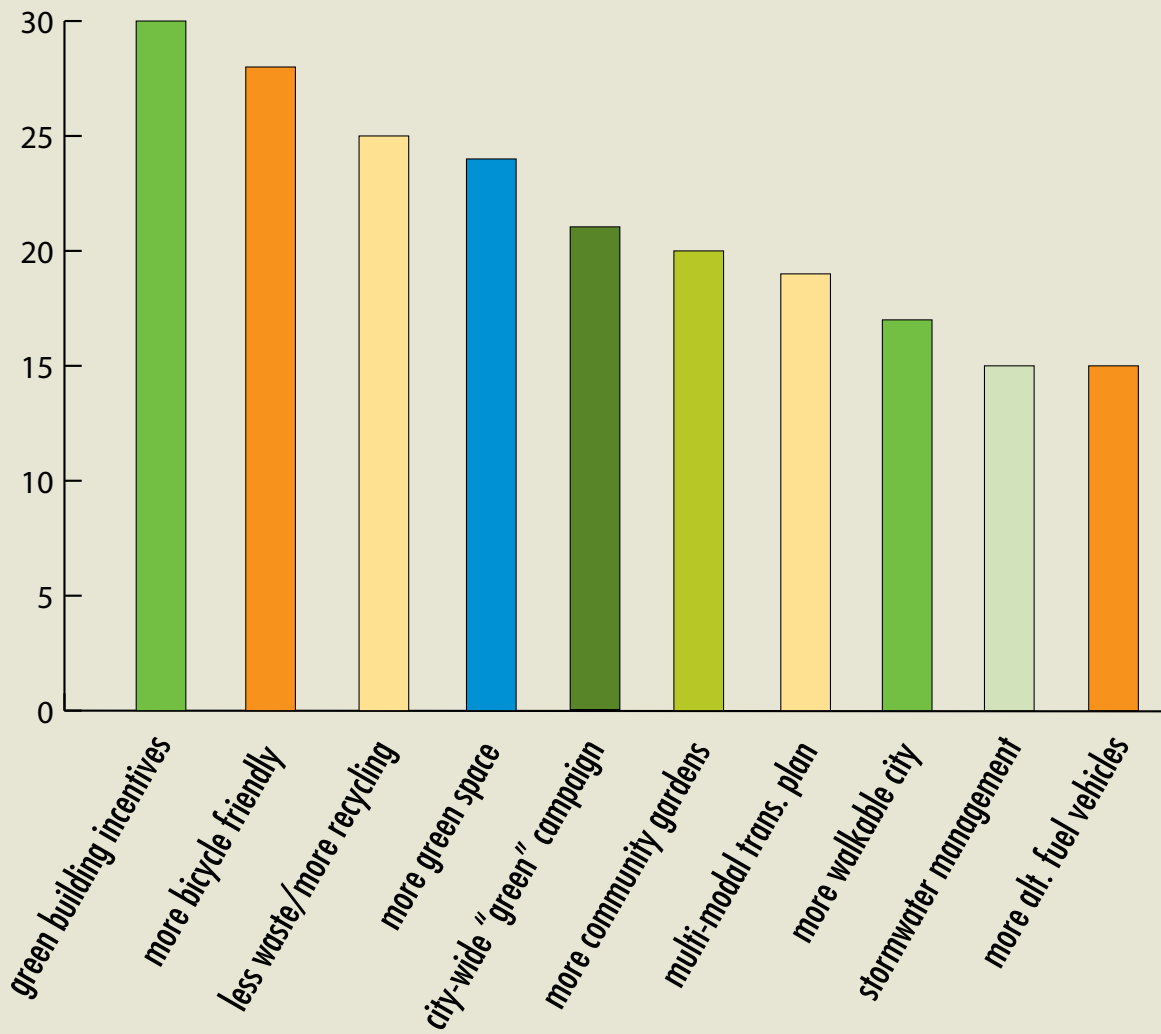
- The Committee held 5 public meetings throughout the county during November to evaluate the priorities of citizens, and to build support for future environmental initiatives.
- Approximately 300 people attended the meetings providing 887 priorities.
- Prior to each of the public meeting sessions, the Committee moderated 30-minute listening sessions with a panel of at least one member of each of the 4 Green Ribbon Committee subcommittees. Citizens spoke about specific issues or topics they felt passionate about.
- Metropolitan Government staff presented an overview of the results compiled from the over 1,800 citizens who participated in a Green Ribbon Committee survey.

- Meeting attendees then formed into smaller groups with discussion facilitated by Green Ribbon Committee members. Building from the results of the on-line survey, each group was provided a summary of results of community input received through the on-line survey, and then discussed the following question: “Considering community input, what specific steps should we take to make Nashville greener?” Ideas generated from all groups were then displayed, and participants voted their 3 top priorities.

**Attendees by meeting location:**

- West 47
- East 67
- South 20
- Downtown 90
- North 37
- Total attendees (based on sign-in sheets): 261

### Top 10 Priorities: All Meetings



Priorities with at least 1 vote: 275

# Mayor's Environmental Pledge

Five simple things that each of us can do, starting today. Whether we live in an apartment or home, these small choices can help create a healthier, cleaner and safer environment for everyone.

## ENERGY



I PLEDGE to replace 4 light bulbs with compact fluorescent light bulbs.

I CAN eliminate 1 ton of carbon dioxide emissions over the life of the CFL's.

TOGETHER all Nashvillians can save enough kilowatt-hours to power 5,260 households.

## WATER



I PLEDGE to turn off the water when brushing my teeth.

I CAN save 3.8 gallons of water a day.

TOGETHER all Nashvillians can conserve enough water in a year to fill L.P. Field four times.

## AIR



I PLEDGE to replace at least one car trip a week with walking, bicycling, carpooling or public transit.

I CAN decrease carbon dioxide emissions by 1,000 pounds.

TOGETHER all Nashvillians can eliminate more than 290,000 tons of carbon dioxide, the equivalent to removing 5,800 cars from the road every year.

## LAND



I PLEDGE to plant and care for at least one tree this year.

I CAN save at least 13 pounds of carbon dioxide from the atmosphere annually.

TOGETHER all Nashvillians can eliminate as much carbon dioxide as the trees on 4,652 acres of undeveloped land every year.

## WASTE



I PLEDGE to reduce my use of plastic shopping bags, by substituting reusable bags instead.

I CAN save up to 208 plastic bags a year from being made.

TOGETHER all Nashvillians can eliminate 120,400,000 plastic bags and 2,257,000 pounds of waste every year.

To take the pledge visit: [www.nashville.gov/green](http://www.nashville.gov/green)