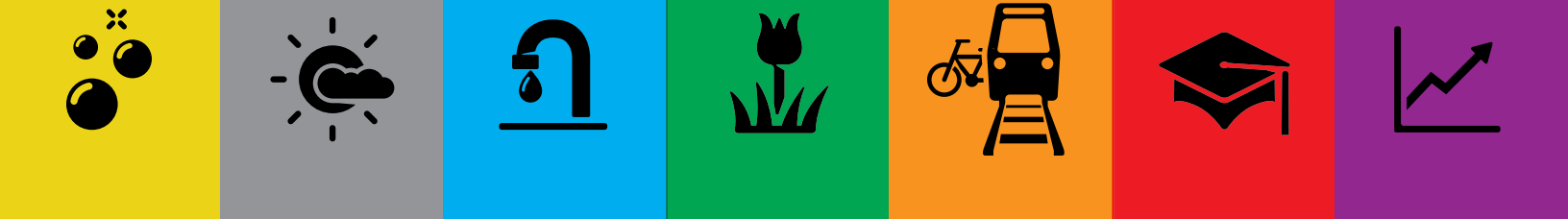
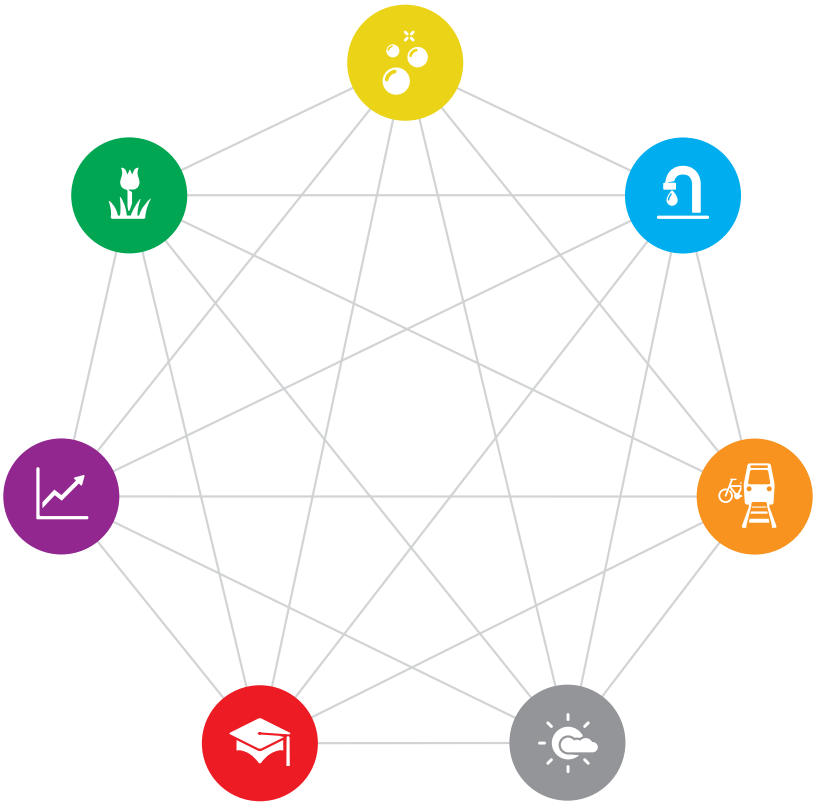
The Baltimore Sustainability Plan



The Baltimore Sustainability Plan



Adopted by the Baltimore Commission on Sustainability
February 3, 2009

Adopted by the Baltimore City Planning Commission
February 5, 2009

Approved by the Baltimore City Council's
Judicial and Legislative Affairs Committee
February 11, 2009

Approved by the Baltimore City Council
March 2, 2009

Published
April 2009

This plan is printed using post-consumer recycled material

SHEILA DIXON
MAYOR
100 Holliday Street, Room 250
Baltimore, Maryland 21202

March 12, 2009

Dear Baltimore:

I would like to thank each and every one of you who participated in the development of the Baltimore Sustainability Plan. Your input was insightful, constructive, and key to the historic adoption of the plan, which took place on March 2, 2009. It is wonderful to see so many of our citizens taking ownership of our City's environmental future. I would like to specifically thank all of those who participated in the Working Groups, who volunteered as Sustainability Ambassadors, and who served as members of the Youth Advisory Group. It is because of your hard work and dedication that the Sustainability Plan is an inclusive document that represents the goals of all of the residents of Baltimore.

I am pleased to say that for the first time ever, Baltimore has a sustainability plan that offers a clear vision of how we intend to address the social, environmental, and economic future of the City for generations to come. While there have been many new initiatives launched over the last couple of years, there is still much to do to make Baltimore a clean, healthy, efficient, green, mobile, aware, and invested community. This plan will act as a guide for improving each of those aspects of City life for all City residents.

Thank you again for your help, your vision, and your dedication to our City. Now that our goals are clearly laid out in front of us, it is time for each and every one of us to do our part to turn these goals into reality and show the world that Baltimore is truly a leader as a Sustainable City.

Sincerely,

Sheila Dixon
Mayor
City of Baltimore
SD:BS/ac

SHEILA DIXON
Mayor

THOMAS J. STOSUR
Director

March 26, 2009

Dear Baltimore:

When the Baltimore Sustainability Plan was adopted by the City Council on March 2, 2009, we were proud to have a document that contained the thoughts, concerns, and solutions that the residents of Baltimore shared with us. Your commitment to the creation of the Plan resulted in 29 goals that directly reflect your ideas. The Department of Planning, the Office of Sustainability, and the Sustainability Commission worked together with city agencies, industry leaders, community organizations, and concerned citizens on this Plan. Thank you to all of them and to you, for playing a major role in the creation of Baltimore's first Sustainability Plan.

The Baltimore Sustainability Plan will serve as a guide as Baltimore continues to move forward. Here at the Department of Planning, we will use the goals and strategies in the Plan to evaluate all proposals that come before the Planning Department & Planning Commission and we will pro-actively include Sustainability Elements into our future neighborhood planning and master planning efforts.

We look forward to working with all of Baltimore as we become a more sustainable city.

Sincerely,

Thomas J. Stosur
Director
Baltimore City Department of Planning

Baltimore Office of Sustainability
People · Planet · Prosperity

Dear Baltimore:

The Baltimore Commission on Sustainability is proud to present to you Baltimore's Sustainability Plan. This document establishes priorities for how Baltimore can grow and prosper in ways that meet the current environmental, social and economic needs of our community without compromising the ability of future generations to meet these needs.

The Commission on Sustainability worked hard to ensure that this Plan represents the voices and vision of all Baltimoreans. Early on the Commission adopted three operating principles for how we would conduct the planning process, including commitments to *engage* a wide scope of our community, use an *inclusive* definition of the environment and *translate* language and jargon to thoughts and ideas that are commonly used by regular people. Guided by these principles, we orchestrated a process that was open to everyone and heard from over one thousand citizens from all parts of our City – people who gave their time, energy and ideas to shape the Sustainability Plan. Our invitation to participate was greeted with enthusiasm, and we believe that the product of their efforts reflects their collective interest, passion and hope for Baltimore

With the Plan in place there is much to be done to achieve our sustainability goals. The Commission is committed to having the Plan be an active not static document. We will report regularly on our progress and hope that you will continue to stay involved as we move from planning to action.

On behalf of the Commission on Sustainability I thank everyone who participated in the process of creating the Plan. It's a long list, too long to allow me to name all who participated in this dynamic process. However, I do want to recognize Sustainability Manager, Beth Strommen, and Sustainability Coordinator, Sarah Zaleski, and the staff of the Office of Sustainability. They have provided excellent leadership and support for both the Commission and planning process.

We look forward to continuing our work on behalf of and with you as we strive to make Baltimore a cleaner, greener, safer, healthier…and more sustainable City.

Cheryl A. Casciani
Chair
Baltimore Commission On Sustainability

Executive Summary

Sustainability, meeting the current environmental, social, and economic needs of our community without compromising the ability of future generations to meet these needs, represents a desire to pass on a world that is as good as, if not better than, we found it for our children and our children's children.

Recent economic, political, and cultural realities have prompted many cities, companies, and individuals to assess and reconsider their plans for long-term sustainability. The seriousness of climate change treats have never been more evident, demand for natural resources continues to escalate, and hopes for reigniting economic growth rest on investments in the emerging green economy. Recently ranked among the top ten most sustainable cities in the nation, Baltimore offers immense opportunity for sustainable living and development by virtue of its population density, significant public infrastructure, and large, diverse stock of existing buildings. By improving Baltimore's ability to offer healthy air and water, varied transportation options, job opportunities with good growth potential, and clean,

safe recreational spaces, sustainable planning can help Baltimore attract and retain more residents, businesses, and investment. The Baltimore Sustainability Plan is designed as a resource to aid these efforts.

In early 2008, Mayor Sheila Dixon swore in the 21-member Commission on Sustainability representing community organizations, local non-profits, labor, private industry, local institutions, and City government. The Commission held its first official meeting in May of 2008 where it committed to public involvement by establishing three guiding principles – engagement, inclusiveness, and translation. The Commission created working groups, community conversations, a youth strategy, and a sustainability forum to reach people from all sections and backgrounds of the Baltimore community. The Sustainability Plan's public engagement process, which ultimately engaged over 1,000 citizens over an eight month period, gathered and analyzed ideas, studied best practices, and developed aspirations for a more sustainable city.

The resulting Plan lays out a broad, inclusive, and community-responsive sustainability agenda to complement Baltimore's existing Comprehensive Master Plan. The development of the Baltimore Sustainability Plan represents a crucial step in moving this agenda forward, but it will take the creativity, commitment, and participation of the entire Baltimore community to realize its potential. The Sustainability Plan lays out 29 priority goals within seven theme chapters: Cleanliness, Pollution Prevention, Resource Conservation, Greening, Transportation, Education & Awareness, and Green Economy. Each of the 29 goals is accompanied by a set of recommended strategies. Some of the goals set very specific targets and ambitious time frames within strategies, while metrics for other goals are still under development.

The Cleanliness chapter includes goals addressing litter, maintenance, and vacant lots, recognizing that the upkeep of a city acts as an indicator of its overall health. Goals in the Pollution Prevention chapter directly address public health with a focus on greenhouse gas emissions, air quality, water quality, hazardous materials, and health of indoor environments. The Resource Conservation chapter addresses the efficient use of energy, water, and materials. The Greening chapter underscores the importance of the City's living infrastructure with goals targeting trees, sustainable food systems, recreational space, and ecological health. Transportation goals offer ways to reduce dependence on automobiles through improving public transportation, making Baltimore more bicycle and pedestrian friendly, facilitating shared-vehicle usage, improving transportation equity, and increasing funding for sustainable transportation. Goals in the Education & Awareness chapter address green schools, youth involvement, community environmental awareness, and informational resources. The final chapter, Green Economy, articulates goals around creating and training for green jobs, supporting green and local business, and increasing Baltimore's "green" profile nationally.

Every citizen, community organization, business, and institution can play a role in making the vision of a thriving, sustainable Baltimore a reality. The Baltimore Office of Sustainability will monitor the progress made on the Plan goals and produce annual reports for the community. This progress report will allow us to check in, renew our commitment, and celebrate our successes together as a community.

Table of Contents

What is Sustainability?

Sustainability is not a new term. In recent years, however, it has become a buzzword, popping up in a wide range of forums to convey a long-term, comprehensive approach to decision making. What does it mean to live in and be part of a sustainable community? What does it take to operate a city sustainably? What does a Sustainable Baltimore look like?

Generally speaking, we have come to define "sustainability" as "meeting the current environmental, social, and economic needs of our community without compromising the ability of future generations to meet these needs". Basically, sustainability is a desire to pass on a world that is as good as, if not better than, we found it for our children and our children's children.

Sustainability is sometimes illustrated as a three-legged stool, comprised of social equity (*people*), economic health (*prosperity*), and environmental stewardship (*planet*). Collectively, these "legs" are the foundation for our quality of life. In order for a community to thrive today and tomorrow all three pillars of this trilogy need to be strong. However, the third tenant of this system, environmental stewardship, has too often been excluded from conventional decision-making.

The sustainable Baltimore we envision integrates all three elements of sustainability, into the decision making process. If successful, Baltimore will be a clean, healthy, efficient, green, mobile, aware, and invested community.

Background

In 2006, the Baltimore City Planning Department completed a Comprehensive Master Plan designed to position Baltimore as a world-class city. The Comprehensive Plan took the form of a business plan and was organized into four themes: Live, Earn, Play, and Learn based on essential aspects of life in Baltimore (http://www.baltimorecity.gov/government/planning/compplan/). Within this framework, the Comprehensive Plan laid out 13 goals, 45 objectives, and 143 strategies. The result was a document which effectively identifies and responds to many of the challenges and opportunities facing Baltimore's economy and social structures. The Comprehensive Plan proposes strategies to respond to issues surrounding schools, culture, building design, historic preservation, land use, transportation, and economic development.

The Sustainability Plan will be adopted as an element of the Comprehensive Plan and will also function as a standalone document. It will expand upon and complement the recommendations contained in the Comprehensive Plan, in some cases confirming and re-emphasizing elements, while filling in gaps in other areas. The Sustainability Plan highlights seven themes: cleanliness, pollution prevention, resource conservation, greening, transportation, environmental education and awareness, and the green economy. Together, the Comprehensive Plan and the Sustainability Plan address the social, environmental, and economic components of sustainability.

Times Are Changing

In the two years since the Comprehensive Plan was created, the economic, political, and cultural landscape has significantly changed. The science and popular sentiment recognizing the seriousness of climate change has never been stronger. Local governments throughout the country have stepped up to demonstrate leadership on climate policy amidst federal inaction. Meanwhile, demand for natural resources such as energy, raw materials, and fresh water continues to increase exponentially with global population and affluence. The Obama Administration has articulated priorities focused on energy independence, public infrastructure investment, job creation, and environmental stewardship. In response to these and other factors, a new clean economy is emerging with the potential to create jobs, support entrepreneurial opportunities, and attract investment. What do these changes mean to Baltimore and how will we as a community respond?

The shifting landscape presents both challenges to which we, as a community, need to respond and opportunities on which we want to capitalize. For instance, we have seen residential electricity rates in Baltimore rise roughly 50% over the past 2 years. The expensive, unsustainable response to this challenge would call for building more power plants, while the affordable, sustainable response involves finding ways to use less energy. In another example, Baltimore can look at its 30,000 currently vacant properties as 30,000 opportunities to provide sustainable housing, food-producing gardens, or community recreational space.

Baltimore was recently ranked among the top ten most sustainable cities in the U.S. by a group called SustainLane (http://www.sustainlane.com/us-city-rankings/cities/baltimore). Rankings were based on 16 criteria ranging from solid waste diversion to housing affordability. Baltimore ranked as a "Sustainability Leader" in three areas: city innovation, the green economy, and city commuting. The areas in which Baltimore ranked among the lowest included energy and climate policy, metropolitan congestion, and air quality. While this represents just one survey, these findings can serve as a resource to benchmark and guide plan implementation.

"Treat the Earth well. It was not given to you by your parents. It was loaned to you by your children."

– Kenyan Proverb

In responding to these opportunities and challenges, we must also recognize the current fiscal reality. The recent economic downturn has taken its toll on household, business, and municipal revenues. This is not an excuse for inaction, but should motivate closer and more creatively inspection around how we make decisions. One need not look any further than the light switch to find an example of environmental stewardship going hand and hand with financial savings. Turn off the light when you leave the room – save money on your energy bill and reduce greenhouse gas emissions.

By virtue of the City's population density, significant public infrastructure, and large, diverse stock of existing buildings, Baltimore provides tremendous opportunity for sustainable living and development. City living demonstrates sustainability by reducing the need for automobiles, reusing infrastructure, and recycling existing buildings. As a region, we can avoid suburban sprawl, expensive infrastructure expansion, and unnecessary use of new building materials by attracting more residents and businesses to Baltimore City.

Forward-thinking companies are integrating sustainability into their missions, strategic planning, and operations and marketing this progress as a means of capturing a larger market share. Similarly, the City of Baltimore should continue to look for ways to integrate and market sustainability to attract and retain residents. Be it cleanliness, air quality, walkability, or green spaces, sustainability is intimately tied to quality of life. If Baltimore wants to attract and retain more residents, businesses, and investment, we need to offer a city with healthy air and water, varied transportation options, job opportunities with growth potential, and clean, safe recreational spaces.

Baltimore City Leadership

The importance of considering environmental well-being alongside social and economic health is a major driver of Mayor Dixon's commitment to a Cleaner, Greener, Safer, Healthier Baltimore. In the summer of 2007, Councilman Jim Kraft sponsored legislation to create the Baltimore Office of Sustainability (BOS) and Commission on Sustainability (CoS). In early 2008, Mayor Dixon swore in the 21-member Commission representing a wide variety of stakeholders including community organizations, local non-profits, labor, private industry, local institutions, and City government. This group collectively offer a wide-range of expertise in areas such as green building, environmental justice, public health, and climate change. The Commission, together with the BOS, was tasked with engaging the public to develop and implement a Sustainability Plan for the broader Baltimore community.

In May of 2008, the CoS held its first official meeting, with attendance of over 150 interested citizens. At this initial meeting, the CoS committed to three operating principles that would guide the development of the Sustainability Plan in an attempt to maximize public involvement:

- ***Engagement*** - To engage a wide scope of the Baltimore community, including those not traditionally involved in the existing environmental discourse, in the development and implementation of the Sustainability Plan.
- ***Inclusiveness*** - To apply a broad definition of "environment" to include contexts relevant to the diverse populations within the Baltimore community. Recognize that individuals define their "environment" differently, whether be it their home, city block, or ecosystem.
- ***Translation*** - To use language that is meaningful to a wide range of the Baltimore community. Instead of altogether avoiding the use of more technical language, look for opportunities to educate new audiences on these concepts and how they may relate to them.

These were, in large part, an effort to bring the entire Baltimore community into the process and to avoid common pitfalls leading to environmental injustices in the past. Throughout the development of this Plan, the CoS referred back to these guiding principles when faced with decisions on how to proceed.

Public Engagement

The Baltimore Office of Sustainability (BOS) and the Commission on Sustainability (CoS) recognize that creating a sustainable city rests in the hands of the entire Baltimore community. Some already have an understanding of and a vested interest in the global and local efforts toward sustainability. There are others, however, who have not yet been engaged in the conversation or moved to action. The desire to include the voices of all segments of Baltimore motivated the BOS and CoS to engage the community in a planning process to shape Baltimore's Sustainability Plan, a process designed to give all citizens, businesses, and institutions multiple ways to participate and provide input to the Plan.

Baltimore's Approach to Public Engagement

The Sustainability Plan's public engagement process, which ultimately engaged over 1,000 citizens over an eight month period, gathered and analyzed ideas, studied best practices, and developed aspirations for a more sustainable city. The process included input from average citizens, City agency personnel, environmental activists, and sustainability experts. The results of this process are the basis for the recommended goals and actions in the Sustainability Plan. To reach over 1,000 people from all sections of the City, the public engagement process had multiple components – working groups, community conversations, a youth strategy, and a sustainability forum.

Working Groups

The primary vehicle for developing the core content of the Sustainability Plan was six Working Groups organized around somewhat traditional resource areas: Energy/Air, Water, Green Infrastructure, Built Environment, Transportation, and Waste. Each group was comprised of at least two CoS Commissioners, five to ten non-commissioners with expertise in the respective resource areas, and any citizens who were interested in contributing. The Working Groups were staffed by individuals from relevant City government agencies including Planning, Transportation, Parks & Recreation, Housing and Community Development, and Public Works. Using the people, planet and prosperity lenses, they gathered information about existing programs, established a vision for a sustainable Baltimore in the context of their resource issue, identified goals and benchmarks, and established some programmatic priorities. Between June and August of 2008, the groups collectively convened 18 public meetings and dozens of working sessions, engaged over 300 citizens, and produced detailed sets of recommendations to feed into the Sustainability Plan.

Community Conversations

While the Working Groups gathered information around designated, resource-focused issues, the Community Conversations enabled people to discuss sustainability out of these silos and in ways that relate to their everyday lives. An ad hoc community advisory team consisting of 20 citizens was asked

for advice on how to talk about traditionally environmental issues such as greenhouse gas emissions and green infrastructure realizing that many people do not typically think in these terms and may have other issues on their minds. The advisory team suggested that the BOS request time on the agendas of already scheduled community meetings such as senior citizen groups, business groups, and community associations to raise people's awareness about the Sustainability Plan, discuss issues raised by the Working Groups, get reactions to proposed goals, and hear new ideas for what priorities the Plan should articulate.

Based on this advice, the BOS recruited over 30 Sustainability Ambassadors who worked in pairs to attend over 35 community meetings in September and October of 2008. The Ambassadors, a diverse mix of interested citizens, were trained by professional facilitators to make brief sustainability presentations. Collectively, Ambassadors met with over 550 people from across Baltimore and gathered scores of ideas, some of which reinforced information already gathered by the BOS and some of which enhanced the emerging framework for the Plan. One result of the Community Conversations was a revised set of cross-cutting themes that were brought to the public for discussion at an October 28th Sustainability Forum. Another, less tangible, result of these meetings was to inform individuals not traditionally involved in environmental issues about sustainability. This also presented the opportunity to illustrate how concerns they encounter in their everyday lives, such as their child's asthma, are connected environmental problems, such as greenhouse gas emissions and global warming.

Youth Strategy

Young people play an essential role in the definition of sustainability – to meet the environmental, social, and economic needs of Baltimore without compromising the ability of future generations to meet these needs. In early July, the BOS and CoS convened 11 young people and some adult leaders of youth development organizations to describe Baltimore's Sustainability Program, share the desire to involve young people in the Plan's development, and get their advice and guidance on how to meaningfully engage young people in the

process. Through that discussion, young people asked to be fully integrated into the ongoing work of the CoS. The original planning group was expanded to a Youth Advisory Group of 15-20 young people of diverse backgrounds from both public and private schools.

Hosting a one-day event presented itself as a feasible and effective way to immediately involve youth in the process. The Youth Advisory Group felt that in order to be successful, the one-day event had to have four key components: educational, hands-on, entertaining, and provide a means to gather feedback from attendees. These shaped the guiding principles of Greenscape'08 which resulted in an event specifically for young people, planned by young people. Greenscape'08 was held at a local high school, Baltimore Polytechnic Institute, on October 18, 2008. The event was attended by over 150 young people ages 3 to 24, plus volunteers including public and private school students, college students, community leaders, Working Group members and Sustainability Commissioners. This one-day event incorporated art, music, education, and fun to generate interest in the subject of sustainability and gave young people a time and a place dedicated to their concerns. Activities were planned that would inspire attendees to think about their environment and then express their ideas through artwork, media production, graffiti walls, and a survey.

While not drastically different from the concerns of the adult population, the youth concerns demonstrated an awareness of many of the challenges facing the City in trying to become more sustainable, and they recognized that they can be directly involved in efforts to improve the environment. There was a very clear recognition that each person has to be responsible for the impact their actions have on the planet.

Sustainability Forum

The final phase of community engagement was a Sustainability Forum held on October 28, 2008 in a local high school cafeteria, bringing together over 100 community stakeholders. The purpose was to hear the results of the planning and community engagement process to date, to seek feedback and recommendations, and to gain an endorsement of the process and products of the effort thus far, including the recommendations from the youth-led Greenscape event and the themes from the Community Conversations. Forum participants worked in breakout groups to consider each theme and the corresponding priority goals and strategies, the necessary partnerships required for implementation, anticipated challenges, and any aspirational ideas that should be explored to make the Sustainability Plan as bold as possible.

What we Learned from Public Engagement

The public engagement process was a significant step in ensuring accessibility and equity in what will be an ongoing effort to make Baltimore a sustainable city. The process successfully introduced the broader community to the sustainability initiative and the planning process, gathered information about community priorities from the perspective of diverse community representatives, shed light on issues for future community education and further conversation, built relationships between community stakeholders, BOS, and the CoS, and recruited a cadre of citizens whose participation will be essential to the successful implementation of Baltimore's Sustainability Plan. The public engagement process affirmed and enhanced the goals, strategies, and Short-term priorities that had been developed by the BOS, CoS, and its Working Groups, as well as highlighting the need to create vehicles for ongoing dialogue, engagement, and collaborative action that connect broad community stakeholders to the initiative.

"For if one link in nature's chain might be lost, another might be lost, until the whole of things will vanish by piecemeal." – Thomas Jefferson

Plan Purpose and Structure

This Sustainability Plan is an attempt to strengthen all three legs of our sustainability stool – people, planet, and prosperity – en route to helping Baltimore thrive for generations to come. The Plan is designed to lay out a broad, inclusive, and community-responsive sustainability agenda to complement Baltimore's existing Comprehensive Master Plan.

Developed with input from over 1,000 individual stakeholders, this document is not an end in and of itself, but rather a strategic look at where we, as a community, are now and where we want to be. It is not a prescriptive work plan, but rather serves as an umbrella to connect previously disparate efforts already underway in Baltimore and help to identify gaps to target with future initiatives. Some of the recommendations that surfaced throughout the Plan development process are being incorporated into other concurrent efforts but may not be articulated in detail in the Sustainability Plan. For instance, many of the transit-oriented development and land use recommendations are being incorporated into Baltimore's new zoning code as part of Transform Baltimore, the city's first comprehensive rezoning effort in over 30 years. Recommendations specifically related to green building systems are being used to shape the Baltimore Green Building Standards which are currently under development. Transportation-related sustainability recommendations will help to inform the future revisions of the Baltimore Department of Transportation's Strategy Plan.

The Sustainability Plan represents a crucial step in moving this broad agenda forward, but in many ways it is still a first step. The real work of implementation will come with the creativity, commitment, and participation of the entire Baltimore community. This Sustainability Plan is not simply a directive to government. Given the breadth, scale, and seriousness of the challenges we face, we cannot rely solely on any one entity to transform Baltimore into a more sustainable community. There is a role for every citizen, community organization, business, and institution in making this vision for Baltimore a reality.

Plan Structure

To help Baltimore think, plan, and act more sustainably as a community, this Plan articulates the collective vision of a Sustainable Baltimore, lays out priority goals to move us toward this vision, sets ambitious targets that will measure our progress toward these goals, and recommends some initial strategies on how we will accomplish these recommendations.

Through Working Group recommendations and community input, seven theme chapters were identified: *Cleanliness, Pollution Prevention, Resource Conservation, Greening, Transportation, Education & Awareness,* and *Green Economy.* Within each chapter, between three and five specific goals are articulated, for a combined total of 29 Plan goals. Each of these goals is accompanied by a non-exhaustive set of recommended strategies. Each strategy is defined, with key timeframes, funding, and implementation partners identified*. Some of the goals set very specific targets and ambitious time frames within strategies. These were deliberately chosen to be ambitious for two reasons – the challenges before us require bold action, and the CoS believes Baltimore can get there.

Strategy Icon Guide

- Timeframe*
- Strategy Type
- Funding
- Lead Partners
- Additional Benefits

*Timeline: Short-term (under 3 years), Mid-term (3-5 years), Long-term (more than 5 years).

Accountability

Responsibility and accountability are essential to the sustainability of our community. Individual citizens, community groups, institutions, and businesses must recognize how their decisions impact the sustainability of the community and take responsibility for responding appropriately. Each and every one of us can choose to be part of the problem or part of the solution, and collectively, we can hold one another accountable for our efforts and the ultimate outcomes. This Sustainability Plan represents a compact between Baltimore City government and the citizens, businesses, and institutions of our community.

Some of the goals contained in this Plan, for example greenhouse gas emissions reductions, lend themselves well to measurement metrics, whereas other goals, litter reduction for instance, are harder to quantify. As a result, the Plan contains date-specific targets for some, but not all, of the 29 goals. Where targets are not currently stated, the Baltimore Office of Sustainability (BOS) and Commission on Sustainability (CoS) will work to develop metrics to track the collective progress toward accomplishing these goals. They will select relevant, easily understood, and reliable metrics with which to communicate the progress towards realizing the vision of a sustainable Baltimore to the broader community.

The BOS will monitor progress made on the Plan goals and produce reports for the community on an annual basis. This progress report will allow us to check-in, renew our commitment, and celebrate our successes together as a community. As a community, we can hold ourselves accountable on a personal and collective level to future generations.

The Commissioners serving on the CoS are appointed for four-year terms during which they will make decisions and take actions to help guide the implementation of the Sustainability Plan. In an effort to increase accountability, the CoS has widened their original set of guiding principles - inclusiveness, engagement, and translation - to include the following seven commitments which will guide their decision making moving forward. The Commission will:

1. Consider the impacts to people, planet, prosperity of all decisions
2. Demonstrate leadership
3. Promote equity
4. Accompany action with education
5. Strive to apply financial savings of sustainable operations to further sustainability goals
6. Recognize linkages with the regional, national, and global community
7. Encourage responsibility by a wide range of stakeholders

Chapter 4

Cleanliness

Goal 1 Eliminate litter throughout the City

Goal 2 Sustain a clean and maintained appearance of public land

Goal 3 Transform vacant lots from liabilities to assets that provide social and environmental benefits

Cleanliness

A clean city is a more sustainable city. The degree to which a street, a neighborhood, or a city is kept clean and well-maintained often indicates the level of investment, health, and pride present in that community. Conversely, a dirty street, neighborhood, or city gives the impression, either real or perceived, of neglect. This can lead to a decrease in property values, loss of tourism and business, a slump in community pride, and a fertile ground for crime and other destructive behavior.

Each year, the Baltimore City Bureau of Solid Waste spends more than $10 million on litter cleanup throughout the City, funds that could be more constructively spent on sustainable waste management strategies. If everyone did their part to keep Baltimore clean, those tax dollars could be spent on improving our city in other ways. To put this into perspective, $5 million is enough to repair 905,000 potholes, or purchase 500,000 flu vaccines, 145,000 trees, or 265,000 school textbooks.

Baltimore City crews collect approximately 320,000 tons of debris and recycling from households and small businesses each year. Much of the garbage left for pick-up, however, is put out incorrectly, often in plastic bags in the street with no trash cans. Not only is this illegal, it invites rodents and leads to litter which ends up in our streets, storm drains, and waterways. Illegal dumping and non-compliance with sanitation codes pose health risks, pollute our environment, and have negative economic implications.

Rodents pose major public health threats in the form of bites and disease transmission. Their gnawing creates holes which can expose electric wiring and causes property damage. Baltimore's location near the water makes rodent infestation even more likely, however doing your part to keep the City clean and litter-free can drastically reduce the presence of rodents in and around your community.

Litter and illegal dumping also affect our water quality. Storm drain systems designed to funnel rainfall and run-off into waterways can become blocked by litter and debris. With this run-off comes a number of pollutants, most prominently trash and chemical waste, which end up in our streams, lakes, and ultimately the Chesapeake Bay. Fish, crabs, and other aquatic life can be poisoned, wildlife can be strangled, and oxygen levels in the water can decline dramatically, threatening marine life.

Dirty and littered places, as a result of illegal dumping and improper waste disposal, can also indicate neighborhood decline and disorder. Perceptions of neighborhood neglect and disorder have real economic costs through decreased property values and investment. Research has shown that clean public spaces are safer, and conversely, "dirty" public places promote criminal behavior in that area. Dumping sites serve as magnets for additional dumping and other criminal activities, further eroding the quality of life of the surrounding community.

Individuals are more likely to be compelled to be good stewards of the planet when their immediate surroundings are clean and well-maintained. Baltimore has come a long way in cleaning up our city. We practice single stream recycling, take service complaints seriously and address them immediately, and maintain more public trash cans across the City. This progress is hopeful, yet there is still room to improve the cleanliness of our community as we begin creating a more sustainable Baltimore.

1 Eliminate litter throughout the City

Like many big cities in the United States, Baltimore has too much litter in its streets, neighborhoods, public spaces, storm drains, waterways, and elsewhere throughout our community. It is difficult to motivate individuals to take actions affecting more global environmental threats when the space directly around them is dirtied with litter. Litter is an expensive problem – it lowers property values, it is expensive to clean, it detracts from tourism, and it endangers the water quality and aquatic life that Baltimore depends on. To address this problem, Mayor Dixon launched the CleanerGreener Baltimore initiative which leverages public-private partnerships and challenges the entire Baltimore community to join in the fight against litter: Don't Make Excuses. Make a Difference.

Strategy A

Educate residents and businesses about proper trash storage and disposal

Distribute a clear, concise, and consistent message about proper waste disposal in the City of Baltimore through a variety of outlets to all businesses, institutions, and individuals. Make this message available in multiple languages and locations so that it reaches all sections of the population.

- Short-term
- Education
- CleanerGreener Baltimore Initiative
- Department of Public Works (DPW), CleanerGreener Baltimore Initiative partners

Strategy B

Expand existing programs to maximize public trash and recycling bin use

Provide both trash and recycling receptacles at locations most convenient for citizens to increase trash and recycling bin use. DPW has placed an additional 1050+ trash cans at bus stops and gateways over the last two years. In addition, DPW is initiating a pilot program to place recycling bins around the Inner Harbor. This pilot will help determine how best to expand the placement of recycling bins in more locations throughout the city.

- Short-term
- Policy/Operations
- CleanerGreener Baltimore Initiative
- DPW, Non-Governmental Organizations (NGOs), Friends of Patterson Park, Baltimore Waterfront Partnership

Strategy C

Launch a public education campaign to change the public's attitude toward litter

Implement the *"Don't Make Excuses. Make a Difference."* campaign through the Cleaner Greener Baltimore Initiative. The campaign, designed to deter casual and intentional littering as well as improper trash disposal, will educate city residents, commuters, and tourists about the city's litter problem and cause citizens to recognize that litter is their problem to solve. The campaign promotes behavioral change as a way to create a cleaner, greener Baltimore.

- Short-term
- Education
- CleanerGreener Baltimore Initiative
- CleanerGreener Baltimore Initiative, Planit, Media (WBAL), Baltimore Community Foundation

Strategy D

Issue every household a large municipal trash can

Provide every household a large municipal trash can with an attached lid which is bar-coded with the household street address. The can should remain the property of the City and with the location even when ownership of the property is transferred. Advantages of this system include: allowing the customer to place more material in a single can with a tight fitting lid, helping all households meet the current sanitation code (easily, more than 50% do not use trash cans at this time) providing for a more pleasing visual effect, and reducing worker's compensation claims through safer collections for workers.

- Short-term
- Operational
- City Funds
- DPW

Strategy E

Improve the enforcement of current sanitation code

Improve the enforcement of the City's sanitation code by monitoring more rigorously, reducing response time on violation calls, and collecting higher penalty fines. More than an estimated half of City residents currently do not use trash cans which is a violation of the sanitation code. Instituting more strict enforcement will highlight the City's serious commitment to cleaning up our own environment.

- Short-term
- Operational
- City Funds
- DPW

Cleanliness

2 Sustain a clean and maintained appearance of public land

Baltimore has over 6,000 acres of parkland and 30,000 vacant properties to manage with very little revenue. Creative, cost effective methods of land management are needed to meet this challenge, including both government and citizen organizational capacity building, education and training. Land that is well maintained and cared for raises the value of surrounding properties. Where this land is managed with community support, there is the added benefit of social interaction and additional community stabilization.

Strategy A

Establish city-wide maintenance standards for publicly owned land

Require all agencies maintaining public land to complete a formal operations strategy and manual outlining the timing, processes and procedures for maintenance of all types of public spaces under their control.

- Mid-term
- Policy/Operations
- Existing Program Funds
- All agencies involved in land and building maintenance

Strategy B

Build capacity of existing city maintenance staff through training and education

Create and require training programs regarding proper care of green spaces, mowing techniques, and other programs for all relevant employees to increase effectivness and efficiency.

- Short-term
- Policy/Operations
- Existing Program Funds
- All agencies involved in land and building maintenance

Strategy C

Expand adoption and community stewardship of public land

Provide technical assistance and guidance to community groups caring for public parks and develop Partnership Agreements with committed groups, providing tools, services, and support in exchange for long-term park stewardship.

- Short-term
- Policy/Operations
- Grant Programs; Partnerships; City Funds
- Department of Recreation and Parks (DRP), Parks and People Foundation, Downtown Partnership, Community Groups

3 Transform vacant lots from liabilities to assets that provide social and environmental benefits

There are nearly 30,000 abandoned properties in Baltimore City. Vacant properties can become targets of illegal dumping and litter, leading to an overall perception of neighborhood neglect. Conversly lots can be transformed into useful community spaces either through redevelopment or the creation and maintenance of open space. The proposed Baltimore Land Bank will be charged with efficiently acquiring, managing, and selling abandoned property for productive use. One of the Land Bank's goals is to reduce the amount of privately-owned abandoned and blighted property in Baltimore City to less than 7.5% of the overall total of properties by 2012.

Strategy A

Strengthen enforcement of dumping and litter laws

Increase the effectiveness of existing dumping law enforcement. A communication and education strategy is underway to increase use of the Baltimore City free 311 hotline for citizens to call and report illegal dumping and littering. The Sanitation and Code Enforcement Division, which is responsible for enforcement of these laws, was recently reorganized and restructured within the Department of Housing and Community Development (HCD) to increase efficiency while making it more accessible to Baltimore residents.

- Short-term
- Policy/Operations
- Existing Program Funds
- HCD, Police Department

Strategy B

Increase participation in community maintenance and stewardship efforts

Leverage the success of the current maintenance and clean-up effort to engage more communities and organizations and increase the frequency and regularity of these opportunities. The CleanerGreener Baltimore Initiative and the Department of Recreation and Parks (DR&P), sponsor neighborhood pitch-ins, park maintenance programs and twice yearly community clean-ups. By supplying tools, supplies, and collection services, the City partners with community, environmental, and faith-based organizations to clean and help maintain their neighborhoods. To date, more than 100 community organizations have participated.

- Short-term
- Partnerships
- CleanerGreener Baltimore Initiative, Grant Programs
- DPW, DRP, Watershed and other Community Organizations

Strategy C

Create and sustain a land trust to support community-managed open space

Develop and support a land trust to help communities retain control of appropriate open space upon their commitment to maintain the space. There are numerous examples of vacant lots throughout the city that have been adopted and rehabilitated by the neighboring community for recreation, gardening, and other beneficial uses. This strategy will provide a legal safeguard to allow communities to retain these assets.

- Ongoing
- Partnerships
- Grant Programs
- Baltimore Green Space, Baltimore Office of Sustainability (BOS), HCD

Strategy D

Return abandoned properties to productive use

Expedite the return of the roughly 10,000 vacant properties which the City owns to productive use through the Baltimore Land Bank. The Land Bank structure will streamline the process for selling City property by reducing redundant approvals, providing flexibility in recruiting and hiring professional staff and vendors, adopting sales policies and priorities with input from various stakeholders, and reducing the time needed for consolidating development parcels. Instead of demolition, encourage preservation and reuse of buildings as a sustainable means of reducing demolition waste, preserving historic assets, and reducing the need for additional raw building materials.

- Mid-term
- Policy/Operations
- Funding Analysis Needed
- Baltimore Land Bank Advisory Board

Strategy E

Establish a new fee schedule charged to absentee property owners

Levy a fee on absentee property owners to cover the costs of maintaining their vacant, privately-owned lots similar to the aggressive fee schedules established by other cities to cover the costs of maintenance of vacant lots. Vacant buildings and lots represent an absense of City property tax revenue and increase costs to the City in the form of code inspections, more frequent policing, and fire risk. The fees raised from these programs will be used to assure regular maintainance and provide a disincentive for holding the unused lots.

- Short-term
- Legislative
- Self-Funded
- City Government

Four Principles of Ecology:

1. All things are interconnected
2. Everything goes somewhere
3. There's no such thing as a free lunch
4. Nature bats last

(Ernst Callenbach, Ecology: A Pocket Guide)

Chapter 5

Pollution Prevention

Goal 1 Reduce Baltimore's greenhouse gas emissions by 15% by 2015

Goal 2 Improve Baltimore's air quality and eliminate Code Red days

Goal 3 Ensure that Baltimore water bodies are fishable and swimmable

Goal 4 Reduce risks from hazardous materials

Goal 5 Improve the health of indoor environments

Pollution Prevention

The air we breathe, the water we use, and the environments which surround us directly affect Baltimore's health and quality of life. Historically, we have made decisions without consideration for where the materials or inputs we use come from or what will become of outputs, in the form of pollution. In contrast, sustainable decision-making considers both the external impacts of the inputs we use in production and consumption as well as the "waste" created. As a result of older, more traditional economic thinking, many of the processes we have adopted produce air, water, land, and atmospheric pollution that threaten both human and environmental health. To be sustainable, we need to change our way of thinking and begin to view all "waste" in new ways through reducing, reusing, and recycling.

The impact pollution and waste have on our health and quality of life is becoming more and more evident. Every day, Baltimoreans breath air ranked as the 9th, 10th, and 22nd most polluted nationally for ozone, short-term particle pollution, and year-round particle pollution, respectively. Moreover, Baltimore has three times the state average of Code Orange days, putting children, the elderly, and those with compromised immune systems at risk.[1] The Center for Disease Control reported that asthma accounts annually for about 14 million school days missed and costs an estimated $3.2 billion to treat children under the age of 18 alone. In Baltimore, 24% of high school students have asthma, compared with the national average of 17%.[2]

Water pollution similarly compromises the human and environmental health of Baltimore. Pollution in our streams, rivers, and the Bay impedes our use of these resources as centers of recreation and natural beauty, as well as their ability to sustain crucial wildlife habitats. The Chesapeake Bay is one of our greatest assets, yet the health of the Bay continues to deteriorate year after year as indicated by the 2007 State of the Bay Report.[3] The federal Clean Water Act calls for all waters to be fishable and swimmable unless it is demonstrated that it is impractical to meet this goal. However, many of Baltimore's water bodies are currently not hospitable sites for either fishing or swimming.

In addition to the pollution of our air and water, we must deal with polluted land. Sites whose redevelopment may be compromised because of the potential presence of hazardous substances are called Brownfields. Unfortunately, because of Baltimore's rich industrial heritage, most available post-industrial sites in Baltimore are considered Brownfields. These sites can be made safe and useful again, but they must first be properly treated. Currently, through partnerships with the EPA and other federal, state, and local entities, the City of Baltimore has become a Brownfield Showcase Community. We serve as a model for other cities, demonstrating the benefits of collaborative activity on Brownfields. Since the Baltimore Brownfields Initiative began, over 30 sites have been assessed, four of which are participating in a voluntary cleanup program. One site alone has already attracted $11.5 million in private investment and created almost 200 jobs.

Pollution is not limited to outdoor environments. In fact, many of the pollutants we are exposed to everyday are found in our indoor environments. Soot or indoor particulate matter (PM) levels in the bedrooms of Baltimore's inner-city children were found to be remarkably high. More than 17% of the homes tested would fail the EPA's 24-hour ambient PM2.5 standard, according to a study by the EPA Children's Environmental Health Centers. The Children's Center at Johns Hopkins found that elevated indoor PM levels were significantly associated with asthma, increased respiratory symptoms, and more fre-

1 American Lung Association: State of the Air 2008

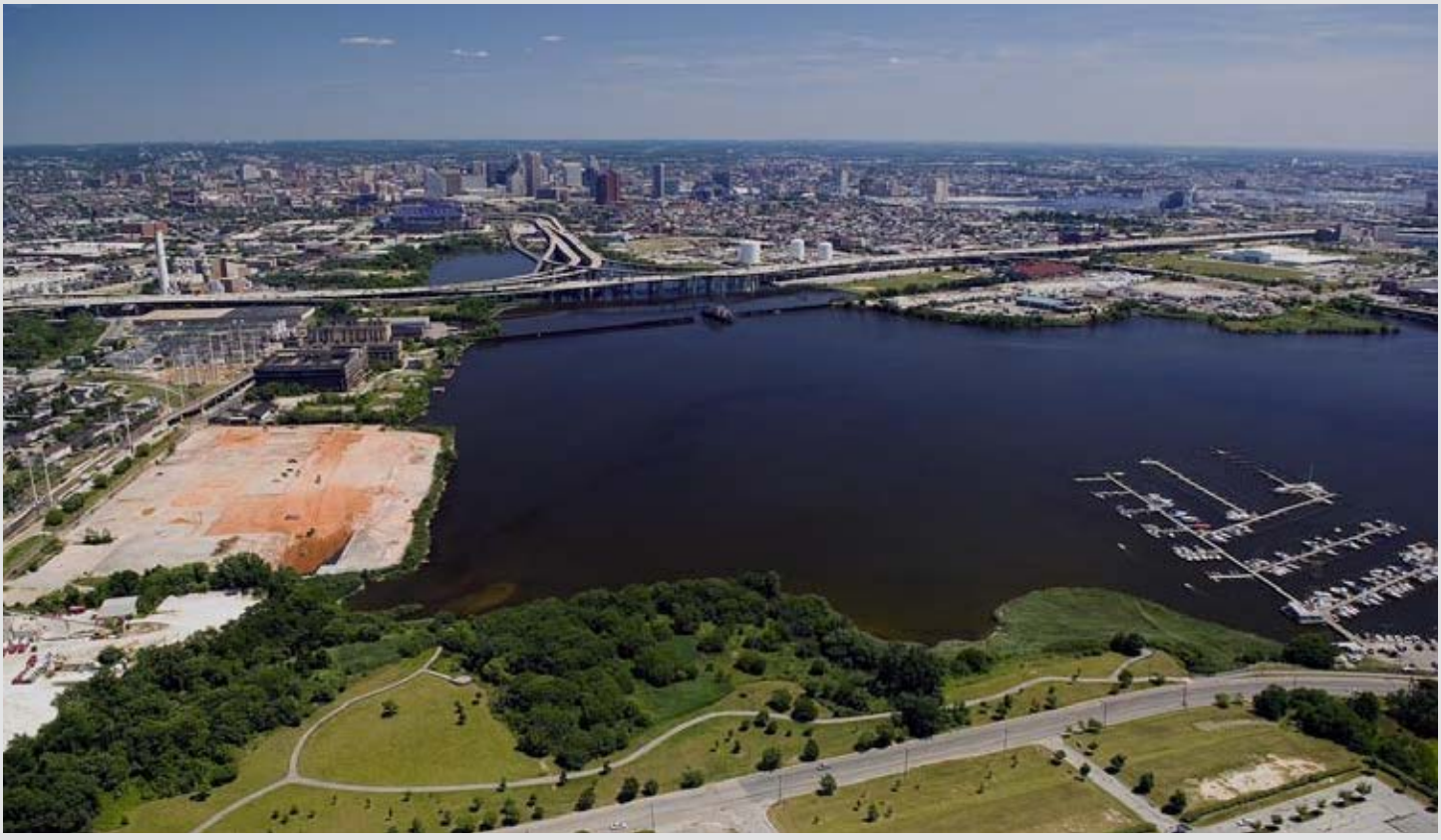
2 Centers for Disease Control. 2005 Youth Risk Behavior Survey. Available at http://www.cdc.gov/HealthyYouth/yrbs/index.htm. Accessed January 30, 2008.

3 (SOTB 2007: http://www.cbf.org/site/DocServer/2007SOTBReport.pdf?docID=10923)

quent inhaler medication use. Lead poisoning is another example of an indoor pollutant found in Baltimore homes and buildings. Lead dust is often invisible, but when ingested or inhaled can lead to irreversible damage to the brain and nervous system. In addition, pesticides used in indoor environments are associated with increased respiratory symptoms, birth defects developmental, and neurological problems as well as childhood cancers. With young children spending nearly 80-90% of their time indoors and on average close to three quarters of that time is spent in the home, the safety of the home environment has a large impact on children's health.

In addition to these pollution impacts, the science demonstrating the unintended link between human behavior and climate change has never been stronger. We are facing unprecedented changes in the global climate and there is no time to waste in developing strategies to reduce our greenhouse gas emissions so that future generations will be able to enjoy the same resources we have today. Average global temperatures could increase up to eight degrees Fahrenheit by the end of the century if we continue on our current trajectory. Along with this rise in temperatures, rising sea levels, increased spread of tropical diseases such as malaria, loss of habitat, and biodiversity, and amplified intensity of extreme weather events are also predicted. In recent years, the U.S. federal government has been largely silent on climate policy, causing cities and states to take the lead in developing solutions.

The pollution of our air, water, land, and home environments ultimately affects the health of Baltimore's citizens, communities, environment, and economy. However, there are steps we can take to prevent further pollution while beginning to restore the health of our environments.



1 Reduce Baltimore's greenhouse gas emissions by 15% by 2015

Climate change is one of the greatest challenges of our time. The impacts of greenhouse gas (GHG) emissions on our climate are accelerating around the world, and we must act quickly to reduce our emissions in order to preserve our planet for future generations. Locally, Baltimore is vulnerable to the effects of climate change in the form of rising sea levels threatening real estate and infrastructure, increased cooling loads raising the cost to air-condition our buildings, and rising water temperatures threatening aquatic life. In the fall of 2008, the Baltimore Office of Sustainability completed a GHG emissions inventory for both the city as a whole and the city government as an operating entity. The next step is to prepare and implement a Climate Action Plan for Baltimore that will identify the most cost-effective means of reducing our consumption-based emissions by at least 15% from current levels by 2015.

Strategy A

Create a Climate Action Plan for the City of Baltimore

Prepare a Climate Action Plan for Baltimore with specific short, medium, and long-term consumption-based targets that are based on thorough cost-benefit analyses. The plan will include a comprehensive list of actions spanning the goals of the Sustainability Plan, a built-in system of accountability, an assessment of the risks to Baltimore associated with the effects of climate change, and strategies to minimize the impact of those risks.

The first step to creating a Climate Action Plan, conducting a GHG emissions inventory, was completed by the Office of Sustainability in the fall of 2008. A more in-depth analysis will help identify the most cost-effective and feasible means of meeting our emissions reduction targets. The team developing the Climate Action Plan will strive to collaborate with neighboring jurisdictions to develop a strategy that benefits the entire region. Once completed, this document will include:

- Baseline emissions inventory
- Emissions forecast
- Chosen emissions reduction targets
- Description of implemented emissions reduction measures
- Description of new or proposed actions, together with existing measures, will enable Baltimore to meet its emissions reduction targets
- Implementation strategies for each proposed measure identifying costs, responsibilities, schedules, funding sources, etc.
- Procedures for monitoring progress made toward the achievement of the target and the status of implementation of the GHG reduction actions

Short-term

Policy

City Funds; Grant Programs

BOS, Baltimore Energy Office (BEO), Neighboring Jurisdictions

"Anything else you're interested in is not going to happen if you can't breathe the air and drink the water. Don't sit this one out. Do something."

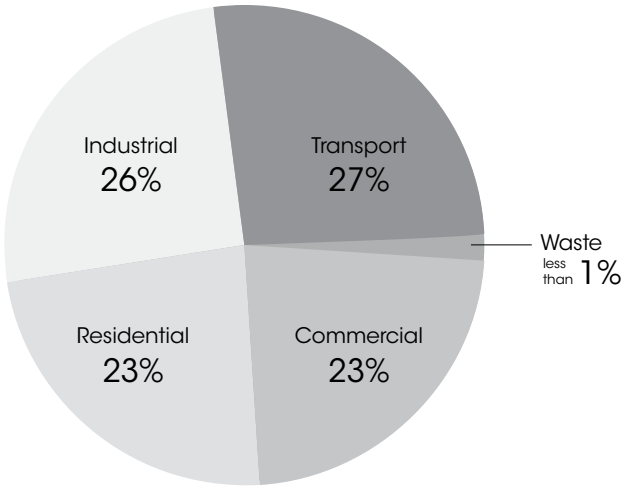
– Carl Sagan

Strategy B

Implement Climate Action Plan for the City of Baltimore

Implement Baltimore's Climate Action Plan to meet short, medium, and long-term consumption-based targets. Proposed actions will likely include a combination of policy, operations, capital, education, and technological recommendations to both mitigate and adapt to climate change impacts. Comprehensive engagement of the entire Baltimore community and neighborhing jurisdictions will assist with the effective implementation of the plan.

- Ongoing
- Policy/Operations, Partnership
- City Funds; State and Federal Funds; Private Funds; Partnerships; Grant Programs
- Mayor & City Council, BOS, BEO, Non-governmental organizations (NGO) and Private Partners, Neighboring Jurisdictions



2007 Baltimore Community Greenhouse Gas Emissions by Sector

2 Improve Baltimore's air quality and eliminate Code Red days

Many of the issues impacting air quality in Baltimore are influenced by factors outside of the city. However, there are actions we can take locally to help improve the air we breathe. The EPA has created an Air Quality Index that is used to track and report daily regional air quality. A Code Red designation is applied on days when outdoor air quality is deemed unhealthy for everyone and limiting outdoor activities is recommended. Code Orange designation is applied on days when the air quality is deemed unhealthy for sensitive populations such as children and older adults. In 2007, Baltimore experienced four Code Red and 23 Code Orange days. Baltimore City, along with several other local jurisdictions in Maryland, is currently out of attainment with federal fine particle pollution standards. This goal challenges Baltimore to eliminate Code Red days, minimize Code Orange days, and bring Baltimore into compliance with federal air quality standards.

Strategy A

Add air quality and climate change implication evaluation to all government-funded projects

Require evaluation of air quality and greenhouse gas emission impacts for all City-sponsored capital projects in Baltimore. Understanding the public health and climate change implications of projects will help align decision-making processes with the best interest of the environmental, human, and economic well-being of the Baltimore community.

- Short-term
- Policy
- Cost-Neutral
- All City agencies

Strategy B

Create Code Red/Orange day policies

Implement policies and support informational campaigns to convince citizens and business to defer certain high-polluting, non-essential activities on forecasted Code Red and Orange days. Incentives to consider during these days include free ridership on public transit to discourage the use of personal automobiles.

- Short-term
- Legislative; Policy Operations
- Funding Analysis Needed
- Mayor & City Council, State, Federal Agencies, Maryland Transit Authority (MTA)

Strategy C

Explore options for more efficient fleet conversion

Establish a working group that will explore all options for requiring that city government, city taxis, the MTA, and large businesses and institutions operating in Baltimore City convert their fleets to more efficient vehicles. Consider implementation of policies that will require the purchase and/or lease of conventional, hybrids, electric-drive, or alternative fuel vehicles so that 50% of the fleet vehicles are in the top 10% of efficiency in their weight class by 2015.

- Short-term
- Partnership, Legislative
- Existing Program Funds
- BOS, Fleet Management, MTA, Local Institutions

Strategy D

Institute and enforce a city-wide no-idling policy

Institute and enforce a no-idling policy for all public and private vehicles in the city, including ships and trucks at the port. Each day, Americans waste approximately 3.8 million gallons of gasoline by voluntarily idling their cars. This strategy will mitigate the waste of fuel, the release of air pollutants into the environment, damage to automotive engines, waste of gasoline, and noise pollution.

- Ongoing
- Policy
- Cost-Neutral
- Parking Authority, Port Authority, Department of General Services, City Schools

3 Ensure that Baltimore water bodies are fishable and swimmable

In accordance with the federal Clean Water Act, Baltimore is striving to restore our water quality to fishable and swimmable levels by 2020, a very aggressive goal given the challenges we are facing. Baltimore has thousands of stormwater outfall pipes that drain our streets and private land. Many contain sewer leakage as well as other pollutants and chemicals. Trash also washes from streets into these stormwater pipes, ultimately reaching Baltimore streams and our harbor. Baltimore Harbor is the 'bottom of the bowl,' where most regional stream systems empty into. To reach our goal, we must employ a variety of creative strategies which include the watershed land in both Baltimore City and surrounding jurisdictions.

Strategy A

Implement recommendations in the City County Watershed Agreement

The Watershed Agreement emphasizes the importance of interjurisdictional cooperation and identifies 11 distinct strategy areas with specific recommendations for water quality improvements. The Agreement can be accessed at www.baltimorecountymd.gov/Agencies/environment/watershedagreement/index.html. The Sustainability Plan recommends identification of specific tactics to address the following objectives:

Conduct an analysis of the existing city codes to identify and remove regulatory barriers to water quality improvements.

Coordinate with Baltimore County to develop joint strategies for regional scale water quality improvements.

Eliminate trash from our waterways.

- Ongoing
- Variable
- To be determined as program is implemented
- City and County Government Agencies, Watershed Organizations

Strategy B

Study creation of a stormwater utility or other new funding sources

A stormwater utility would function similiarly to Baltimore's existing water and wastewater utilities and would fund maintenance and improvements to Baltimore's water quality system. The utility would assess a fee related to stormwater pollution and use those fees to support new water quality improvements and to maintain existing structures and systems. A draft technical report was commissioned and written by a private consultant which can be used as a resource. It provides a partial discussion on the analysis and development of rate and revenue projections.

- Mid-term
- Policy/Operations
- Existing Program Funds
- DPW

"No one has the right to use America's rivers and America's waterways, they belong to all the people, as a sewer. The banks of a river may belong to one man or one industry or one state, but the waters which flow between the banks should belong to all the people."

– President Lyndon B. Johnson

Strategy C

Reduce amount of impervious surfaces and increase on-site stormwater treatment

Ensure that the Maryland Department of the Environment's stormwater permit requirements are met by requiring the reduction or treatment of at least 50% of redevelopment sites' exisiting impervious area. Identify and implement targeted technologies to reduce existing impervious surfaces. Impervious surfaces increase the volume of rain water and pollutants that enter stream systems during storms, causing stream bank erosion and sediment and pollutant discharge into the harbor and bay. Examples of ways to treat stormwater on-site include planted medians in streets, green roofs, and 'green' alleys made of porous asphalt that allows rainwater to seep through, thus not adding to stormwater volume that flows off-site.

- Mid-term
- Policy; Capital
- Mitigation Fees; City, State and Federal Funds; Grant Programs
- DPW, Department of Planning (DoP), Department of Transportation (DoT), NGOs

Strategy D

Protect and restore Baltimore's stream corridors

Restore and stablize Baltimore's streams to prevent erosion and restore habitat. Baltimore's streams have been severely eroded and degraded by changes in drainage patterns caused by development in the surrounding watersheds. Stream restoration projects manage stormwater flow and restore stream channels by widening and greening them, adding rock weirs, or changing their configuration. These changes allow for replanting of vegetation and creation of 'pooling' areas for fish and other wildlife.

- Long-term
- Capital; Partnership
- Mitigation Funds; Grant Programs; City, State and Federal Funds
- DPW, Local Watershed Organizations

Strategy E

Create watershed-based natural resource management plans

Create and implement watershed specific plans to more effectively organize environmental and planning efforts for system-wide improvements. Study and document existing conditions and opportunities for environmental improvements within Baltimore watersheds to identify more environmentally-sensitive development plans that concentrate restoration efforts in areas that will provide the most benefit.

- Short-term
- Policy/Operational; Planning
- Grant Programs
- BOS, DPW, DRP, Maryland Pesticide Network, Local Watershed Organizations and other Non-Government Partners

Strategy F

Increase actions by individual property owners to treat stormwater

Educate residents and businesses about small-scale storm water management. The majority of land in Baltimore that is part of our stormwater drainage patterns is privately owned, yet only a very small percentage of this land is improved for stormwater treatment. Small scale improvements such as rain barrels, rain gardens, tree planting, downspout disconnections, and trash management would help improve water quality significantly.

- Short-term
- Education
- Grant Programs
- City Government, Watershed Organizations, State Government

4 Reduce risks from hazardous materials

Scientific research continues to show that commonly-used chemicals including pesticides, ingredients in household products, and synthetic fertilizers, as well as waste materials from homes, businesses, and industry are even more serious hazards to human and environmental health than previously recognized. All who live, work, and visit in Baltimore would benefit from a concerted effort to reduce the presence of hazardous materials in our environment. Strategies for reaching this goal will be guided by the Precautionary Principle, which states that policies and actions should protect people and nature from harm by requiring proven safety of products before they are used or handled, rather than waiting until proven harm is established in order to remove such products.

Strategy A

Adopt the "Precautionary Principle" as the underlying policy standard

Promote the adoption of the Precautionary Principle throughout Baltimore in government, institutions, businesses, and residences by advancing management, procurement, and waste disposal standards that seek to avoid exposure to toxic chemicals. City government will lead the effort by providing people with accurate information about the documented hazards of products and chemicals in common use and about the limitations of consumer protections in place at other levels of government.

- Short-term
- Policy
- Cost-Neutral
- BoS, Department of Health (DoH)

Strategy B

Adopt a policy and plan for elimination of pesticide use and other toxic chemicals

Institute a policy in City-owned and leased properties and land to eliminate the use of toxic chemicals using such methods as Integrated Pest Management (IPM) and organic landcare. The policy should embrace preventive non-chemical strategies as a priority, define acceptable least toxic chemicals to be used only as a last resort, and prohibit chemicals that are known to cause adverse health and environmental effects, including cancer, neurological effects, reproductive impacts, immune and respiratory system damage, and water contamination. Encourage IPM and organic land care for all hospitality-oriented industries including hospitals, elder care facilities, restaurants, and hotels.

- Short-term
- Legislative, Policy/Operations
- Cost-Neutral
- Mayor and City Council, BoS, Maryland Pesticide Network, Private Sector and Institutional Partners

Strategy C

Comply with the Maryland Integrated Pest Management (IPM) in Schools mandate

Assist city public schools with full compliance on best practices mandated by the MD-IPM in Schools law and promote the adoption of IPM by the city's private schools. Educate school administrators, facility managers, and purchasing staff on how IPM has been found to be an effective non-toxic approach to reducing rodent and insect infestations as well as improving energy conservation.

- Short-term
- Education, Operations
- Cost-Neutral
- BCPSS, Public School Partners, DoH

Strategy D

Enact an ordinance prohibiting the use of known toxins in health care delivery settings

Prohibit the use of toxins and chemicals designated as such by the US EPA; the International Agency for Research on Cancer (IARC); the US National Toxicology Program (NTP); and the State of California Proposition 65 in all health care facilities in Baltimore City. Promote the findings of Healthcare Without Harm and efforts of the Maryland Hospitals for a Healthy Environment (MdH2E) project at the University of Maryland School of Nursing and the Maryland Pesticide Network to all health care organizations.

- Short-term
- Legislative, Education
- Cost-Neutral
- BCS, DoH, Maryland Hospitals for a Healthy Environment, Maryland Hospital Association

Strategy E

Aggressively promote the redevelopment of Brownfield sites

Develop and implement appropriate incentives to redevelop Brownfield sites, including the use of tax credits and site assessment assistance. Identify means by which these programs can be augmented. Brownfields, sites complicated by the presence or potential presence of a contaminant, are common in Baltimore. These sites are often vacant or abandoned and have uncontrolled contaminants that pose risks to public health and the environment. Responsible clean up and redevelopment minimizes environmental and health hazards, increases the City's tax base, and serves as an engine for smart growth.

- Ongoing
- Legislative, Policy/Operations
- Federal Funds, State Funds, City Funds
- Baltimore Development Corporation (BDC), Private Sector

5 Improve the health of indoor environments

Americans spend close to 90% of their time indoors. Hazards found in indoor environments including lead, carbon monoxide, mold, allergens, radon, and second-hand smoke can pose a serious threat to the health and productivity of building occupants. Effects can be especially detrimental to children. Areas with older building stock, like Baltimore, often face heightened risk of indoor contamination. Underserved communities in Baltimore City are at particular risk due to increased exposure to pesticides used in housing developments and increased health problems such as asthma. Pesticides used in housing developments have been found to cause developmental delays, hyperactivity, motor dysfunction, behavioral disorders, and brain cell death. Asthma rates among urban children from lower socioeconomic areas have reached epidemic proportions. While asthma may be exacerbated by the remains of insect and rodent pests, many of the pesticides used for pest control can trigger asthmatic attacks. Great strides have been made in Baltimore to reduce lead poisoning in children and second-hand smoke in public buildings, but more work needs to be done to safeguard the health of residents and employees.

Strategy A

Use green cleaning products in schools, government offices, and businesses

Purchase and use green cleaning products in all City-owned and leased facilities. Evaluate the federal government's procurement policy to consider adopting some or all of them. Develop educational programs to help businesses shift to green cleaning products to reduce the risks of exposure to chemicals in commonly-used cleaning products that are now linked to cancer and skin and lung irritation in cleaning staff and building occupants. Promote demand for green cleaning products to create opportunities to manufacture and distribute these products locally.

- Short-term
- Policy/Operations
- Cost-Neutral
- Department of General Services (DGS), BCPSS, Private Sector

Strategy B

Explore the feasibility of making all Baltimore multifamily dwellings smoke-free by 2010

Evaluate policies already in effect in California, Boston, and other jurisdictions that make multifamily dwellings smoke-free to protect disabled and vulnerable populations from exposure to harmful second hand smoke. Educate residents and owners about fire risk reduction as an added benefit of these policies. Those steps would help prepare Baltimore for the smoke free housing requirements HUD is likely to enact in the future.

- Short-term
- Legislative, Advocacy, Operations
- Cost-Neutral
- Housing Authority of Baltimore City (HABC), Mayor & City Council, Baltimore City Fire Department, Property Owners Associations

Strategy C

Increase and coordinate all healthy housing efforts

Unsafe and unhealthy indoor conditions threaten the welfare of many Baltimore families and individuals. Often these conditions are only addressed once they have had consequences for human health. Instead we should seek to proactively make hundreds of homes safe and healthy for low-income Baltimore residents. Baltimore City can maximize its ability to secure federal lead remediation and other healthy housing funds by providing matching dollars and demonstrating effective enforcement.

- Short-term
- Capital
- City Funds, Federal Funds; Grant Programs
- HCD, DoH, BDC, Coalition to End Childhood Lead Poisoning

Strategy D

Ensure coordination among weatherization, lead remediation, and healthy homes activities

Analyze national models for joint weatherization, lead remediation, and healthy homes interventions to inform a Baltimore approach to this work and then develop a Baltimore specific plan. Addressing energy efficiency, safety, and health needs simultaneously will maximize community benefits and cost-effectiveness.

- Mid-term
- Policy/Operations
- Cost-Neutral
- HCD, DoH, BoS, Community Organizations, BGE

Chapter 6

Resource Conservation

Goal 1 Reduce Baltimore's energy use by 15% by 2015

Goal 2 Reduce Baltimore's water use while supporting system maintenance

Goal 3 Minimize the production of waste

Goal 4 Maximize reuse and recycling of materials

Resource Conservation

Our current consumption of natural resources is simply unsustainable. The world's population is predicted to increase by 3 billion people in the next 50 years, yet the natural resources the earth's inhabitants must rely upon for basic needs are rapidly depleting. In order to thrive into the future, the Baltimore community must learn to use natural resources more wisely and efficiently.

Impacts of the rising global demand for energy, water, raw materials, and land are felt locally, right here in Baltimore. As population and energy demand in our region continue to grow, the state of Maryland will face a shortage in electrical capacity.[4] There are two impending outcomes if Maryland does not address this state-wide shortfall in energy generating capacity: rising electric rates and the possibility of service interruption in the form of blackouts and brownouts.[5] If the gap between supply and demand continues to widen as it is predicted to do, by 2012 prices will likely continue to increase and it may become impossible to meet Maryland's electricity needs.[6] Building more power plants to fill this gap not only has major environmental and siting challenges, it is also very expensive. Reducing our energy use is the more economically, socially, and environmentally sound response to this challenge.

Excessive waste of potable water is another unsustainable habit which warrants attention. While the Baltimore region enjoys relatively plentiful rainfall and water sources, climate change, population increases, and global demand for water resources threaten to challenge this situation. Climate change is predicted to create longer periods of drought, shifting the patterns of rainfall which we have come to rely upon. Based on projections of population increases throughout the U.S., over 30 states, including Maryland, will face some kind of water shortage by the year 2013.[7] In addition, a great deal of energy is required to treat and deliver water to end-users in homes and businesses and to collect and treat wastewater after use. As a result, improving the efficiency of Baltimore's water treatment and delivery system has the potential to significantly reduce energy demand and greenhouse gas emissions from water and wastewater processes. Not only will more efficient practices help the environment, but it also reduces everyday costs—the average U.S. household spends $500 per year on water and sewer bills.[8]

The current pace of logging, mining, refining, and transporting natural resources and other materials for consumption is also not sustainable, and those communities that create ways to do more with less will be more likely to prosper in the future. As the global demand for raw materials such as timber, metals, and minerals continues to escalate, finding ways to conserve materials will become increasingly critical. Not only will reducing, reusing, and recycling materials alleviate the pressure to cut down forests and mine land, these strategies can also prevent unnecessary landfill buildup and reduce the need for new landfill creation. The amount of waste Americans create per person per day has nearly doubled since 1960;[9] and right here in Baltimore, the City's Bureau of Solid Waste disposes 750 tons of trash everyday.[10]

The City of Baltimore has made great strides in the area of recycling. Since the introduction of single-stream recycling in January 2008, Baltimore's recycling has increased by more than 30%, yet there are still many individuals, businesses, and institutions that throw recyclable materials out with the trash. In addition to its environmental benefits, recycling makes good financial sense. Roughly half of all household trash can be recycled and therefore holds value.[11] For example, recycling an aluminum can save 95% of the energy required to make another from raw materials. While throwing away recyclable materials such as glass or plastic bottles costs taxpayers money in the form of tipping fees, recycling that same bottle actually creates a revenue stream for the City. Recycling and material reuse industries also have great job creation potential. One local company, CDM E-cycling, which re-

cycles electronics equipment, employs nearly 100 people and helped divert 9.5 million tons of electronics from landfills in 2007.

Baltimore City is densely developed, with a majority of its buildings over 50 years old. This building stock represents a significant investment in embodied energy that went into making and transporting materials and erecting the buildings. Many of the city's older buildings also contain sustainable elements and designs that include the use of local materials, natural ventilation, and energy-efficiencies such as row house construction, which provides two-sided insulation by design. "Recycling" older buildings by preserving and reusing them utilizes this embodied energy, builds on traditional sustainable practices, and reduces the amount of construction waste entering our landfills when buildings are demolished. The Baltimore Comprehensive Master Plan (Comp Plan) LIVE Goal 2, Objective 4: Protect and Enhance the Preservation of Baltimore's Historic Buildings and Neighborhoods lays out seven specific strategies that will help the city conserve our historic resources.

Conserving energy, water, and materials protects natural resources, saves money, creates jobs, and helps equip communities to deal with shortages in the future, ultimately creating a more sustainable future.

4 http://www.pulp.tc/MDPSCInterimReport-totheMDGA12-6-07.pdf

5 http://www.pulp.tc/MDPSCInterimReport-totheMDGA12-6-07.pdf

6 http://www.pulp.tc/MDPSCInterimReport-totheMDGA12-6-07.pdf

7 http://www.epa.gov/watersense/water/why.htm

8 http://www.epa.gov/watersense/water/benefits.htm

9 http://www.epa.gov/epawaste/conserve/rrr/reduce.htm

10 http://www.ci.baltimore.md.us/government/dpw/waste.php

"To waste, to destroy, our natural resources, to skin and exhaust the land instead of using it so as to increase its usefulness, will result in undermining in the days of our children the very prosperity which we ought by right to hand down to them." — Theodore Roosevelt

1 Reduce Baltimore's energy use by 15% by 2015

Reducing our electricity consumption can help improve our air quality, reduce our dependence on foreign fuels, curb our greenhouse gas emissions, prevent the construction of more power plants, reduce the risk of blackouts, and save us all money on electric bills. By equipping our buildings to use less energy and informing our community how to conserve, we can mitigate the effects of potential price increases in the future. These efforts align well with existing state and federal programs such as the EmPOWER Maryland Initiative, Governor O'Malley's goal of reducing electricity consumption in the state by 15% by the year 2015, and the EPA's ENERGY STAR program of which the City of Baltimore is a member.

Strategy A

Require aggressive energy efficiency standards as part of the Baltimore Green Building Standards

Incorporate energy efficiency building standards into the original green building standards for commercial and multi-use projects over 10,000 sq ft that Baltimore is creating. Making a building energy efficient is most cost-effective when done during initial construction. The standard that Baltimore is creating should include stringent energy requirements to help newly constructed and extensively modified buildings insulate their operating costs from future spikes in energy price and reduce their contribution to climate change.

- Short-term
- Standards
- Cost-Neutral
- Green Building Consulting Team, Housing and Community Development (HCD), BOS

Strategy B

Improve the energy efficiency of existing homes and buildings

Institute programs to help Baltimore's existing building stock, most of which is decades old, use energy more efficiently. Home weatherization is one of the most cost-effective ways to improve energy efficiency. Consideration should be given to a range of policies and programs, including the use of financial incentives when appropriate. Priority should be given to low-income and public housing structures. For commercial buildings, ENERGY STAR's free Portfolio Manager tool will be recommended as a great first step to measure and improve energy performance in existing structures.

- Short-term
- Partnership
- State and Federal Funds; Grant Programs
- BOS, Mayor and City Council, Commission on Historic and Architectural Preservation (CHAP), Civic Works, Baltimore Gas and Electric (BGE)

Strategy C

Increase renewable energy generation in Baltimore City

Create more renewable energy capacity within Baltimore City as a means of reducing demand on the electric grid, air pollution from power plants, and our contribution to climate change. There are plans to create up to 7MW of renewable power by methane-capture technology at the City's two wastewater treatment facilities. In addition to these efforts, Baltimore should strive to increase both small and large scale renewable energy sources such as wind, solar, and geothermal to a combined capacity of 50MW by 2020.

- Long-term
- Partnership, Capital
- State and Federal Funds, Private Sector
- BGE, BEO

Strategy D

Mandate efficiency upgrades to homes at point of sale

Many of the current energy and water efficiency codes were not in place when Baltimore's homes were built; therefore, many homes do not meet current standards and operate in an inefficient and costly manner. Mandating efficiency improvements to bring buildings into compliance with current codes at the point of sale can help ensure that buyers are investing in a property that uses resources affordably and efficiently.

- Mid-term
- Legislative, Standards
- Funding Analysis Needed
- BCS, Mayor & City Council, CHAP, Live Baltimore, Real Estate Organizations

Strategy E

Increase energy conservation by residents, City government, businesses, and institutions

Promote energy conservation. Designing and building energy efficient systems is only half the battle, individuals must use these systems and our resources efficiently as well. We can help motivate this change in behavior by tapping into existing marketing resources, such as ENERGY STAR, and tailoring these materials to Baltimore City. Creating a multi-sector energy challenge to engage and motivate citizens, businesses, and institutions can help accomplish this goal citywide.

- Short-term
- Education
- City, State and Federal Funds; Private Sector; Grant Programs
- BOS, BEO, BGE, NGOs

Strategy F

Dedicate resources to assist Baltimore in leveraging state and federal funds for energy efficiency

Provide the BOS and/or the BEO with informational resources to offer assistance to residents and businesses as they apply for state and federal funds for energy efficiency and renewable energy projects. Develop expertise within City agencies to enable the staff to provide assistance to citizens who are pursuing State and Federal funds.

- Short-term
- Education, Advocacy
- Cost-Neutral
- BOS, BEO

Strategy G

Investigate a "Lights Out" policy for appropriate areas of Baltimore City

Turning off non-essential lighting between approximately 10 p.m. and 6 a.m. can drastically reduce energy use. In addition to the financial and environmental costs of energy use, unnecessary lighting produces light pollution which obscures views of the night sky and negatively impacts migratory birds, especially during their spring and fall migration. Lights Out programs have been implemented in cities nationwide including Boston[1], San Francisco, and New York.

Other City "Lights Out" Programs

Boston	www.cityofboston.gov/environmentalandenergy/lightsoutboston.asp
San Francisco	www.lightsoutsf.org
New York	www.environmentalleader.com/2008/11/05/new-york-city-dims-skyscrapers/

- Short-term
- Legislative, Policy/Operations
- Cost-Neutral
- BOS, BEO, Downtown Partnership, Real Estate Community, Local Institutions

2 Reduce Baltimore's water use while supporting system maintenance

The Baltimore City Bureau of Water and Wastewater operates and maintains three reservoirs and three water filtration plants to distribute an average of 265 million gallons of drinking water in Baltimore City and surrounding counties daily. Not only does excessive water use deplete our freshwater supplies, it also requires significant amounts of energy to treat and deliver water and then to collect and treat wastewater. According to the EPA, letting a faucet run for five minutes requires as much energy as lighting a 60-watt bulb for 14 hours. Proper protection and wise use of our water resources, along with maintenance of the City's water supply system, will help sustain this system so that Baltimore residents can continue to have clean, readily-available water for generations to come.

Strategy A

Conduct public education program on reducing water consumption

Develop programs to inform and educate Baltimore residents about water use for purposes like landscaping, clothes and car washing, and bathing to help promote more sustainable behavior. Seemingly minor choices made everyday can culminate into substantial water savings.

- Short-term
- Education
- Grant Programs
- DPW, BOS, NGOS

Strategy B

Study methods to fund the construction and maintenance of Baltimore's water supply system

Examine Baltimore City's current rate structure to assure that sufficient funding is available to maintain and manage the existing system while also encouraging conservation through tiered use rates or other methods. This is critical because safe and available drinking water depends on adequate source protection, treatment, and distribution systems.

- Short-term
- Policy/Operations
- Existing Program Funds
- DPW

Strategy C

Maintain a comprehensive water facilities master plan

Develop and implement a long-term strategy to protect the water supply system cost effectively. This would include identification of areas where growth requires expansion and creation of a strategy for pipe replacement due to age. A comprehensive strategy will also help explain the costs of creating the water rate structure and maintaining a public document explaining long-term system maintenance issues.

- Mid-term
- Policy/Operations
- Cost-Neutral
- DPW, Maryland Department of Planning, Maryland Department of Environment

"Enough is as good as a feast."

– Mary Poppins

3 Minimize the production of waste

Approximately one-third of all the trash that is thrown away in the U.S. is packaging, and the average American consumes about 66 pounds of packaging each year. There really is no such thing as throwing something "away," the material ends up somewhere, most likely a landfill or another environmentally-unsustainable area. By addressing how waste is generated, Baltimore can reduce the amount of non-recyclable, non-organic, non-combustible materias used and ultimately sent for disposal. Not only are landfills expensive to create and maintain, they generate groundwater pollution and take up vast amounts of land. They also are a serious environmental justice issue because most landfills are placed near lower income communities. If consumers, institutions, and businesses understand the lifecycle of products and materials, they will be more likely to adopt a set of best management practices which limit the amount of materials entering the waste stream.

Strategy A

Distribute information on waste-reducing purchasing policies

Assist all businesses in Baltimore in making sustainable purchasing decisions by providing clear and adaptable information on how to purchase goods with less packaging and more potential to reuse or recycle materials. While examples of such policies and guidelines already exist, more can be done to promote and distribute these examples to area institutions and businesses.

- Short-term
- Education
- Grant Programs
- BOS, Chesapeake Sustainable Business Alliance (CSBA), BDC, Baltimore Mainstreets Program, and Other Business Organizations

Strategy B

Establish Baltimore City Green Purchasing guidelines

Study Baltimore's existing purchasing policies and needs and make recommendations to improve specifications to meet sustainability objectives. Areas of focus can include purchasing office supplies that require less packaging, equipment that uses less energy, and printers that use less toner and paper.

- Short-term
- Policy & Operations
- Cost-Neutral
- BOS, Bureau of Purchasing, Department of Finance

Strategy C

Educate consumers about product lifecycle analysis

Use lifecycle analysis to inform more sustainable purchasing decisions. Lifecycle analysis evaluates where the raw materials for a product come from, how they were processed and transported, how the product is used, and what happens to it at the end of its life. This type of evaluation allows the purchaser to weigh options based on the internal and external costs over the life of the product. Developing tools and methods to educate the Baltimore community about this type of decision making will help help reduce the amount of waste generated from packaging, building, and product disposal.

- Mid-term
- Education
- Fundraising Needed
- BOS

Strategy D

Link industrial and commercial users to close waste loops

Create mechanisms to link local industries and processors to help develop markets for byproducts, leading to fewer materials being considered waste, and reducing the cost of materials for buyers. The byproduct of one entity can often be used as the input for another.

- Mid-term
- Education, Partnerships
- Grant Programs
- BOS, Northeast Maryland Waste Disposal Authority (NEMWDA), BDC

Strategy E

Expand Baltimore's composting program and opportunities

Create public/private partnerships to locate new composting facilities and expand existing operations to compost residential yard and food waste and commercial food waste to the greatest extent practical.

- Mid-term
- Partnerships, Operations, Capital
- Partnerships, Grant Programs; City Funds
- BOS, NEMWDA, DPW, Composting Businesses

Strategy F

Develop and implement local legislation related to waste minimization

Study and introduce legislation related to waste reduction, litter prevention, and regulatory enforcement to support creative approaches to making Baltimore waste neutral. Baltimore can both learn from the policy successes and failures of other local jurisdictions and demonstrate national leadership for innovative waste reduction legislative proposals.

- Short-term
- Legislative
- Funding Analysis Based on Individual Legislation Introduced
- Baltimore Commission on Sustainability (BCS), Mayor and City Council

"The future belongs to those who understand that doing more with less is compassionate, prosperous and enduring and thus more intelligent, even competitive." –Paul Hawken

4 Maximize reuse and recycling of materials

Baltimore has made great strides forward with its city-wide, single stream recycling program. IThe program continues to expand the types of material it accepts. The expansion of materials accepted into the program combined with an increase in recycling rates will not only reduce the amount of material entering the waste stream, it will also generate revenue and jobs. For every 1,000 tons of waste diverted, 4.7 jobs are created compared to only 2.5 jobs for every 1,000 tons of waste disposed.

Strategy A

Increase recycling opportunities throughout the City

Support existing pilot programs to maximize placement of recycling bins around the City. Move toward full distribution of recycling bins throughout the City as funding becomes available. Improve access to businesses and institutions recycling products beyond the existing single stream program, such as electronics.

- Short-term
- Policy/Operations
- CleanerGreener Baltimore Initiative; Private Sector
- DPW, NGOs, Private Sector

Strategy B

Increase resident and business participation in the single stream recycling program

Research the recycling operational needs of local businesses and multi-family housing buildings that currently receive trash servcies from the City of Baltimore. Use this information to modify operations to encourage their participation in the recycling program.

- Short-term
- Partnerships, Education
- CleanerGreener Baltimore Initiative
- DPW, Downtown Partnership, NGOs, Private Sector

Strategy C

Expand types of materials accepted by the single-stream recycling program

Coordinate with local recycling operations to find new markets for materials not currently accepted by Baltimore City's recycling processor. As markets and technologies allow these materials to be added to the single-stream program, communicate the news to those participating in the program.

- Short-term
- Partnership, Education
- CleanerGreener Baltimore Initiative
- DPW

Strategy D

Preserve, reuse, and recycle buildings and related materials

Develop a standard approach to evaluate the potential to reuse and/or recycle salvageable buildings and materials in a sustainable manner. Much of Baltimore's existing building stock contains significant embodied energy (the sum of the energy required to create, harvest, process, and transport materials) and is made up of high quality materials that may have historical significance or are difficult or expensive to find today. Preserving buildings can reduce construction and demolition waste sent to landfills and conserve natural resources. There are also markets to reuse and recycle deconstructed building materials. The City should consider requiring a "Resource Preservation Plan" from development teams for projects requiring the deconstruction or demolition of existing buildings.

- Short-term
- Legislative, Operations
- Cost-Neutral
- BOS, CHAP, Loading Dock, NGOs, Business Partners

Strategy E

Institute once weekly recycling and once weekly trash pick up service

Shifting from two weekly trash pick ups and semi-weekly recycling pick up to once weekly pick up of both (1+1) service will encourage recycling and will allow the City to shift funding to more sustainable programs and efforts. More than half of all household "waste" can be recycled. A 1+1 program will continue to provide twice weekly pick ups, yet households will no longer have to store their recycling materials for multiple weeks.

- Short-term
- Legislative, Operations
- Saves Money
- DPW, Mayor & City Council

Chapter 7

Greening

Goal 1 Double Baltimore's Tree Canopy by 2037

Goal 2 Establish Baltimore as a leader in sustainable, local food systems

Goal 3 Provide safe, well-maintained public recreational space within ¼ mile of all residents

Goal 4 Protect Baltimore's ecology and biodiversity

Greening

Long before modern engineering created air conditioning, sewer systems, and water and air purification technology, nature provided similar services through shade trees, grass, wetlands, and forests. Practicing good stewardship of our natural world improves the ability of future generations to eat fresh food, breath clean air, drink healthy water, and enjoy open space.

A green city enjoys significant health, infrastructure, and economic advantages. Increased tree coverage, local food systems, availability of recreational spaces, and healthy ecosystems are key components to creating a greener Baltimore. Trees are not plentiful in many areas of Baltimore City, yet urban forestry provides a host of very valuable benefits. Studies have shown that areas with more trees have lower asthma rates among children. Trees provide welcomed shade in the summertime, reducing the urban heat island effect and reducing air conditioning needs for buildings and cars. In addition, urban forestry offers bird habitat, improves air quality, and absorbs greenhouse gas emissions, helping to reduce climate change.

A green city also provides better access to more sustainable food sources. For example, the average American meal travels roughly 1500 miles to get from farm to plate. This is unsustainable for a number of reasons. Transporting food over long distances is expensive due to fuel costs and contributes to climate change through the release of greenhouse gases from shipping and trucking. The increasing disconnect between where the food we eat actually comes from and how it is produced, further separates us from the natural systems we rely upon for survival. There is a growing movement to utilize urban land for agriculture as a means of providing fresh food to communities. This would reduce fuel use and greenhouse gas emissions, while reconnecting children and adults to nature, and educating people about nutrition. Local farmers markets are another means of increasing the sustainability of our food systems. Farmers markets provide access to fresher, locally grown or produced food, resulting in significantly less negative environmental impacts while supporting local economies. There are currently over 15 farmers markets in Baltimore.

Greening a city also includes creating and maintaining more green and open spaces for recreation. In addition to the health benefits of having access to recreational space, these amenities can positively impact Baltimore's infrastructure and economy. Parks, gardens, fields, and other recreational areas increase tourism and raise home values. By making universal access to recreational space a priority for Baltimore, we hope to foster stronger communities, healthier citizens, and more respect for the natural world.

A diverse ecosystem where all species, no matter how small, are protected is important to maintaining the web of life on which all living things depend. Each day, between 50 and 150 plant and animal species are estimated to be lost through extinction globally. Once a habitat, plant or animal species is lost globally or even regionally, it is very difficult, if not impossible to bring back. Healthy biodiversity contributes to water resource protection, soil health, pollution breakdown and absorption, climate stability, and natural resources such as food and medicinal ingredients. For instance, about 40% of the drugs and other pharmaceuticals we rely upon in modern medicine were developed from genetic resources of wild plants and animals. There is an intrinsic value to ecosystem health as well. Imagine Baltimore without our beloved black-eyed susans, orioles, or blue crabs.

Baltimore has the potential to be a city where our own natural resources are relied upon to provide habitat, shade, water and air purification, food, and recreational opportunities through the greening of our surroundings.

1 Double Baltimore's Tree Canopy by 2037

Trees are essential to healthy, vibrant communities. Trees are proven to stimulate economic development, clean and reduce the stormwater running into the harbor, improve air quality, reduce cooling and heating costs, and increase property values. The TreeBaltimore Initative is our city's effort to double Baltimore's tree canopy from 20-40% by 2037. With this initiative, Baltimore joins the ranks of other cities across the country that are aggressively working toward building a sustainable urban forest. The initiative will give both the public and private sectors an opportunity to take part in improving the quality of urban life. Education and outreach along with innovative incentives for private landowners will be required to reach this bold goal.

Strategy A

Assess current urban forest cover

Conduct a complete inventory of Baltimore's street, park, and school trees. In order to better manage the urban forest for its values, we must understand and quantify its health and impact on our city. We know, for example, that two large, healthy trees can provide a lifetime supply of oxygen for a family of four. The more we understand about Baltimore's urban forest, the better we can manage our trees for increased economic, social, environmental, and ecological benefits.

- Mid-term
- Policy/Operations
- City, State and Federal Funds; Grant Programs
- DRP, BCPSS, NGOs

Strategy B

Protect our existing trees

Upgrade the regulatory framework for the urban forest to reflect professional trends and standards of practice.

Many of Baltimore's regulations and policies regarding trees need updating to meet goals and standards for contemporary urban forest practices. These regulations act as the legal framework within which tree management activites are conducted. They provide a channel through which government departments interact, establish the nature and degree of public responsibilities, and dictate the standards for managing trees on public and private property.

- Mid-term
- Legislative, Standards, Policy/Operations
- Cost-Neutral
- DRP, DoP, Department of Transportation (DoT), DPW, HCD, NGOs

Strategy C

Build communication and cooperation among city agencies to support Baltimore's trees

Expand ongoing communication, cooperation, and training among city agencies and identify best management practices for urban forestry management for appropriate city agencies to implement.

- Short-term
- Standards, Policy/Operations
- Cost-Neutral
- All city agencies encountering with trees

Strategy D

Develop a city-wide education program about the value of trees

Create an outreach and education program to reach citizens regarding the benefits of trees and to teach them proper tree maintenance. Work with NGOs to increase opportunities for citizen involvement and create an interactive website.

- Short-term
- Education, Partnership, Advocacy
- Grant Programs; Federal Funds
- DRP, NGOs, Community and Citizen Volunteers

Strategy E

Develop and strengthen innovative public-private partnerships

Combine resources, expertise, and fundraising to increase the number of trees and to build capacity for the planting and care of trees.

- Ongoing
- Partnership, Advocacy
- Grant Programs, State and Federal Funds
- DRP, Downtown Partnership, NGOs

Strategy F

Identify and pursue opportunities for increasing trees planted on private property

Create market-based incentives to plant trees on private property through grants, coupons, and tree giveaways.

- Short and Mid-term
- Partnership, Education
- Existing Program Funds; Private Sector; Partnerships; Grants
- DRP, NGOs, Private Institutions, Communities, Businesses

Strategy G

Increase tree plantings in sidewalks, medians and other public right-of-ways

Create new tree wells during street resurfacing and reconstruction projects. Where appropriate, add new green medians to streets for tree planting and water quality benefits. Adopt draft landscape ordinance as part of comprehensive rezoning to assure that parking lots receive sufficient landscaping.

- Ongoing
- Capital, Partnership
- City Funds, Mitigation Funds, Partnerships
- DoT, DRP, DoP, NGOs, Community Greening Groups

2 Establish Baltimore as a leader in sustainable, local food systems

Food systems a have become important topics for public sector consideration and sustainability due to their impacts on public health, quality of life, environmental stewardship, and greenhouse gas emissions. Thoughtful planning can ensure that citizens have access to healthy, locally-produced foods. Enhancing our local food system infrastructure by establishing and supporting more small farms and urban gardens and building on creative initiatives can improve citizens' access to healthier, locally-grown food. Increased demand for locally-grown food also supports local farmers, urban agriculture, and community gardens while reducing our dependence on foreign oil and greenhouse gas emissions. Patronizing local and regional farmers through farmers markets, community-supported agriculture, and other efforts to "buy-local" also helps protect farmland and reduce sprawl. These activities strengthen the local food economy, reduce negative environmental impacts, and improve public health.

Strategy A

Increase the percentage of land under cultivation for agricultural purposes

Increase the amount of food production within Baltimore City through a variety of approaches. Modify zoning regulations to accommodate urban agricultural production and sales. Increase the number of City farms and gardens in parks, on vacant lots, school grounds, and other appropriate and available areas. Promote community gardening for food production through programs such as the existing Master Gardener Urban Agriculture Program. Lastly, develop incentives and support for urban farm enterprises.

- Mid-term
- Policy/Operations Changes
- Grant Programs; City, State and Federal Funds; Partnerships
- DPR, DoP, Parks and People, Cooperative Extension, Urban Agriculture Task Force

Strategy B

Improve the quantity and quality of food available at food outlets

Implement innovative models and invigorate existing ones that improve the quantity and quality of food available at food outlets. These efforts can be aided through the use of food mapping to link food outlets to local farmers. Successful models to consider for expansion to underserved areas of the community include the Baltimore Healthy Stores model, farmers markets, and Baltimore's unique heritage of Arrabers.

- Mid-term
- Partnerships
- Private Sector
- MD Department of Agriculture, DoP, Johns Hopkins University

Strategy C

Increase demand for locally-produced, healthy foods by schools, institutions, supermarkets, and citizens

Work with existing initiatives such as Baltimore City Public School System's Fresh Start Farm and MD Hospitals for a Healthy Environment to increase purchasing of local, organic food. This effort can be faciliated by a mapping resource to help institutions and supermarkets identify what local farms are interested in direct marketing. Developing a consumer campaign on the benefits of eating and buying food locally can help spur demand for such products.

- Mid-term
- Education/Marketing
- Private sector; Grant Programs; City Funds
- DoH, BCPSS, Maryland Hospitals for a Healthy Environment, Chesapeake Sustainable Business Alliance, Other Institutional Partners

Strategy D

Develop an urban agriculture plan

Develop a plan that will promote healthy, local, and, where possible, organic food production and food professions and include multiple stakeholders currently involved in food production and job training. The plan should identify the predicted demand for urban farmed food and recommend location and distribution of urban agricultural institutions. It could also identify the best distribution of existing food networks and identify gaps that need to be filled.

- Short-term
- Policy/Operations, Partnerships
- Grant Programs
- DPR, Civic Works, Parks and People, City Schools, Cooperative Extension, Urban Agriculture Task Force

Strategy E

Implement Baltimore Food Policy Task Force recommendations related to sustainability and food

Utilize the work of the Baltimore Food Policy Task Force which is charged with reviewing food issues throughout the city. The group is scheduled to produce a report mid-2009 with a series of recommendations to increase access to and demand for healthy, nutritious food.

- Short-term
- Policy/Operations
- TBD (will depend on recommendations)
- DoH, DoP, Local Institutions

Strategy F

Compile local and regional data on various components of the food system

Create a mapping resource for those working on local food and agriculture programs. Map will include information on local farms and agricultural institutions, processing facilities, distributors, farmer's markets, community gardens, supermarkets, hospitals, schools, restaurants, zoning and easements, economic census data, and nutritional health data. This will be used to identify additional land available for agriuculture, help link suppliers and consumers, and identify geographical areas with insufficient access to fresh, healthy food.

- Short-term
- Partnership
- Private Sector
- DoP, Johns Hopkins Center for a Livable Future

"Along the way, as we treat nature as model and mentor, and not as a nuisance to be evaded or manipulated, we will certainly acquire much more reverence for life than we seem to be showing right now." –Amory Lovins

3 Provide safe, well-maintained public recreational space within ¼ mile of all residents

Convenient, consistent, and safe access to open and well-maintained green space provides opportunities for recreation – from sitting, resting, and gardening to creative play, nature exploration, and sports – that are critical to the health and livability of any community. The provision of a wide variety of green spaces for all of Baltimore's diverse neighborhoods will provide the opportunity for us to live balanced lives in our urban environment. "One Park" is an example of an interconnected network of parks and other public open space, conceived initially by Parks & People Foundation to build on the City's rich heritage of parks, One Park unites the city in an integrated network of parks, street trees, community gardens, landscaped boulevards, bike paths, trails, schoolyards, recreational areas, waterways, and other public open space. One Park is a unifying framework for implementation over time in accordance to the unique needs of each neighborhood. It is a comprehensive way to strengthen connections between neighborhoods, improve environmental health, expand opportunities for recreation, and re-conceive Baltimore as a city in a park.

Strategy A

Conduct an inventory and assessment of existing and potential outdoor spaces for recreation

Capitalize on Baltimore's available outdoor resources for the community by first setting out to understand the breadth of opportunities. During this process, think creatively about areas as potential outdoor recreational spaces such as school grounds, streams, and wooded areas. This information can be used to identify the best locations, structures, and opportunities for meeting the community's needs.

- Short-term
- Planning
- City Funds
- DoP, DRP, HCD

One Park Master Plan Map

Strategy B

Develop a plan with recommendations for increasing the quantity, quality, and use of recreation spaces

Ensure that all of Baltimore's recreational facilities are utilized to their greatest capacity by developing a plan to identify under and over-utilized recreational spaces and make recommendations for capital improvements, changes in management, and other elements.

- Mid-term
- Policy/Operations
- Cost-Neutral
- DoP, DRP, Downtown Partnership, NGOs, Private Sector

Strategy C

Create an inclusive organizational system to support stewardship of public spaces

Provide support and advocacy for the non-government management, programming, and stewardship of public spaces. Communities and non-profits often have limited capacity for purchasing equipment or expertise for the care and maintenance of adopted spaces. An organized system could be created for these groups to share information, tools, and other resources to optimize their effectiveness at minimal cost.

- Short-term
- Partnership
- Grant Programs; City, State and Federal Funds
- DRP, Community Garden Resource Network, Downtown Partnership, Community Organizations, NGOs

4 Protect Baltimore's ecology and biodiversity

It is important that Baltimore citizens do not forget that even as urben dwellers, we are still a part of the larger eco-system, one that supplies and contributes to the quality of the air we breath and water we drink. Baltimore City is part of a very unique collection of ecosystems including the Chesapeake Bay and four regional watersheds. It is critical that we protect and enhance the biodiversity that keeps our ecosystems healthy.

Strategy A

Manage Baltimore City land to restore, conserve, and create habitat for native species and eliminate invasive plant species

Improving the habitat for native species can be accomplished through a variety of methods. Identifying existing habitat and areas to improve as native habitat is a good first start. Baltimore's proposed landscape ordinance can be used as a tool to reduce the amount of lawn cover and incorporate planting concepts for native habitat development. By promoting collaboration between city agencies, non-profits, plant vendors, and Baltimore residents, the City can begin to eliminate invasive plant species and discourage the sale of invasive species in local nurseries.

- Mid-term
- Policy/Operations
- Cost-Neutral
- BOS, DoP, DRP, NGOs

Strategy B

Implement sustainable landscape maintenance practices throughout the City

Reduce dependence on chemical fertilizers, pesticides, and herbicides and increase use of Integrated Pest Management (IPM) strategies for pest management. Reduce dependence on synthetic chemical fertilizers and increase use of composted organic matter to build soil health. Reduce lawn cover and develop more diverse habitats that are less resource intensive and more self-sufficient. These types of practices can shift from potentially harmful chemicals to training maintenance and management of Baltimore's sustainable landscapes.

- Short-term
- Operations
- Cost-Neutral
- BOS, DoT, DRP, NGOs

"Extinction of a single plant species may result in the disappearance of up to 30 other species of plants and wildlife." - U.S. Forest Service

Strategy C

Develop and implement a system to regenerate soil health in Baltimore City

Ensure consideration of soil health in all planting ordinances and develop composting systems in the City for use in park maintenance and to sell to residents for private use. Work with the cooperative extension to educate Baltimore residents on the importance of building and maintaining healthy soil.

- Short-term
- Operations
- Grant Programs
- Cooperative Extension Service, DPW, DRP

Strategy E

Support and develop native plant nurseries in the city

Generate revenue and provide much needed employment for Baltimore residents through a native plant nursery located in Baltimore City. As the importance of native planting and demand increases, a nursery would be an opportunity to meet Baltimore's demand for native plants, while serving educational and employment needs.

- Mid-term
- Standards
- Grant Programs; Private Sector
- Watershed Organizations; Community Organizations; DRP

Strategy D

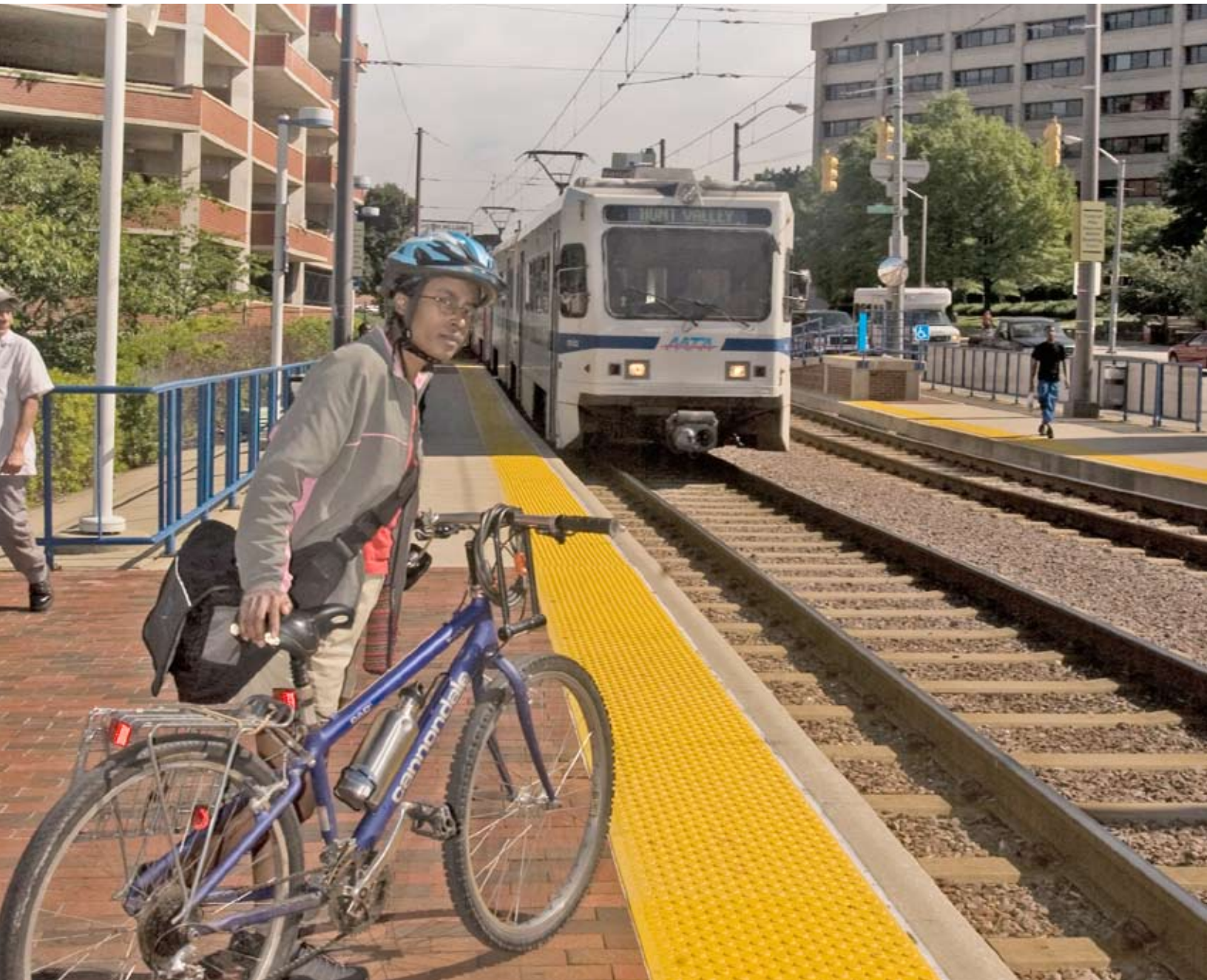
Build community support to conserve and restore Baltimore City's urban stream ecosystem

Promote collaboration between city agencies, non-profits, and Baltimore residents to maintain and improve the health of the urban stream ecosystem. This work can be continued through established groups to prevent stream bank erosion and develop stream buffers to maintain proper habitats for aquatic wildlife. Additional infrastructure replacement projects in stream valleys to restore degraded streams will need ongoing funding.

- Ongoing
- Partnership
- Grant Programs; Mitigation Funds
- DPW, DPR, Watershed Organizations

Chapter 8

Transportation



Goal 1 Improve public transit services

Goal 2 Make Baltimore bicycle and pedestrian friendly

Goal 3 Facilitate shared-vehicle usage

Goal 4 Measure and improve the equity of transportation

Goal 5 Increase transportation funding for sustainable modes of travel

Transportation

Our current transportation system is economically, environmentally, and socially unsustainable. Shifting away from our reliance on single occupancy vehicles will reduce greenhouse gas emissions, improve air and water quality, reduce our dependence on foreign oil, alleviate traffic congestion, and improve public health and equity. In doing so, we can also improve our overall quality of life.

The transportation sector is the fastest growing source of greenhouse gas emissions in the U.S. and transportation petroleum accounts for 93% of our increase in demand for oil since 1990. Sixty-two percent of all transportation-related emissions affecting air quality and public health come from single-occupant vehicles (passenger cars, SUVs, minivans, pickup-trucks and motorcycles). By comparison, public transportation produces 95% less carbon monoxide, 90% less volatile organic compounds, and about half as much carbon dioxide and nitrogen oxide, per passenger mile.

The U.S. spends more than $13 million per hour on foreign oil and we cannot produce enough domestic oil to meet our current transportation patterns.12 While national reliance on imported foreign oil increases, population growth is now being outpaced by our automobile dependence. Between 1996 and 2006, Maryland's population grew by 9.4% while vehicle miles traveled per person increased by 13%. This mirrors national trends which indicate that while fossil fuel prices continue to climb, the average citizen has to travel further to get to work and make everyday trips. Cities that successfully plan for transit oriented development (TOD), invest in diverse alternative transportation options and encourage bicycle and pedestrian-friendly development patterns to weather future oil market volatility with a competitive edge.

Trends also indicate that the number of low-wage workers relying on public transportation in Baltimore is growing. More than 200,000 Baltimore residents, nearly one third of the City's population, are without access to a car. This proportion, higher than that of New Orleans residents without car access during Hurricane Katrina, highlights an imbalance among residents currently underserved by affordable transportation alternatives.

Improving Baltimore's transportation system is a daunting task. The capital and operating costs for new projects are extremely high, while our existing infrastructure is in dire need of maintenance and repair. Past regional development patterns and infrastructure decisions have created a system where the most convenient way to travel is by single occupancy vehicle. Changing the existing physical infrastructure and citizen behavior patterns will be difficult.

While the current situation is challenging, Baltimore has a strong foundation to build upon as we begin to solve existing transportation issues and invest in a more sustainable transportation system. Baltimore's core was designed before the prevalence of automobiles, and at other points in history, relied on transit and walking as the principle means to move people around the city. Our land use patterns are dense and well distributed with ample sidewalks. The high density of residences combined with even distribution of commercial services supports high quality transit services. Many trips Baltimore citizens make are short enough for walking or biking.

Capitalizing on Baltimore's existing network, targeting improvements, and redeveloping in a transit-orientated fashion will allow Baltimore to meet the transportation needs of residents in a sustainable way. This will also position Baltimore to attract new residents by meeting the needs and desires of our current and future residents who are attracted to walkable, car-free communities that have a mix of housing types and character. Baltimore's Comprehensive Master Plan (Comp Plan) focused on land use and design issues necessary for successful, livable communities. The Comp Plan's LIVE Goal 2, Objective 3: Promote Transit Orientated Development (TOD) and Mixed-use Development to Reinforce Neighborhood Cen-

ters and Main Steets lays out specific strategies to plan, utilize land, and develop in ways that reduce dependence on single occupancy vehicles. Similarly, the entirety of the Comp Plans Live Goal 3: Improve Transportation Access, Accessibility and Choice for City Residents discusses strategies to move the region in this direction.

Baltimore's essential character is in large part shaped by its transportation priorities. The goals of the Sustainability Plan complement those contained in the Comprehensive Master Plan, rounding out strategies to create a just, economically and environmentally sound transportation system for all.

12 http://www.nrdc.org/air/transportation/aoilpolicy2.asp

"There are many ways of going forward, but only one way of standing still."

–Franklin D. Roosevelt

1 Improve public transit services

While walking and biking are the most efficient modes for short or limited distance trips, public transit remains a central component of a sustainable city. Baltimore's current public transit system is overloaded and inefficient. In order to better serve these riders and increase future ridership, plans to add new bus and rail lines, reduce trip times, and improve the rider's experience will be critical steps to move towards the creation of a vibrant, healthy Baltimore. Improved collaboration between all stakeholders, Baltimore City government, neighboring jurisdicitons, the Maryland Transportation Administration (MTA), and other partners can help make this a reality.

Strategy A

Make software upgrades to allow for transit signal priority

Implement transit-signal priority (TSP) for public transit vehicles. The City is working with the MTA to evaluate software upgrades necessary to give public transit vehicles priority at traffic signals, extending green times or shortening red times. TSP was implemented on Howard Street for the Light Rail but required hardware changes. TSP could improve transit travel times and on-time performance of transit vehicles on many corridors while also decreasing traffic congestion and emissions.

- Short-term
- Policy/Operations
- Federal Funds
- DoT, MTA

Strategy B

Implement an integrated system of downtown shuttle and trolley routes

Increase transit access with new shuttle and trolley routes. Baltimore City DoT is planning to debut three new shuttle routes in July 2009 to connect neighborhoods, tourist destinations, and institutions, serving local needs and complementing the regional transit system. The free shuttle will alleviate the need for automobile use downtown for business, personal, and tourist use. The routes will be funded by an increase in parking taxes already approved by City Council. The City is also working with other partners to explore the potential for a fixed-rail trolley in the Charles Street corridor.

- Short-term
- Operations
- Parking Fees, Motor Vehicle Revenue Funds
- DoT, MTA, BDC, Charles Street Redevelopment Corporation, Downtown Partnership

Strategy C

Work with the MTA to expand QuickBuses to more high-volume transit corridors

Create faster bus service along select routes with QuickBus service. QuickBus routes stop less frequently than regular local bus service, use hybrid vehicles, and have real-time information signs and other amenities at their stops. The MTA currently offers one QuickBus route (#40) in Baltimore which operates in the proposed Red Line corridor. The MTA is evaluating the potential to add a QuickBus route in the York/Greenmount corridor with the potential to expand the program to other corridors.

- Short-term
- Advocacy
- State Funds
- DoT, MTA

Strategy D

Bring the Red Line Transit project to Baltimore

Support the proposed Red Line, a 14-mile east-west transit line that will provide connection between the Woodlawn area of Baltimore County, West Baltimore, downtown Baltimore, Inner Harbor East, Fell's Point, Canton, and the Johns Hopkins Bayview Medical Center — making travel in these heavily congested corridors simpler, faster, and cheaper. Baltimore City has developed a Community Compact to set standards for the project's implementation and is actively working to support the project.

- Long-term
- Advocacy
- Federal Funds
- DoT, MTA

Strategy E

Work with the MTA to develop and implement an ideal transit service profile for MTA routes

Evaluate how well routes match with the "ideal transit service" profile, which addresses operating hours, regularity, passenger amenities, and passenger loads. Partner with MTA to move 2-3 core Baltimore bus routes annually to the ideal profile. In the long-term, the MTA and the City can establish public-private partnerships to augment MTA service in transit-challenged neighborhoods and employment areas, especially where "ideal transit service" is not cost-effective.

- Mid-term
- Advocacy
- MTA Funds
- DoT, MTA, Advocacy groups

2 Make Baltimore bicycle and pedestrian friendly

Walking and bicycling are the most immediately add accessible and affordable transportation modes. With 35% of Baltimore residents without automobile access, increasing the safety and convenience of these active modes of transportation will have multiple benefits. Infrastructure that supports and encourages walking and cycling calms traffic and leads to reductions in traffic injury and death. As modes of transport, walking and cycling also promote health, enhance neighborhood connectivity, are zero emitting and non-polluting, and encourage development scaled to people, rather than cars. Making the built environment highly supportive of walking and cycling will lead to a healthier, more complete city.

Strategy A

Implement the Baltimore Bicycle Master Plan

Improve bicycling conditions in Baltimore by implementing the Bicycle Master Plan. Approved in 2006, the plan lays out a network of bike routes and addresses other facility needs. Some routes have already been implemented and work has begun on the second phase of implementation. The Bicycle Master Plan can be accessed at: http://www.liveearnplaylearn.com/Publications/BaltimoreCityBicycleMasterPlan/tabid/98/Default.aspx.

- Short-term
- Capital, Operations
- Existing Program Funding, Federal Funds
- DoT, Mayor's Bicycle Advisory Council (MBAC)

Strategy B

Develop a Bike to Work program for Baltimore

Increase the number of Baltimoreans commuting by bicycle by expanding the Bike to Work program. Baltimore City has partnered with the Baltimore Metropolitan Council (BMC) on efforts around Bike to Work Day each May and could build on that to focus on supporting and improving conditions for bike commuting in the city. Aspects of the program could include encouraging businesses and other employers to allow bikes in the workplace, a "commuter challenge" to have companies compete for the highest proportion of employees bicycling to work, and City leadership by providing showering and changing facilities for City staff that bike to work.

- Short-term
- Partnership
- Cost-Neutral
- DoT, MBAC, Baltimore Metropolitan Council (BMC)

Strategy C

Evaluate the creation of a bicycle sharing service

Current data shows that 35% of Baltimore's citizens are without automobile access. Creating a bike sharing program would help to provide a new healthy transportation option. Baltimore would benefit from an outside vendor providing the service at no cost to the City government. Bike sharing generally increases overall ridership and helps local bike shops in sales and maintenance. To engage the public in this process as much as possible, consider conducting a survey of resident and business opinion of a bike sharing program – what pitfalls they foresee and what incentives they value.

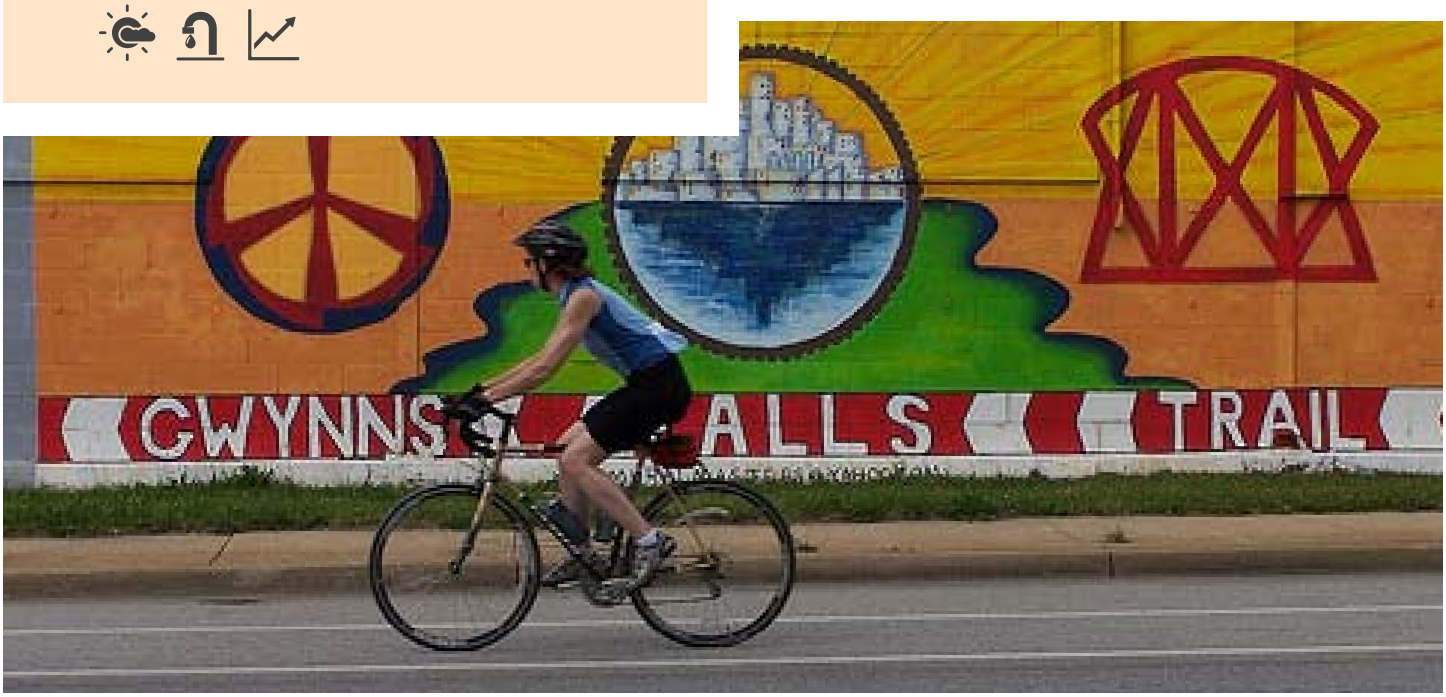
- Short-term
- Partnership
- Private Sector
- DoT, Private Sector

Strategy D

Expand the Safe Routes to Schools program

Baltimore City has one of the highest rates of child injury and death due to pedestrian conflicts with cars in Maryland. The Safe Routes to School program encourages and enables more children to safely walk and bike to school through engineering, enforcement, encouragement, and education. Baltimore has implemented strategies from this program at several schools and should expand them to all schools where the majority of children walk to classes.

- Mid-term
- Operations; Capital
- State of Maryland Safe Routes to School Program
- DoT, City Schools, 1000 Friends of Maryland



Strategy E

Implement 'Sunday Streets' recreational street closure program

Promote walking, bicycling, and exercising by temporarily closing select streets to automobiles. Baltimore City is planning to close 33rd Street, Art Museum Drive, and Wyman Park Drive to automobiles for four consecutive Sundays in April/May 2009 to create an auto-free space for public interaction and use. This builds upon the Ciclovia movement in Bogota, Columbia and the recent examples in places such as Portland, Oregon, New York City, Chicago, El Paso, and Miami.

- Short-term
- Policy and Operations; Partnership
- Grant Programs; City Funds
- Baltimore Office of Promotion of the Arts (BOPA), DoT, MBAC, One Less Car

Strategy F

Improve public infrastructure for cyclists and pedestrians

Repair and modify public infrastructure to increase the safety, accessibility, and comfort of biking and walking. Currrently, narrow, uneven sidewalks present a hazard to pedestrians, especially those with limited mobility. Ensuring that storm drain grates are bicycle "friendly" will improve cyclist safety. Improved pedestrian crossing signals will make walking safer and more enjoyable.

- Short-term
- Operations
- City Funds
- DoT

3 Facilitate shared-vehicle usage

The City of Baltimore increasingly endures traffic jams, parking shortages, and citizens unable to afford motor vehicle ownership. Active transportation can help reduce traffic congestion. Yet, even in the most walkable, transit-friendly city people need occasional access to a car. Car-sharing programs allow individuals and families to give up the burden of car ownership in favor of a more affordable option. Making such programs available to everyone in Baltimore will further support sustainable transportation goals.

Strategy A

Establish Baltimore CarShare program

Provide a network of conveniently located vehicles for members to rent for as little as a half an hour. The Parking Authority of Baltimore City is helping to launch Baltimore CarShare, a non-profit car sharing organization that will provide vehicles at affordable hourly rates that include maintenance, insurance, designated parking, and gas. Car-sharing has been shown to enable members to give up one or more of their cars, knowing that a shared vehicle is available nearby whenever they need it. As a result, a single car-sharing vehicle can replace 20 personal vehicles, freeing up space for parking and reducing transportation costs for members.

- Short-term
- Partnership
- City funds
- DoT, Parking Authority, Car Share Executive Board

Strategy B

Expand the CityCommute Rideshare program

Publicize and expand the Baltimore Department of Transportation's program that matches carpoolers with similar travel patterns. The program also works to promote commuter alternatives by educating on the benefits of using alternative transportation rather than driving alone in single-occupancy vehicles. Commuter Choice Maryland provides incentives, such as guaranteed rides home which encourage commuters that normally drive alone to switch to transit or vanpools. The SmartTrips program in Portland is a model for potential expansion of the CityCommute program, having been able to reduce SOV trips by 9–13 percent with intensive outreach and education efforts. Internet services like www.GoLoco.org and CarpoolConnect.com can also link potential carpoolers.

- Mid-term
- Policy/Operations, Partnership
- State and Federal funds
- DoT, Parking Authority, MTA

Strategy C

Leverage new Baltimore Green Building Standards to increase shared-vehicle use

Baltimore is creating original green building standards for commercial and multi-use projects over 10,000 sq ft. These standards will encourage the integration of shared-vehicles into appropriate new construction and major renovation projects by providing incentives such as preferred parking spaces, reduced parking rates, and/or other benefits.

- Short-term
- Standards
- Cost-Neutral
- BOS, HCD, DoT

4 Measure and improve the equity of transportation

The National Housing Conference's "A Heavy Load" study found that annual transportation costs for working families in Baltimore are $9,506, compared with incomes averaging around $30,000. Baltimore's low-income residents have few transportation options, experience relatively low-quality transit service, and pay heavily for those limited options. However, improvements in transportation options and a reduction in costs could allow working families to reach better jobs and devote less of their income to transportation.

Strategy A

Track the disparity of transportation costs by neighborhood relative to income

Calculate and track the transportation costs for Baltimore's neighborhoods relative to the income in those neighborhoods. The Baltimore Neighborhood Indicators Alliance (BNIA) currently publishes the "Vital Signs" report on an annual basis and can build on the research done by the National Housing Coalition's "Heavy Load" report, which found that low-income Baltimore workers had annual transportation costs of $9,506 relative to incomes of roughly $30,000.

- Short-term
- Partnership
- Grant Programs
- DoT, BNIA

Work with the MTA to measure the quality of transit service in Baltimore neighborhoods

Develop measures to monitor the quality of transit service by geographic location to ensure that residents have access to high quality transit, especially in areas with low-vehicle ownership. The analysis can include measures in the Transit Capacity and Quality of Service Manual or other sources to track the quality of transit service.

Strategy B

Identify strategies to reduce the disparity in cost of transportation relative to income

Use the findings of the "Heavy Load" study and the data tracked by BNIA to identify strategies and develop programs to reduce the relative costs of transportation. These may include some strategies for other goals (car-sharing, improved transit quality, better bike facilities, increasing destinations within walking distance) and other strategies not yet determined.

- Mid-term
- Policy
- Funding Analysis Needed
- DoT, BCS

Strategy C

- Mid-term
- Partnership
- State Funds
- DoT, MTA

5 Increase transportation funding for sustainable modes of travel

The cost of funding transportation improvements can seem overwhelming. A desirable alignment for the Red Line would cost over $1.5 billion, and just maintaining city streets and bridges built decades ago is a vast undertaking. But 70% of ballot initiatives for transit projects succeeded in the 2008 election and other regions like Denver, Phoenix, and Charlotte have developed regional funding sources. While expensive, sustainable transportation projects are far more economical over time than building or expanding freeways. Moreover, building and maintaining infrastructure is an excellent opportunity to create new jobs.

Strategy A

Advocate for more funding for transit and sustainable transportation

Organize transportation advocates and government leaders to develop a unified voice to advocate for transit funding at all levels, especially as the stimulus measure and federal transportation policies are being developed.

- Short-term
- Advocacy
- Cost-Neutral
- Mayor & City Council, CoS, State & Federal Legislators, MTA

Strategy B

Implement goals of Mayor's Transportation Investment Commission (TIC) report

Implement the draft recommendations of TIC, which include the following goals a) Constraining growth in operations spending; b) Directing a great percentage of HUR to transportation operations/capital spending; c) Investing in money-saving technology, consolidating DoT facilities, selling excess properties; d) Streamlining and increasing parking tax; e) Raising parking fines/fees; e) Increasing conduit rental rates; f) Recovering 50% of user costs for special events; g) Making greater use of financing strategies; h) Expecting private sector participation in growth related projects; and i) Increasing advocacy for state grants/discretionary spending.

- Short-term
- Policy/Operations
- To Be Determined Upon Adoption of TIC Report
- DoT, Private Sector

Strategy C

Explore options for a new regional transit funding source and a larger local role in managing the MTA

Identify more funding to implement projects like the Red and Green Lines. While creating a new, locally operated transit system may not be viable, it may be possible to pair increased transit funding with greater accountability and a larger role in the MTA for local jurisdictions. One option would be to create a new, ongoing regional "smart growth" funding source to support sustainable transportation.

- Short & Mid-term
- Advocacy
- Cost-Neutral
- Mayor, City Council, State legislators, DoT, Surrounding Counties, MTA

Strategy D

Expand eligible expenses under sustainable transportation programs

Expand the existing Maryland Commuter Tax Credit program, which provides incentives for individuals and companies to purchase transit passes, to support other sustainable transportation options. This would allow employees using more sustainable modes of commuting to benefit from tax credits on par with those that drive to work. Areas of expansion may include live-near-your-work, telecommuting, and bicycle commuting programs.

- Short-term
- Legislative
- State Funds
- State legislators, DoT, MTA

Strategy E

Advocate shifting funding from roadway capacity expansion to transit, bicycling, and walking projects

Oppose the use of funds for major roadway capacity expansions such as the Inter County Connector, a third Bay Bridge, and further widening of I-95, addressing those issues using pricing for existing capacity and shifting the funding to more environmentally sustainable modes such as transit, bicycling, and walking.

- Ongoing
- Advocacy
- Cost-Neutral
- Mayor, City Council, State legislators, Federal legislators, MTA

Chapter 9

Education & Awareness

Goal 1 Turn every school in Baltimore City into a green school

Goal 2 Ensure all city youth have access to environmental stewardship programs and information

Goal 3 Raise the environmental awareness of the Baltimore community

Goal 4 Expand access to information on sustainability

Education & Awareness

Simply put, action and knowledge go hand in hand. In order to facilitate the cultural and behavioral shift that Baltimore residents need to become more sustainable, awareness needs to be incorporated into the daily life of each individual. A 1996 report from the President's Council on Sustainable Development stated that "broad-based action is needed because local government alone cannot accomplish long-term solutions to community problems." The success of the Baltimore Sustainability Plan is dependent upon the participation of all residents, businesses, and institutions within the City. Sustainability should not be an abstract term used only by government, scientistsm, and environmentalists; it should be a way of life in which informed aware citizens become environmental stewards and work together to make Baltimore a better city.

The City's young people are one of our greatest assets. They have already demonstrated an eagerness for embracing sustainability as demonstrated by the success of the Greenscape'08 event hosted by the Youth Advisory Group to the Office of Sustainability and the success of many other youth environmental groups within the City. The sustainability movement has unique appeal to young people because it presents them with opportunities to make their voices and opinions heard and to take direct action with tangible results.

Students make up a significant portion of the population, with over 82,000 students enrolled in almost 200 public and charter Baltimore schools during the '08 -'09 year. Add private school, college, and university students and you have a significant cross section of the population that can effectively create change. Schools are the ideal environment in which to encourage behavioral change through both curriculum and leading by example. The "Green Schools" movement to make new and existing school buildings and curricula more environmentally-conscious has made significant headway nationwide. The Maryland Green Schools Program has been recognizing Green Schools across the state since 1999. However, in Baltimore City just five percent of the schools, both private and public, have received this designation.

On October 16 2008, Mayor Sheila Dixon demonstrated her commitment to increasing the number of Green Schools within the City by signing onto the Mayor's Alliance for Green Schools. The Alliance's goal is to accelerate the implementation of programs that will bring green schools to all children within a generation. Together with mayors from cities across the country, Baltimore has taken a pledge to support the modification of K-12 schools to reduce their carbon impact and make a more focused commitment to sustainability education. By "greening" our schools, we provide a healthy environment for students and staff and improve academic performance while saving money which can then be spent on educational resources. Studies have shown that high-performance school facilities on average use 30-50% less energy and 30% less water. In addition, asthema rates are reduced an average of 38.5% among students who attend schools with improved indoor air quality.[13]

While a solid foundation of young, motivated individuals who understand the impacts of their behaviors on

their community and environment is important, it is imperative that all residents of the City become aware of the impact they have on the environment. In order to reach all members of our community, information needs to be made readily available in many different formats and in many different locations. Continuing the Sustainability Ambassador program, hosting public education events, and expanding the Office of Sustainability website are just some examples of outreach efforts. In a recent study which evaluated 43 cities across the U.S. on different aspects of environmental sustainability, Baltimore was tied for 11th place for its "Knowledge and Information" about sustainability (http://www.sustainlane.com/us-city-rankings/cities/baltimore.) We can improve this number by reaching out to those who would not normally be concerned with environmental issues, making connections to their everyday lives, and demonstrating the effect their behaviors have on the world around them.

13 Kats, Gregory. Greening America's Schools: Costs and Benefits. A Capital E Report, Published October 2006. Available online: http://www.usgbc.org/ShowFile.aspx?DocumentID=2908

Education & Awareness

1 Turn every school in Baltimore City into a green school

Every student attending public or private schools in the City of Baltimore deserves to receive the best education available in a safe and healthy environment. By "greening" our schools, we can provide a healthy environment for students and staff and improve academic performance while saving money, which can then be spent on educational resources. Through an environmentally-based education, children will be taught about the impacts of their behaviors on their communities, both local and global, and become better stewards of their communities and the planet.

Strategy A

Incorporate sustainability into curricula and activities

Expand the current environmental health, science, and business curricula in BCPSS to include areas such as energy conservation, water conservation, and waste management. The EPA and the Maryland Department of Natural Resources have developed teaching guides that could be utilized within the schools. Community and non-profit organizations can help develop, implement, and deliver the content of this curricula.

- Short-term
- Education
- State and Federal Funds
- City Schools, BOS Youth Advisory Group (YAG), Chesapeake Bay Foundation, North American Association for Environmental Education, NGOs

Strategy B

Build and retrofit green school buildings

Improve city school buildings by adding green features. Green buildings are less costly to operate, healthier for students and teachers, better for our environment, and more inspiring places to learn. The LEED for Schools Rating System developed by the U.S. Green Building Council provides a framework for designing and building such facilities. Under Baltimore's green building requirements, new and extensively-modified city schools will need to meet the equivalent of a LEED Silver standard.

- Long-term
- Capital
- State and Federal Funds
- City Schools

Strategy C

Adopt a green facilities management guide for school operations

Implement best management practices regarding energy conservation, water conservation, waste generation, purchasing, and green cleaning practices to reduce the operational costs of Baltimore City schools and make them healthier environments. In addition, ensure that all schools are properly implementing the states' IPM in Schools law. Where possible, facilities management can engage students to participate in the stewardship of their school environment.

- Mid-term
- Policy/Operations
- Cost-Neutral
- City Schools

Strategy D

Implement a teacher training and certification program for sustainability

Offer a certification program in sustainability to allow teachers to receive advanced knowledge in this growing field while better equipping them to bring this information to their students. Baltimore can learn from models of such certifications already exist. This would also allow teachers to differentiate themselves and learn from each other, contributing to teacher morale and effectiveness.

- Mid-term
- Education
- Grant Programs
- City Schools, BOS, Maryland Parent Teacher Association

Strategy E

Recognize schools making strides in sustainability

Leverage the MD Association of Environmental and Outdoor Education (MAEOE) green schools awards and other programs to recognize schools. By supporting higher participation in the MAEOE program or creating a Baltimore-specific awards program, schools can be recognized for implementing sustainability programs that are tailored to their population, academic focus, location, physical infrastructure, level of parental involvement, and budget.

- Mid-term
- Education, Partnership
- Cost-Neutral
- BOS, BCPSS, MAEOE

2 Ensure all city youth have access to environmental stewardship programs and information

Young people are eager to learn about ways that they can improve their environment through community service projects and after school groups which provide opportunities to learn and give back. They have the enthusiasm required to create and implement projects and want the support of community and government leaders. Cultivating a sense of environmental ownership and responsibility in youth ensures that Baltimore's sustainability efforts will continue into the future.

Strategy A

Develop a sustainability education and community service program

Educate youth about their role in Baltimore's sustainability through a program of hands-on projects, community service, and service learning hours. Potential outlets for the program include schools, community centers, and community based organizations. The BCPSS currently has many environmental projects that qualify for community service hours. These projects should be expanded to include all aspects of sustainability. The Fresh Start Farm and other school grounds focused on sustainable food cultivation may be used as education and communtiy service sites.

- Short-term
- Education
- Funding analysis needed
- BOS, YAG, City Schools DRP, Baltimore Heritage, Non-profit Youth Organizations

Strategy B

Create a website devoted to the youth perspective on the environment

Develop a youth-designed and operated website where young people can share their ideas with each other, find information on actions they can take to improve the environment, and connect with sustainability-oriented groups already active in Baltimore. The website would include links to those groups, project ideas, photos, videos, and information about upcoming events.

- Short-term
- Education
- Grants
- BOS, YAG

Strategy C

Create a Youth Ambassador Team to educate their peers about sustainability

Connect to youth not normally engaged in sustainability issues through a peer-to-peer outreach program. The program could utilize sustainability-oriented videos and the feedback from current sustainability and youth focused events to educate young people about their role in creating a sustainable Baltimore. Many peer-to-peer groups already exist in the city and could serve as models and partners for this effort.

- Short-term
- Education
- Grants
- BOS, YAG, Holistic Life Foundation, Parks & People Foundation, Baltimore Heritage, Peer to Peer

Education & Awareness

3 Raise the environmental awareness of the Baltimore community

Creating a sustainable city requires the participation of everyone. Engaging the community at all levels through grassroots outreach and education can elicit incremental behavioral change with tangible environmental outcomes and personal benefits. Methods of promoting awareness will range from passive information (sustainability calendars) to active involvement (neighborhood challenges) and targeted education provided by membership organizations.

Strategy A

Utilize Sustainability Ambassador network for community outreach

Recruit, train, and deploy a cadre of volunteer Sustainability Ambassadors to educate residents about environmental stewardship using a peer-to-peer model. Potential audiences include community associations, school PTAs, faith-based groups, civic clubs, and the business community.

- Short-term
- Education
- Grant Programs
- BOS, NGOs, Partner Organizations

Strategy B

Coordinate a year-long Baltimore Sustainability Calendar

Highlight a specific area (e.g. energy efficiency, recycling, tree planting and care) each month of the year in order to concentrate messages and engage the entire Baltimore community cohesively around specific goals. All stakeholders should be involved in the calendar's development in order to synchronize programming and maximize synergy of efforts. Eventually, this may take the form of a tangible wall calendar for all Baltimore citizens.

- Short-term
- Education, Partnership
- Existing Program Funds
- BOS, NGOs, Partner Organizations and Initiatives

"In the end, we conserve what we love. We love only what we understand. We will understand only what we are taught."

–Senegalese poet Baba Dioum

Strategy C

Increase public knowledge of alternative transportation options

Develop a regional 511 system to provide information on costs, routes, and availability of public transit, bicycling, carpooling, and other sustainable transportation options.

- Mid-term
- Education
- State and Federal Funds
- MTA; DoT

Strategy D

Launch city-wide sustainability challenges to a variety of audiences

Engage the Baltimore community in competitions and challenges to educate and motivate changes in behavior while having fun. Potential audiences include neighborhoods, schools, local businesses, and city agencies.

- Short-term
- Education, Partnership
- Grant Programs
- BOS, NGOs, Partner Organizations and Initiatives

Strategy E

Engage membership organizations to develop and disseminate targeted sustainability information

Partner with stakeholder groups that are uniquely positioned to make huge differences in specific areas to develop and disseminate sustainability information to their memberships, creating opportunities for targeted engagement and education. Examples include partnering with restaurant associations on recycling, boating clubs on water quality, preservation and architecture groups on sustainable design, and real estate managers on energy efficiency.

- Short-term
- Education, Partnerships
- Existing Program Funding
- BOS, NGOs, Partner Organizations

Education & Awareness

4 Expand access to informational resources on sustainability

Access to information is critical to support citizen action. Convenient, accessible, easy to use, and understandable information enables people to make behavior changes to support sustainability. Diverse and accessible locations such as libraries, community centers, bus stops, local stores and restaurants, markets, buses, metro and light rail cars, and cabs as "go to" places will effectively disseminate information to every neighborhood and socio-economic group.

Strategy A

Develop an interactive website for the Baltimore Office of Sustainability (BOS)

Provide a one-stop shop for sustainability-related information specific to the Baltimore community through a more sophisticated BOS website. The site would include tailored messages for a variety of audiences on how they can help achieve the goals of the Sustainability Plan, information on other local, state, and federal programs, and the ability to track progress of the Plan's implementation.

- Short-term
- Educational
- Grant
- BOS

Strategy B

Create local Green Pages as resource guide

Offer information on where to access green products, businesses, and services in the Baltimore area through the creation of a Baltimore Green Pages. Not only would this act as a resource for those looking for local green expertise and products, it will also provide local green businesses an additional platform for exposure.

- Short-term
- Partnership
- Grant Programs
- BOS, Chesapeake Sustainable Business Alliance (CSBA), NGOs. Partner Organizations

"Problems cannot be solved at the same level of awareness that created them." – Albert Einstein

Strategy C

Utilize existing community centers to distribute sustainability information

Reach the diverse constituencies of the Baltimore community who receive information from a wide variety of outlets. By sharing informational resources with churches, recreational facilities, and other community centers, more people will have access to the knowledge and tools they need to think and live sustainably. The Enoch-Pratt public library system, in particular, would be an excellent network to distribute information, offer workshops, and loan out resources.

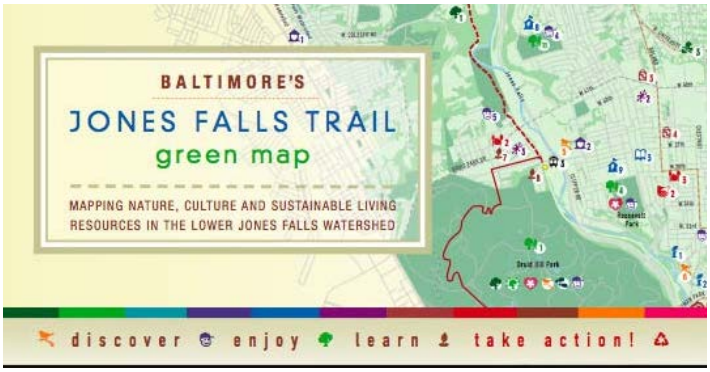
- Short-term
- Policy/Operations
- Partnerships
- BOS, Enoch-Pratt Libraries, NGOs, Community Partners

Strategy D

Support innovative resources on sustainability

Help develop and promote resources that highlight sustainability-related opportunites. A few local examples include the Baltimore Green Map, Go for Change, and Baltimore Green Works. Baltimore Green Map is an online and print map that geographically depicts the city's ecological and cultural resources with icons denoting locations of assets like public parks, recycling centers, farmers markets, and bike facilities (www.baltogreenmap.org). Go for Change is an online resource that highlights businesses and organizations working for positive change in Baltimore (www.goforchange.com). Baltimore Green Works organizes events, most notably Baltimore Green Week, to educate and celebrate sustainability (www.baltimoregreenweek.org).

- Short-term
- Education
- Cost-Neutral
- BOS, Baltimore Green Map, Partners



Chapter 10

Green Economy

Goal 1 Create green jobs and prepare city residents for these jobs

Goal 2 Make Baltimore a center for green business

Goal 3 Support local Baltimore businesses

Goal 4 Raise Baltimore's profile as a forward-thinking, green city

Green Economy

The diverse and interconnecting factors motivating individuals, companies, and governments to act and invest more sustainably is also creating demand for new products, services, and jobs. With vision, forethought, and planning, Baltimore can position itself to become a leader in an emerging green economy. In 2008, Baltimore was ranked as the 10th most sustainable city in the country and 5th in the creation of a Green Economy by the organization SustainLane.

The "green economy" is based on jobs that help protect and restore the environment, often through reducing energy, material, and water use or rehabilitating natural resources. In contrast, a pollution-based economy relies heavily on machinery, which is often energy and pollution intensive, as opposed to the green economy which focuses on human capital, creating jobs and social investment.

In order to sustain a green economy, businesses and consumers must work together to recognize that manufacturing processes, employment practices, and resource conservation should influence trade decisions as much, if not more, than price alone. The tide is already beginning to shift. Many consumers are recognizing the added value of environmentally-friendly products and are willing to pay an initial premium for products that will save their wallets and the environment over time.

Consumers are increasingly acknowledging the value of interacting directly with producers, shopping at farmer's markets and buying locally-produced goods. Buying local is not just limited to the purchase of fruits and vegetables grown locally, it also applies to goods and services. Buying local products keeps nearby businesses open and reduces the energy inputs necessary to bring the goods from their point of origin to your home.

Green jobs are the foundation of the green economy. Employment opportunities related to renewable energy, alternative fuels, organic produce, building preservation and stabilization, green building, and recycling or reuse of materials could be considered green jobs. A green job also also provides sustainable working conditions by paying a living wage, taking place in a safe work environment, and providing opportunities for advancement.

According to an October 2008 U.S. Conference of Mayors report, green jobs could be the fastest growth sector in the U.S. economy over the next few decades. The report also estimates that 85% of the green jobs created in 2006 were located in metropolitan areas. The Associated Press recently reported that the U.S. alternative energy industry collected approximately $3.3 billion in venture capital investment during the first nine months of 2008, up from $2.6 billion in all of 2007.[14]

In the face of such opportunity, equipping Baltimore to as a green business center makes good financial sense.

Baltimore has experienced problems associated with disappearing industry and rising unemployment for decades. According the U.S. Department of Labor, unemployment for Baltimore City was 7.1% in September 2008, compared to 4.6% in the greater Baltimore-Towson

metropolitan area.[16] An investment in green jobs can help revive Baltimore's employment base and open up new opportunities to historically unemployed and underemployed groups. Collaboration between industry, government, trade unions, and educational institutions can help cultivate a workforce which is trained to match the jobs in demand. Together, business and consumers can regain control of the environment and the economy through thoughtful, informed decision-making. By working together, Baltimore can be home to a thriving green economy that is good for its citizens, businesses, and environmental health.

14 Associated Press, "Highlights of Renewable Energy Issues". Nov 13, 2008, www.news.moneycentral.msn.com

15 The United States Conference of Mayors, U.S. Metro Economies, Current and Potential Green Jobs in the U.S. Economy (Lexington, MA: Global Insight, Inc., Oct 2008) 17.

"Only after the last tree has been cut down. Only after the last river has been poisoned. Only after the last fish has been caught. Only then will you find that money cannot be eaten."

–Cree Indian Prophecy

1 Create green jobs and prepare city residents for these jobs

Green jobs represent employment opportunities associated with a clean, as opposed to a pollution-based, economy. The Industrial Revolution brought a shift from human labor to machines and a drastic increase in pollution and greenhouse gas emissions. As we look for ways to reduce our contribution to climate change, minimize waste streams, and conserve natural resources, there is great potential for job creation. As discussion of green jobs attracts more attention at the national level, we want to position Baltimore as a market ready to train for, receive, and fill those jobs.

Strategy A

Add clean technology to Baltimore's targeted growth sectors

Expand the six industry sectors slated for growth by the Baltimore Workforce Investment Board (BWIB) in 2000 by adding clean technologies. This new category includes alternative energy, renewable fuels, energy efficiency technology, waste reduction, environmental services, and green building materials. Adding this sector to the list will place green jobs among the priority areas that are offered assistance for growth.

- Short-term
- Policy
- Cost-Neutral
- BWIB, MOED, BDC

Strategy B

Conduct needs assessment of green job demand

Perform a solid analysis of job demand and potential as an essential first step to developing a large-scale green job training program. Existing job training programs need to be inventoried and analyzed with all workforce development organizations. Local businesses involved in clean industries should be an integral component of this process and ensure that the skills being taught reflect current employer needs.

- Short-term
- Partnership
- Grants
- BOS, OED, Construction and Energy Technologies Education Consortium (CETEC), Maryland Division of Labor and Industry (DLLR)

Strategy C

Link existing job training programs to the information provided in the green jobs needs assessment

Provide job specific training focusing on underemployed and unemployed persons in Baltimore to capture unique opportunities provided by the new green economy. This will further strengthen Baltimore's communities and local employers.

- Short and Mid-term
- Partnership
- Grants
- MOED, BOS

Strategy D

Encourage the employment of Baltimore residents in clean energy projects

Look to existing programs that aim to revitalize neighborhoods by easing employment barriers experienced by historically underemployed groups. As the City undertakes energy efficiency, renewable energy, and other sustainability-related projects, promoting existing programs like First Source Hiring Program and Baltimore City Residents First will help ensure that Baltimore residents can benefit from the green jobs created.

- Short and Mid-term
- Policy/Operations
- Cost-Neutral
- BOS, DoF, MOED

Strategy E

Convene Green Collar Summit

Hold a summit to discuss designing and developing partnerships and programs needed to grow the Green Collar industry. Key players to invite include government, non-profit, academia, and private sector entities with appropriate knowledge, interest, and expertise. Potential funding and financing opportunities and mechanisms should also be identified from federal, state, and private sources.

- Short-term
- Partnership
- Grants; City Funds
- BOS, MOED, Construction and Energy Technologies Education Consortium (CETEC), DLLR

Strategy F

Develop a strategy to secure available funding

Identify all available funding sources to support Baltimore's green economic programs and complete necessary forms, paperwork, or applications to capture the funding.

- Short-term
- Partnership
- Cost-Neutral
- BOS, BDC, MOED

"All labor that uplifts humanity has dignity and importance and should be undertaken with painstaking excellence." –Martin Luther King, Jr.

2 Make Baltimore a center for green business

The emerging clean economy brings with it both job and entrepreneurial opportunities. By cultivating a fertile ground for green business, Baltimore can help create jobs, widen the tax base, and attract investment in industries slated for major growth in the years ahead. Cities throughout the country are vying to nurture, attract, and retain green businesses. With the wealth of local colleges and universities, industrial infrastructure, and proximity to major markets, Baltimore is well equipped to offer the intellectual capital, location, and amenities desired by green industries

Strategy A

Leverage Baltimore's natural amenities attractive to green technology businesses

Highlight and market the particular elements of Baltimore's infrastructure and facilites that are most useful to green businesses. Baltimore has excellent port, rail, and highway systems as well as a large concentration of emerging medical technology centers and numerous colleges and universities.

- Mid-term
- Partnership
- Federal Funds
- BDC, Private Sector

Strategy B

Establish and market creative financing strategies for local green businesses

Attract and support green businesses and help them secure the financing mechanisms they need to thrive. The economic landscape for clean technology is constantly changing due to volatile commodity prices, new discoveries, and government incentives. Financing opportunities are equally dynamic and require dedicated personnel to ensure the most appropriate agreements are achieved.

- Mid-term
- Partnership
- Grants; Federal Funds
- DoF, BDC, Private Sector

"When the winds of change begin to blow, some people build walls, others build windmills." – Chinese proverb

Strategy C

Encourage construction industry to use "green" building practices

Institute programs to help Baltimore's builders use energy efficient and recycled materials. Give priority to builders who are LEED-accredited, have strong environmental records, and commit to training and hiring locally.

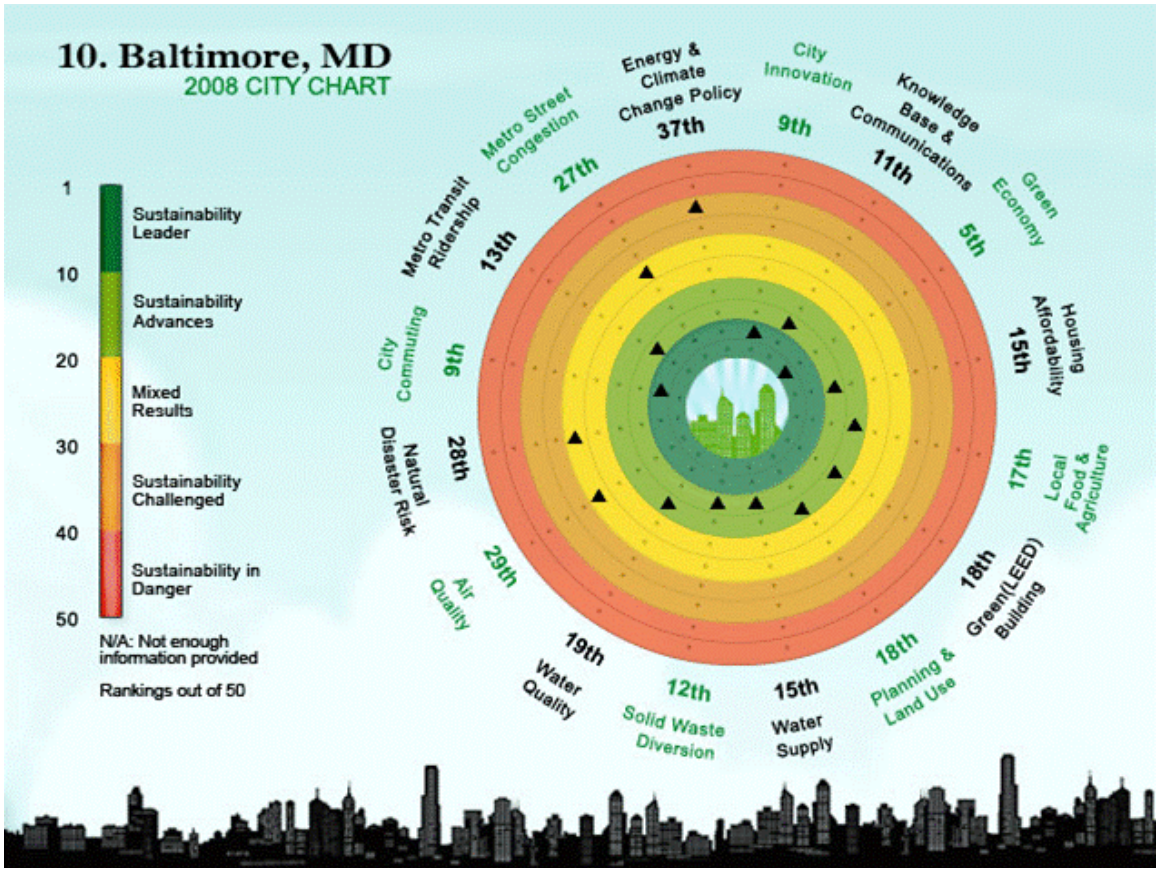
- Mid-term
- Standards
- Cost-Neutral
- DoF, DLLR

Strategy D

Identify sectors and products for a sustainability-related manufacturing niche in Baltimore

Explore potential to manufacture sustainability-related products not readily available or produced in the region currently. Lessons can be learned from Chattanooga, TN which has become the regional leader in production of electric buses. A similar niche-market can be a source of job creation, exports, and recognition for Baltimore.

- Ongoing
- Partnerships
- TBD
- BDC, Private Sector



Sustainlane 2008 City Rankings

3 Support local Baltimore businesses

Supporting local businesses is economically, socially, and environmentally beneficial for Baltimore. Local businesses create of a pool of skilled and semi-skilled workers; act as a source of innovation in products, services, and techniques; link socially, economically, and geographically diverse sectors; and provide a training ground for entrepreneurial and managerial talent. In addition, local businesses have a greater allegiance to their communities, provide civic leadership, increase sales tax revenues, and give our city a unique identity. Non-profit organizations receive 350% more support from local business owners than from non-locally owned businesses. Businesses which are unique locally are good for local tourism as well, attracting visitors that want a more distinct Baltimore. Additionally, purchasing goods and services locally reduces the need to travel, saving fuel, improving air quality, and reducing greenhouse gas emissions.

Strategy A

Educate Baltimore City residents on the importance of supporting local businesses

Create more support for local businesses by highlighting the economic, social, and environmental value of buying local.

- Short-term
- Partnership
- Grant Programs; Existing City Programs
- CSBA, BDC, MOWMOB

Strategy B

Develop tools to connect local suppliers to businesses, consumers, and government

Support the use of local business transactions to curb the loss of consumer, business, and government dollars that go to purchasing products and services from companies outside of our community. Evaluate methods used by the Oregon Marketplace program, which links local suppliers with local buyers. In its first year, the program generated $2.5 million in new contracts and 100 new jobs for Oregon. Promote the online marketplace (e.g. www.buylocalbaltimore.com), a database that facilitates wholesale business-to-business transactions and consumer retail purchasing from independent businesses committed to a healthy workplace, environment, and local economy.

- Short-term
- Partnership
- Grant Programs; Existing Program Funds
- CSBA, BDC

Strategy C

Increase local government purchasing of local products

Change purchasing specifications to give preference to local firms that pay a living wage and share profits and ownership with workers, or to those that will help the City establish a foothold in the emerging environmentally-sustainable economy. Consider a strategy similar to that in Washington D.C., through which a 5% preference for local firms is given in procurement bids.

- Short-term
- Policy/Operational
- Cost-Neutral
- DoF, MOED

4 Raise Baltimore's profile as a forward thinking, green city

The global market for environmental products and services is projected to double from $1,370 billion per year at present to $2,740 billion by 2020, according to a study cited in the Green Jobs: Toward Decent Work in a Sustainable, Low-Cost World report. Branding Baltimore as a progressive, green city has the potential to attract "green" investors and businesses as well as residents who are drawn to the quality of life provided by a sustainable city. Positive exposure for Baltimore's progress in the realm of sustainability will ultimately benefit the local economy and people.

Strategy A

Create a brand for Baltimore's Sustainability initiative

Develop and implement a highly recognizable brand for Baltimore's sustainability activities and initiatives. Leverage a brand to demonstrate the interconnectivity and common vision of the initiatives involved in creating a sustainable Baltimore.

- Short-term
- Partnership
- Grants
- BACVA

Strategy B

Attract sustainability-related conventions and events to Baltimore

Identify new opportunities to bring sustainability related events to Baltimore, such as the National Greening Rooftops for Sustainable Communities Conference in 2008. Bringing sustainability-related events to Baltimore provides our community with chances to learn and gives the City a chance to highlight its work in this arena. The newly-opened convention center, which boasts one of the largest green roofs in the state, offers and excellent venue for such events.

- Mid-term
- Partnership
- Cost-Neutral
- BACVA, BOPA, Local Institutional Partners

Strategy C

Target the tourism industry to promote Baltimore as a green city

Enlist local hotels, tour operators, and visitor travel outlets to communicate information about Baltimore's sustainability efforts. This will encourage people to visit Baltimore, as well as enable them to take the message home to share with others. The message will encourage visitors to be good stewards of our city during their time in Baltimore. The City will provide incentives to hotels and/or convention planners who conduct "green" events (composting and recycling, avoiding bottled water, using local food, etc.).

- Mid-term
- Partnership
- Cost-Neutral
- BACVA, BOS, Partners

Strategy D

Support innovative and pilot projects and technologies

Demonstrate leadership in Baltimore by leading by example and support the testing of new technologies and science to advance sustainable initiatives.

- Ongoing
- Partnership
- Grant Programs; Existing Program Funds
- Baltimore City Government, Green Businesses, Communities, NGOs

Strategy Crossover Benefits Table

	Goal	Strategy	Crossover Benefits						
CLEANLINESS	1: Eliminate litter throughout the City	**A:** Educate residents and businesses about proper trash storage and disposal	o	X	X			X	
		B: Expand existing programs to maximize public trash and recycling bin use	o	X	X			X	
		C: Launch a public education campaign to change the public's attitude toward litter	o	X	X			X	
		D: Issue every household a large municipal trash can	o	X					
		E: Improve the enforcement of current sanitation code	o	X				X	
	2: Sustain a clean and maintained appearance of public land	**A:** Establish city-wide maintenance standards for publicly owned land	o			X		X	
		B: Build capacity of existing city maintenance staff through training and education	o			X		X	
		C: Expand adoption and community stewardship of public land	o			X		X	
	3: Transform vacant lots from liabilities to assets that provide social and environmental benefits	**A:** Strengthen enforcement of dumping and litter laws	o	X				X	
		B: Increase participation in community maintenance and stewardship efforts	o	X		X		X	
		C: Create and sustain a land trust to support community-managed open space	o	X		X			
		D: Return abandoned properties to productive use	o		X	X			X
		E: Establish a new fee schedule charged to absentee property owners	o	X					
POLLUTION PREVENTION	1: Reduce Baltimore's greenhouse gas emissions by 15% by 2015	**A:** Create a Climate Action Plan for the City of Baltimore		o	X	X	X	X	X
		B: Implement Climate Action Plan for the City of Baltimore		o	X	X	X	X	X
	2: Improve Baltimore's air quality and eliminate Code Red days	**A:** Add an air quality and climate change implication evaluation to all government-funded projects		o	X	X	X	X	
		B: Create Code Red/Orange day policies		o	X		X	X	
		C: Explore options for more efficient fleet conversion		o	X		X	X	
		D: Institute and enforce a city-wide no-idling policy		o	X		X	X	
	3: Ensure that Baltimore water bodies are fishable and swimmable	**A:** Implement recommendations in the City County Watershed Agreement	X	o	X	X		X	
		B: Study creation of a stormwater utility or other new funding sources		o	X	X			
		C: Reduce amount of impervious surfaces and increase on-site stormwater treatment	X	o		X			
		D: Protect and restore Baltimore's stream corridors	X	o		X		X	
		E: Create watershed-based natural resource management plans		o		X		X	
		F: Increase actions by individual property owners to treat stormwater		o	X	X		X	
	4: Reduce risks from hazardous materials	**A:** Adopt the "Precautionary Principle" as the underlying policy standard		o				X	X
		B: Adopt a policy and plan for elimination of pesticide use and other toxic chemicals		o		X		X	
		C: Comply with the Maryland Integrated Pest Management (IPM) in Schools mandate		o	X	X		X	
		D: Enact an ordinance prohibiting the use of known toxins in health care delivery settings		o				X	
		E: Aggressively promote the redevelopment of Brownfield sites	X	o		X		X	
	5: Improve the health of indoor environments	**A:** Use green cleaning products in schools, government offices, and businesses		o		X		X	X
		B: Explore the feasibility of making all Baltimore multifamily dwellings smoke-free by 2010		o				X	X
		C: Increase and coordinate all healthy housing efforts		o				X	
		D: Ensure coordination among weatherization, lead remediation, and healthy homes activities		o	X	X		X	X

	Goal	Strategy	Crossover Benefits						
RESOURCE CONSERVATION	1: Reduce Baltimore's energy use by 15% by 2015	**A:** Require aggressive energy efficiency standards as part of the Baltimore Green Building Standards		X	o				X
		B: Improve the energy efficiency of existing homes and buildings		X	o			X	X
		C: Increase renewable energy generation in Baltimore City		X	o				X
		D: Mandate efficiency upgrades to homes at point of sale		X	o			X	X
		E: Increase energy conservation by residents, City government, businesses, and institutions		X	o		X	X	X
		F: Dedicate resources to assist Baltimore in leveraging state and federal funds for energy efficiency		X	o		X	X	X
		G: Investigate a "Lights Out" policy for appropriate areas of Baltimore City		X	o			X	X
	2: Reduce Baltimore's water use while supporting system maintenance	**A:** Conduct public education program on reducing water consumption			o			X	
		B: Study methods to fund the construction and maintenance of Baltimore's water supply System		X	o			X	X
		C: Maintain a comprehensive water facilities master plan			o			X	X
	3: Minimize the production of waste	**A:** Distribute information on waste-reducing purchasing policies			o			X	X
		B: Establish Baltimore City Green Purchasing guidelines		X	o			X	X
		C: Educate consumers about product life-cycle analysis		X	o			X	X
		D: Link industrial and commercial users to close waste loops		X	o			X	X
		E: Expand Baltimore's composting program and opportunities		X	o			X	X
		F: Develop and implement local legislation related to waste minimization	X	X	o			X	X
	4: Maximize reuse and recycling of materials	**A:** Increase recycling opportunities throughout the City	X		o			X	X
		B: Increase resident and business participation in the single stream recycling program	X		o			X	X
		C: Expand types of materials accepted by the single-stream recycling program	X		o			X	X
		D: Preserve, reuse, and recycle buildings and related materials	X		o			X	X
		E: Institute once weekly recycling and once weekly trash pick up service	X		o			X	X
GREENING	1: Double Baltimore's Tree Canopy by 2037	**A:** Assess current urban forest cover		X	X	o		X	
		B: Protect our existing trees	X	X	X	o			
		C: Build communication and cooperation among city agencies to support Baltimore's trees				o		X	
		D: Develop a city-wide education program about the value of trees				o		X	
		E: Develop and strengthen innovative public-private partnerships				o		X	X
		F: Identify and pursue opportunities for increasing trees planted on private property				o		X	X
		G: Increase tree plantings in sidewalks, medians and other public right-of-ways				o	X	X	X
	2: Establish Baltimore as a leader in sustainable, local food systems	**A:** Increase the percentage of land under cultivation for agricultural purposes	X	X		o			X
		B: Improve the quantity and quality of food available at food outlets				o			X
		C: Increase demand for locally-produced, healthy foods by schools, institutions, supermarkets, and citizens				o		X	X
		D: Develop an urban agriculture plan				o		X	X
		E: Implement Baltimore Food Policy Task Force recommendations related to sustainability and food				o		X	
		F: Compile local and regional data on various components of the food system				o		X	X
	3: Provide safe, well-maintained public recreational space within ¼ mile of all residents	**A:** Conduct an inventory and assessment of existing and potential outdoor spaces for recreation				o		X	
		B: Develop a plan with recommendations for increasing the quantity, quality, and use of recreation spaces	X			o		X	
		C: Create an inclusive organizational system to support stewardship of public spaces	X			o		X	
	4: Protect Baltimore's ecology and biodiversity	**A:** Manage Baltimore City land to restore, conserve, and create habitat for native species and eliminate invasive plant species	X	X		o			
		B: Implement sustainable landscape maintenance practices throughout the City	X	X		o			
		C: Develop and implement a system to regenerate soil health in Baltimore City	X	X		o		X	
		D: Build community support to conserve and restore Baltimore City's urban stream ecosystem		X		o		X	
		E: Support and develop native plant nurseries in the city	X			o		X	X

	Goal	Strategy	Crossover Benefits						
TRANSPORTATION	1: Improve public transit services	**A:** Make software upgrades to allow for transit signal priority		X	X		o		
		B: Implement an integrated system of downtown shuttle and trolley routes		X	X		o		X
		C: Work with the MTA to expand QuickBuses to more high-volume transit corridors		X	X		o		
		D: Bring the Red Line Transit project to Baltimore		X	X		o		X
		E: Work with the MTA to develop and implement an ideal transit service profile for MTA routes		X	X		o		X
	2: Make Baltimore bicycle and pedestrian friendly	**A:** Implement the Baltimore Bicycle Master Plan		X	X		o		
		B: Develop a Bike to Work program for Baltimore		X	X		o	X	X
		C: Evaluate the creation of a bicycle sharing service		X	X		o		X
		D: Expand the Safe Routes to Schools program		X	X		o	X	
		E: Implement 'Sunday Streets' recreational street closure program		X	X		o	X	X
		F: Improve public infrastructure for cyclists and pedestrians		X	X		o		
	3: Facilitate shared-vehicle usage	**A:** Establish Baltimore CarShare program		X	X		o		X
		B: Expand the CityCommute Rideshare program		X	X		o	X	X
		C: Leverage new Baltimore Green Building Standards to increase shared-vehicle use		X	X		o		
	4: Measure and improve the equity of transportation	**A:** Track the disparity of transportation costs by neighborhood relative to income					o	X	X
		B: Identify strategies to reduce the disparity in cost of transportation relative to income					o	X	X
		C: Work with the MTA to measure the quality of transit service in Baltimore neighborhoods					o	X	X
	5: Increase transportation funding for sustainable modes of travel	**A:** Advocate for more funding for transit and sustainable transportation		X	X		o		X
		B: Implement goals of Mayor's Transportation Investment Commission (TIC) report		X	X		o		
		C: Explore options for a new regional transit funding source and a larger local role in managing the MTA		X	X		o		X
		D: Expand eligible expenses under sustainable transportation programs		X	X		o		X
		E: Advocate shifting funding from roadway capacity expansion to transit, bicycling, and walking projects		X	X		o		X
EDUCATION & AWARENESS	1: Turn every school in Baltimore City into a green school	**A:** Incorporate sustainability into curriculum and activities		X	X	X		o	X
		B: Build and retrofit green school buildings		X	X			o	X
		C: Adopt a green facilities management guide for school operations		X	X	X		o	
		D: Implement a teacher training and certification program for sustainability						o	X
		E: Recognize schools making strides in sustainability		X				o	X
	2: Ensure all city youth have access to environmental stewardship programs and information	**A:** Develop a sustainability education and community service program	X	X	X	X		o	X
		B: Create a website devoted to the youth perspective on the environment						o	X
		C: Create a Youth Ambassador Team to educate their peers about sustainability		X	X			o	X
	3: Raise the environmental awareness of the Baltimore community	**A:** Utilize a Sustainability Ambassador network for community outreach	X	X	X	X	X	o	X
		B: Coordinate a Year-Long Baltimore Sustainability Calendar	X	X	X	X	X	o	X
		C: Increase public knowledge of alternative transportation options		X	X		X	o	
		D: Launch city-wide sustainability challenges to a variety of audiences		X	X	X	X	o	X
		E: Engage membership organizations to develop and disseminate targeted sustainability information		X	X	X	X	o	X
	4: Expand access to informational resources on sustainability	**A:** Develop an interactive website for the Baltimore Office of Sustainability (BOS)	X	X	X	X	X	o	X
		B: Create local Green Pages as resource guide						o	X
		C: Utilize existing community centers to distribute sustainability information	X	X	X	X	X	o	X
		D: Support innovative resources on sustainability	X	X	X	X	X	o	X

	Goal	Strategy	Crossover Benefits						
GREEN ECONOMY	1: Create green jobs and prepare city residents for these jobs	**A:** Add clean technology to Baltimore's targeted growth sectors		X	X				o
		B: Conduct needs assessment of green job demand							o
		C: Link existing job training programs to the information provided in the green jobs needs assessment (above)						X	o
		D: Encourage the employment of Baltimore residents in City clean energy projects		X	X				o
		E: Convene Green Collar Summit						X	o
		F: Develop a to secure available funding						X	o
	2: Make Baltimore a center for green business	**A:** Leverage Baltimore's natural amenities attractive to green technology businesses and market them					X	X	o
		B: Establish and market creative financing strategies for local green businesses							o
		C: Encourage construction industry to use "green" building practices		X	X				o
		D: Identify sectors and products for a sustainability-related manufacturing niche in Baltimore		X	X				o
	3: Support local Baltimore businesses	**A:** Educate Baltimore City residents on the importance of supporting local businesses			X			X	o
		B: Develop tools to connect local suppliers to businesses, consumers, and government			X				o
		C: Increase local government purchasing of local products			X				o
	4: Raise Baltimore's profile as a forward thinking, green city	**A:** Create a brand for Baltimore's Sustainability initiative						X	o
		B: Attract sustainability-related conventions and events to Baltimore						X	o
		C: Target the tourism industry to promote Baltimore as a green city		X	X		X	X	o
		D: Support innovative and pilot projects and technologies	X	X	X	X	X	X	o

Glossary of Terms

Bicycle sharing – increasingly popular system whereby bicycles are made available on a large scale throughout a city allowing people to have ready access to these public bikes rather than rely on their own bikes.

Biodiversity – biological diversity in an environment indicated by the numbers of different species of plants and animals. A diverse ecosystem is a healthy ecosystem.

Brownfield – abandoned or underused industrial and commercial facilities available for re-use. Often incentives are given to expand or redevelop such parcels to help overcome obstacles arising from real or perceived environmental contamination.

Brownout – voltage drop in electrical power supply, so named because it typically causes lights to dim. These malfunctions are often caused by electricity demand that overwhelms available electricity supply.

Car Sharing – a model of car rental that allows people to rent cars for short periods of time, often by the hour, made available in convenient, decentralized locations. Car sharing programs are often found in urban markets and allow an alternative to car ownership to people who may use a vehicle only occasionally.

Cleaner Greener Baltimore Initiative – Mayor Sheila Dixon's initiative to make Baltimore a Cleaner, Greener, Safer, and Healthier City through litter reduction, community clean-ups, and increased recycling. *www.cleanergreenerbaltimore.com/about.aspx*

Climate Change – commonly used interchangeably with "global warming" and "the greenhouse effect." Climate change refers to the buildup of man-made gases in the atmosphere that trap the suns heat, causing changes in weather patterns on a global scale. The effects include changes in rainfall patterns, sea level rise, potential droughts, habitat loss, and heat stress. The greenhouse gases of most concern are carbon dioxide, methane, and nitrous oxides. If these gases in our atmosphere double, the earth could warm up by 1.5 to 4.5 degrees by the year 2050, with changes in global precipitation having the greatest consequences.

Code Orange & Red Days – classification of days with poor air quality in which the public is advised to minimize outdoor physical activity for public health reasons.

Conservation Easement – legal agreements by which landowners voluntarily limit the development potential and use of their land.

Compost – Decomposed organic material that is produced when bacteria in soil break down garbage and biodegradable trash, making organic fertilizer. Making compost requires turning and mixing and exposing the materials to air. Gardeners and farmers use compost for soil enrichment.

Comprehensive Plan – Baltimore City Comprehensive Master Plan originally developed in 2006 *www.ci.baltimore.md.us/government/planning/compplan/*

Energy Star – joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy helping us all save money and protect the environment through energy efficient. *www.energystar.gov*

Ecosystem – the interacting synergism of all living organisms in a particular environment; every plant, insect, aquatic animal, bird, or land species that forms a complex web of interdependency. An action taken at any level in the food chain, use of a pesticide for example, has a potential domino effect on every other occupant of that system.

Environmental Justice – the fair treatment of people of all races, cultures, incomes, and educational levels with respect to the development and enforcement of environmental laws, regulations, and policies. Fair treatment implies that no population should be forced to shoulder a disproportionate share of exposure to the negative effects of pollution due to lack of political or economic strength.

Environmental Stewardship – the responsibility for environmental quality shared by all those whose actions affect the environment.

Friends of Patterson Park – non-profit membership organization formed in 1998 to promote and protect Patterson Park and ensure the vitality of Baltimore's best backyard for present and future generations. *http://www.pattersonpark.com/*

Sustainable Food System – system that provides healthy food to meet current food needs while maintaining healthy ecosystems that can also provide food for generations to come with minimal negative impact to the environment. A sustainable food system also encourages local production and distribution infrastructures and makes nutritious food available, accessible, and affordable to all.

Forest Cover – all trees and other plants occupying the ground in a forest, including ground cover. Forest cover is one of the best single indicators of changing land use.

Global Warming – see "Climate Change"

Green Building – the practice of increasing the efficiency with which buildings use resources – energy, water, and materials — while reducing building impacts on human health and the environment during the building's lifecycle, through better siting, design, construction, operation, maintenance, and removal.

Greenhouse Gas – gases in the atmosphere that trap heat from the sun and warm the Earth. While these occur naturally, human combustion of fossil fuels has built up an accumulation of greenhouse gases which is the fundamental cause of the global warming. Common greenhouse gases in the Earth's atmosphere include carbon dioxide, methane, nitrous oxide, ozone, and chlorofluorocarbons.

Greenscape '08 – event specifically for young people, by young people, which incorporated art, music, education and fun to generate interest in the subject of sustainability.

Green space – open, undeveloped land with natural vegetation.

Ground Water – water held underground in soil or permeable rock, often feeding springs and wells. It is recharged naturally by rain and snow melt and to a smaller extent by rivers and lakes. Recharge may be impeded by human activities including paving, development, or logging.

Invasive Plant Species – exotic (imported) plant species which disperse quickly throughout habitat, dominating and inhibiting the natural growth cycles of native species. Native species have no effective survival strategies for defense because they have not co-evolved with invasive species.

Impervious Surface – mostly artificial surfaces (roads, rooftops, sidewalks and parking lots) that prevent rain from replenishing underground water supplies and enable pollutants such as gasoline and trash to concentrate in waterways.

Land Trust – nonprofit organization that assists landowners who wish to voluntarily conserve their properties.

Native Species – local species which have evolved adaptations that enable successful lifecycles using available resources and within their immediate habitat region.

Natural resources – valuable goods provided by nature which humans depend on for basic survival such as air, water, timber, metals, animals, and plants.

Organically Grown – method of growing food without the use of synthetic fertilizers or pesticides, free from contamination by human or industrial waste, and processed without food additives. Generally, organic food is better for ecological and human health.

Parks and People Foundation – Baltimore-based nonprofit organization that helps to improve the physical, social and environmental quality of neighborhoods through greening activities and forming networks among communities to sustain natural resources. *www.parksandpeople.org*

Particulate matter – type of air pollution that includes dust, soot, solid particles or liquid droplets suspended or carried in the air such as soot, dust, fumes, mist.

Public Right-of-Way – right of way which permits the public to travel over it such as a street, road, sidewalk, or footpath.

Pest – living organisms that occur where they are not wanted or that cause damage to crops or humans or other animals. Examples include insects, mice and other animals, unwanted plants (weeds), fungi, and microorganisms such as bacteria and viruses.

Pesticide – substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest.

Product Lifecycle Analysis – analysis of the environmental impacts of a product including the raw material acquisition, manufacturing, packaging, transportation, use, and final disposal.

Rock Weir – engineering structure made of stones that have been collectively combined and arranged to channel water and prevent soil erosion damage.

Shared Vehicle Usage – systems that encourage individuals to share cars such as carpooling, vanpooling, and car sharing. Advantages of shared-use vehicle systems include cost savings to the user, better utilization of vehicles, reduced fuel use and emissions, and improved access to established transit.

Single Stream Recycling – system in which all recyclable materials (paper, bottles, cans, etc.) are mixed together in a collection truck, instead of being sorted into separate commodities by the resident and handled separately throughout the collection process.

Social Marketing – area of marketing focused on developing and disseminating messages to achieve a social good.

Solid Waste Diversion – diverting waste from landfills through recycling, green waste, and composting programs.

Stormwater – rainfall that runs off roofs, roads, and other surfaces where it flows into gutters, streams, rivers and creeks, and eventually into the bays. This water can carry contaminants such as plastic bags, detergents, nutrients and heavy metals.

Sustainability – meeting the current environmental, social, and economic needs of our community without compromising the ability of future generations to meet these needs.

Sustainable Transportation – efficient transit of goods and services which reduces the need for fossil fuels, causes less traffic congestion, emits less greenhouse gases and other air pollutants, and facilitates public health.

Tree Canopy – area covered by the tops of trees which provide shade and a habitat zone for both bird and other species.

Urban Heat Island Effect – urban area which is significantly warmer than its surrounding rural areas. The main cause is modification of the land surface by urban development such as replacing green areas with pavement. Green space, trees, and light and reflective surfaces help to reduce the urban heat island effect.

Watershed – area of land from which water from rain or snow melt eventually drains into a body of water.

Weatherization – making modifications to a building to optimize energy efficiency and reduce energy consumption such as sealing air leaks.

Glossary of Acronyms

BACVA Baltimore Area Convention and Visitors Association
www.baltimore.org

BCF Baltimore Community Foundation
www.bcf.org

BCPSS Baltimore City Public School System
www.bcps.k12.md.us

BDC Baltimore Development Corporation
www.baltimoredevelopment.com

BGE Baltimore Gas & Electric Company
www.bge.com

BMC Baltimore Metropolitan Council
www.baltometro.org

BOPA Baltimore Office of Promotion & the Arts
www.bop.org

BOS Baltimore Office of Sustainability
www.baltimorecity.gov/sustainability

CHAP Commission for Historical & Architectural *Preservation www.ci.baltimore.md.us/government/historic*

CoS (Baltimore) Commission on Sustainability
www.baltimorecity.gov/sustainability

CSA Community Supported Agriculture

CSBA Chesapeake Sustainable Business Alliance
www.csballiance.org

CWA Clean Water Act
www.epa.gov/watertrain/cwa/

DGS (City of Baltimore) Department of General Services

DLLR (Maryland) Division of Labor and Industry
www.dllr.state.md.us

DoF (City of Baltimore) Department of Finance
www.baltimorecity.gov/government/finance

DoH (City of Baltimore) Department of Health
www.baltimorecity.gov/government/health

DoP (City of Baltimore) Department of Planning
www.baltimorecity.gov/government/planning

DoT (City of Baltimore) Department of Transportation
www.baltimorecity.gov/government/transportation

DPW (City of Baltimore) Department of Public Works
www.baltimorecity.gov/government/dpw

DRP (City of Baltimore) Department of Recreation and Parks
www.baltimorecity.gov/government/recnparks

HCD (City of Baltimore) Housing and Community Development
www.baltimorehousing.org

HUR Highway User Revenue

LEED The Leadership in Energy and Environmental Design developed by the U.S. Green Building Council (USGBC)
www.usgbc.org

MBAC Mayor's Bicycle Advisory Council

MD-IPM Maryland Integrated Pest Management
www.mdipm.umd.edu

MDoT Maryland Department of Transportation
www.mdot.state.md.us

MHA Maryland Hospital Association
www.mdhospitals.org

MOED (City of Baltimore) Mayor's Office of Employment Development
www.oedworks.com

MPN Maryland Pesticide Network
www.mdipm.umd.edu

MTA Maryland Transit Administration
www.mtamaryland.com

NEMWDA Northeast Maryland Waste Disposal Authority
www.nmwda.org

NGO Non-governmental organization

TSP Transit-signal priority

TOD Transit oriented development

YAG (Baltimore Office of Sustainability) Youth Advisory Group

Acknowledgements

Baltimore Commission on Sustainability

Davis Bookhart

Cheryl Casciani, *Chair*

John Ciekot

Peter Doo

David Dunphy

Raymond Ehrlich

Lynn Heller

Brian Knight

Jim Kraft

Keith Losoya

Patrick McMahon

Ruth Ann Norton

John Quinn

Jake Ruppert

Josh Sharfstein

Tonya Simmons

Ali Smith

Scot Spencer

Tom Stosur

Alyson Taylor

Mary Washington

Sustainability Plan Project Manager

Sarah Zaleski

Baltimore Office of Sustainability Staff

Beth Strommen,
Manager, Office of Sustainability

Brett Buikema

Gary Letteron

Duncan Stewart

Sarah Zaleski,
Sustainability Coordinator

Baltimore Office of Sustainabilty Interns

Matthew Bell

Amy Burch

Sophia Finfer

Elizabeth Fox

Kara Hubbard

Cassandra Kapsos-Scouten

Katherine Rainone

Paul Skorochod

Lindsay Tague

Sustainability Plan Design

Tilt Studio Inc.

Sustainability Community Ambassadors

Miriam Avins

Dion Cartwright

Alan Cohen

Lisa Cox

Will Doane

Lorraine Doo

Anne Doyle

Olivia Farrow

Caroline Fichtenberg

Catherine Fleming

Brent Flickinger

Eva Glasgow

Odessa Hampton

Michael Hindle

Jill Lemke

Aaron Meyers

Regina Minniss

Bronwyn Phillips

Jolyn Rademacher

Hillary Reser

Inez Robb

Rebecca Ruggles

Aisha Samples

Madeleine Shea

Terrell Boston Smith

Laura Sundquist

Working Group Members

Built Environment Working Group –

Chairs: Ruth Ann Norton & Julie Gabrielli

Staff: Bronwyn Phillips

Energy & Air Working Group Membership –

Chair: Lynn Heller

Staff: Sarah Zaleski

Green Infrastructure Working Group Membership –

Chairs: Alyson Taylor & Mark Cameron

Staff: Kate Edwards & Anne Draddy

Transportation Working Group Membership –

Chair: Patrick McMahon

Staff: Mark Brown

Waste Working Group Membership –

Chair: Keith Losoya

Staff: Brett Buikema & Beth Strommen

Water Working Group Membership –

Chair: Mary Washington

Staff: Clark Howells

Youth Advisory Group

Destynee Bright
Rámon Brown, Jr.
Brett Buikema, Advisor
Derbin Cabell
Hannah Rose Freedman
Larry Jackson
Oba Joyner
Kion Latham
Deb Kinder
Emilio Martinez Poppe
David Roswell
Ali Smith, Advisor
Daysia Taylor
Jason Toraldo
Adrian Washington

Thank you to the over thousand members of the Baltimore community that helped shape this document!

[redacted]

Notes

Baltimore Office of Sustainability
People · Planet · Prosperity

This document is printed on FSC certified, post-consumer recycled paper.

www.baltimorecity.gov/sustainability