

Sustainability

Healthy air, water, and land, abundant renewable energy sources, and a smaller carbon footprint

Goals



A significant decrease in greenhouse gas emissions, with substantial reductions from the built environment and transportation sector



Efficient public and private use of energy region-wide, with reliance upon renewable energy and alternative fuels for buildings, vehicles, and public transportation



Enhancement of established neighborhoods of differing densities with compact, walkable infill development, rehabilitation and retention of historic sites and districts, and preservation of open space, farmland and environmental resource land in rural areas



Protection and enhancement of the region's environmental resources by meeting and exceeding standards for our air, water, and land



Preservation and enhancement of our region's open space, green space, and wildlife preserves



Capitol Waterfront, Washington, District of Columbia (Forest City)

A More Sustainable Region

Retaining our place as a world capital requires the National Capital Region to use energy and its natural resources wisely. By mid-century, area residents will benefit from green building practices, use agricultural resources efficiently, and conserve energy. The region will be one the nation's most desirable places to live because it will be a leader in sustainability.

The growing interest in controlling greenhouse gas emissions will lead to new ways to power motor vehicles and even car-sharing programs to limit their use. New housing and commercial developments will adopt technological advances to market themselves as environmentally friendly and carbon neutral. Innovative new solar technology programs will flourish, allowing single households or buildings to generate most of their own energy needs. Many households will use a smart grid technology and earn money by selling power back to the local grid when it is needed most. Improved municipal recycling and composting efforts will be so popular households generate little to no waste. The regional heat island effect has been mitigated due to a reduction in impervious surfaces, green rooftops, and mature trees planted on every street.

Local food grown on agricultural lands and even urban rooftops will supply fresh produce to a larger number of the region's households as well as farmers' markets located at the center of a community. The region's water and air quality will be so healthy they will help attract more families to the region. The Chesapeake Bay's ecosystem will show signs of improvement due to limiting suburban sprawl and aggressive land preservation efforts.

Target: By 2020, all new residential and commercial buildings will be built using sustainable design practices equivalent to LEED Silver Standards



By 2020, the region will focus on making green building standards a requirement for new development. Green building is becoming increasingly mainstream as consumers and builders realize the economic and environmental benefits of reduced energy consumption, health, and efficiency. This convergence is occurring at a crucial time, as we face the most significant issues of our generation surrounding climate change and energy security. A study by the McKinsey & Company and the Corporation Board found that the most cost-effective options for reducing greenhouse gas emissions are improving the energy efficiency of residential and commercial buildings (e.g. lighting and heating, appliances, ventilation, and air conditioning systems). These investments also serve to save consumers money and improve the health of building occupants.

The region and its local governments have a history of achieving higher standards for green building and sustainable design. In December 2007, COG adopted a regional green building policy, including a vision of making the region a national leader on the issue. A key component of COG policy identifies the Leadership in Energy and Environmental Design Building Rating System (LEED) as the region’s preferred green building system for rating commercial construction and high-rise residential projects. Existing regional policy includes meeting LEED Silver standards for all new government buildings and LEED-certified-plus standards for all new commercial buildings. Pursuing a more aggressive green building target by 2020—to construct all new residential and commercial buildings to LEED silver standards—will include broader types of developments, beyond current regional policy, focusing mostly on government and commercial buildings. Achieving this target will help shape our built environment to become healthy sustainable places for residents and families. It will also support building industry innovation, and create new job opportunities for residents.



“Green building standards will be vital to achieving our goal of creating a wholly sustainable region,” said Harriet Tregoning, Director of the D.C. Office of Planning.

Target: By 2020, reduce regional greenhouse gas emissions by 20% below 2005 levels. By 2050, reduce emissions by 80% below 2005 levels

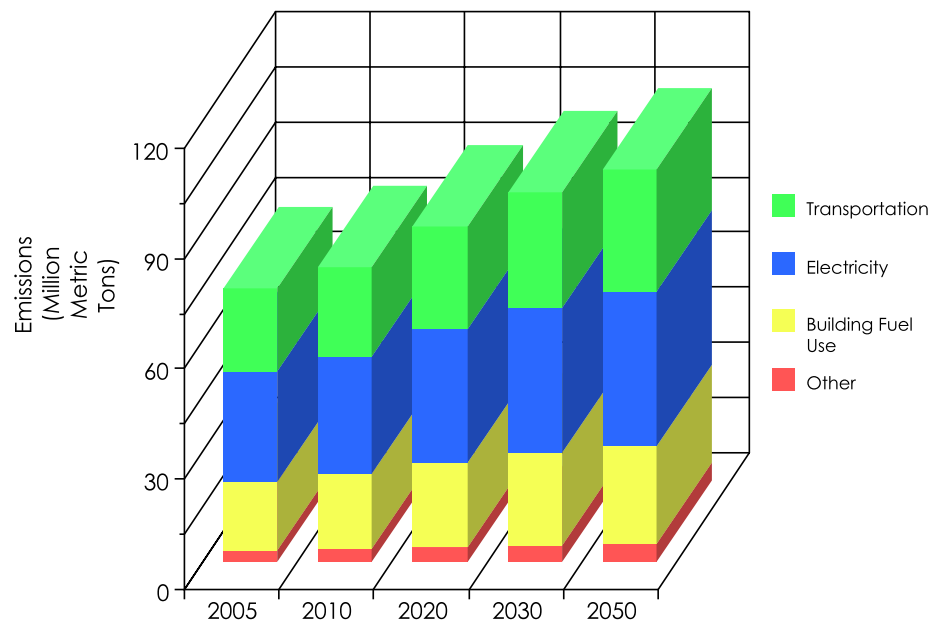


Achieving a short-term greenhouse gas reduction target will require leadership and collective action on behalf of residents, businesses, and leaders. In the past, prosperity was linked to lifestyles and a built environment that were energy-intensive. One of the consequences of these growth patterns has been climate change, resulting in rising air temperatures and sea levels. Climate change is warming water temperatures in the Chesapeake Bay and is threatening our environment. In order to reduce our energy consumption responsible for greenhouse gas emissions, a new path to growth is needed. Achieving this target will require greater use of renewable energies, aggressive strategies to green our built environment, and a shift in transportation priorities, focusing on accessible, walk-bike communities around transit.

The long-term target to reduce greenhouse gas emissions is an ambitious target and reinforces a regional climate change policy commitment established by the COG Board of Directors in 2008. Strategies to meet this target will include energy conservation; adopting and scaling new technologies that produce renewable energy and rely less on oil and coal; retrofitting and designing new efficient green buildings; concentrating new development in Regional Activity Centers; and relying more on modes of transportation such as walking, biking, and transit. All the strategies that help to reduce our region’s carbon footprint will require broader education efforts to understand our interconnected ecosystem and be implemented with the help of individuals, businesses, and government incentives and regulations.

“Climate change has forever altered the way we do business because it requires a more coordinated effort on environmental, land use and transportation planning” said David Robertson, COG Executive Director. “The steps we take to confront this challenge will result in a variety of benefits in other areas.”

CO₂ Emissions Projections for Metropolitan Washington (2005-2050) under Business as Usual



National Capital Region Climate Change Report

Target: Beginning in 2014, the region's air quality will be improving and ambient concentrations will be reduced below federal standards



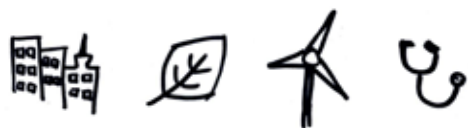
The region will strive for even cleaner air and reduced greenhouse gas emissions, which will improve the health of all residents and the environment. Setting a benchmark to improve air quality and meet current federal standards on concentrations of pollutants in ambient air will help the region measure how successful a multitude of action strategies will be over time. When new federal standards are set, the region will develop plans to meet the new standards for continued improvement in air quality.

Poor air quality consists of dust, dirt, soot, smoke, and liquid droplets hanging in the air. These particles are too small for peoples' respiratory systems to filter, and they get trapped in our lungs where they can adversely affect our health. Most of the particles enter the air through power plants, factories, automobiles, construction vehicles, unpaved roads, wood burning, and agriculture sites.

Creating compact communities reliant on alternative energy sources and providing alternative modes of transportation are important steps to improving our air. Also the ability to adopt new technology that mitigates pollution from power plants and automobiles at a national scale will further contribute to success in meeting this target.

Air quality affects all of the region's residents and workers. Everyone has to breathe and we need to make sure that the air they're breathing is safe.

Target: The region will identify, conserve and enhance a network of protected open spaces, parks, and green infrastructure to provide ecological benefits, wildlife habitat, recreational opportunities, and scenic beauty



A green infrastructure network provides a natural foundation to filter water and air, support diverse animal and plant habitats, and provide agricultural products and recreational opportunities for residents. As the region expands and grows over the next 40 years, it will be important to grow in a manner that doesn't fragment our remaining natural and working lands and obstruct efforts to improve the Chesapeake Bay and protect local rivers and streams. Directing a majority of new growth in Regional Activity Centers will help the region grow in a more compact manner that makes preserving green infrastructure and open space easier. Improving green infrastructure parks and open space will require the region to prioritize these natural lands in manner that identifies gaps and works with land owners and conservation groups to protect our most important natural lands, as well as adopt and approve local green infrastructure plans.

Achieving this goal will require a number of broad-based approaches by residents, nonprofits, philanthropic organizations, businesses, and government. Such approaches to land conservation might include the use of transferable development rights programs, the purchase of development rights, conservation easements, zoning and tax benefits or other incentives that reflect the ecological and social value these natural lands provide. In the face of population growth, these natural or ecosystem services must be afforded greater consideration and priority in the decades ahead. Further fragmentation of our ecosystem will impede the livability and sustainability advantages that this region enjoys.



Target: By 2050, 50% of all sentinel watersheds will be in good or excellent condition



Throughout the COG region, local streams and their watersheds are an important local resource and are closely coupled with downstream ecosystems. Decades of unrestrained agricultural practices followed by extensive urban and suburban development have resulted in damaging erosion and large areas of impervious surfaces. The resulting sediment and stormwater-conveyed pollution destroys local habitats and adversely affect insects and fish in local streams which are the indicators of stream health. Reversing the effects of past practices and ensuring environmentally sensitive land use decisions can restore stream health and contribute to the protection of the larger ecosystems.



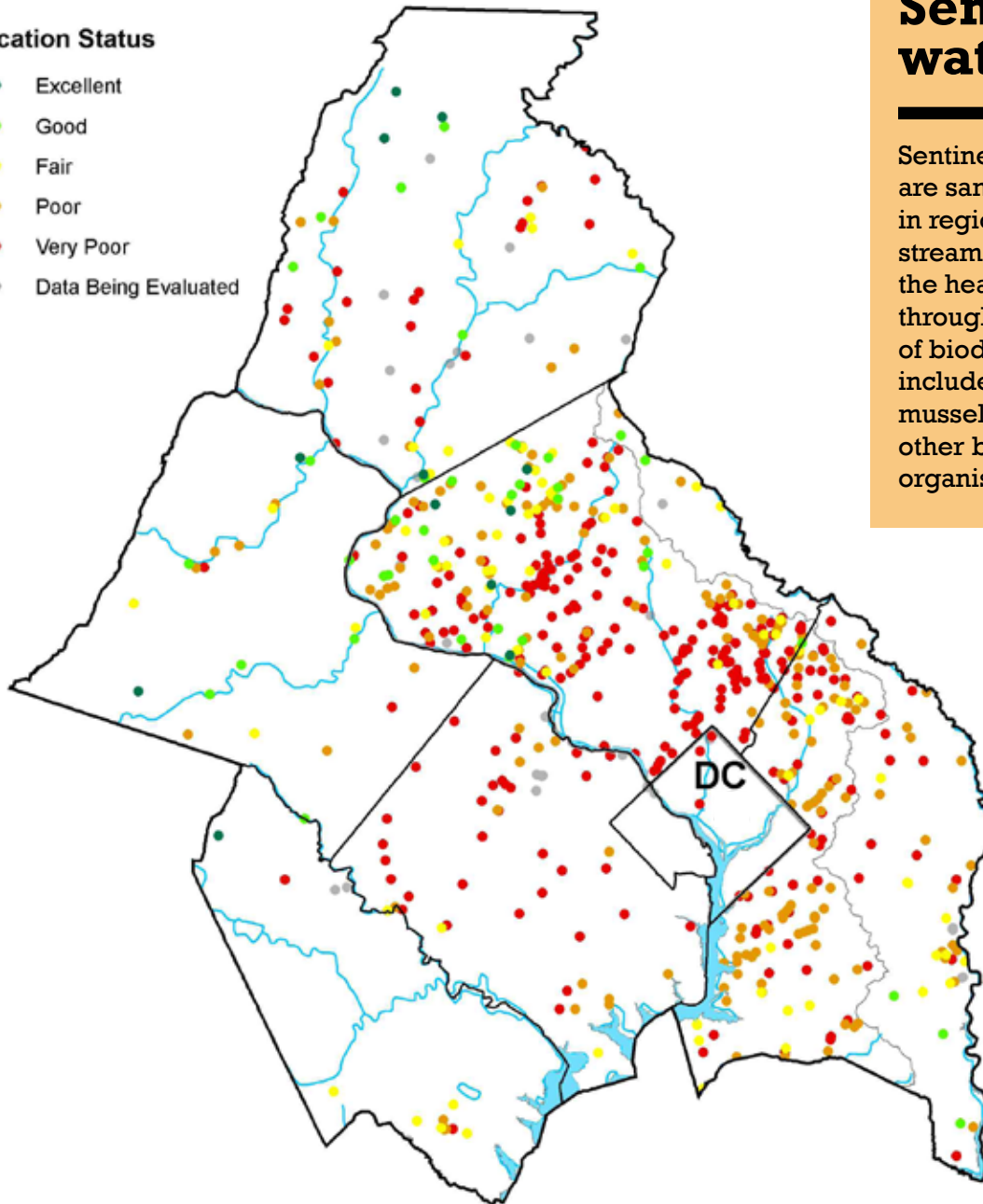
Decades of unrestrained agricultural practices followed by extensive urban and suburban development have damaged our watersheds.

Achieving the regional watershed target for sentinel watersheds will require a broad number of strategies including: retrofitting stormwater controls in impervious areas; extensive stream restoration; environmentally sensitive development patterns and site design, and more extensive use of effective agricultural best management practices. Systematic efforts to restore and protect local watersheds will produce improved habitat and water quality conditions for the region's local streams, the Potomac River, and the Chesapeake Bay. The sentinel watersheds will provide a representative sample of urban, suburban and rural watersheds throughout the COG region.

Health of Freshwater Streams in the National Capital Region

Location Status

- Excellent
- Good
- Fair
- Poor
- Very Poor
- Data Being Evaluated

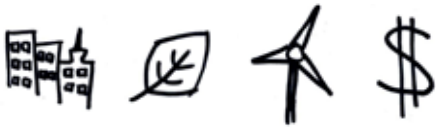


Sentinel watersheds

Sentinel watersheds are sampling points in regional freshwater streams. They measure the health of streams through the abundance of biodiversity that includes snails, mussels, insects, and other bottom-dwelling organisms.

** Map courtesy of the EPA Chesapeake Bay Program*

Target: By 2025, achieve 100% of Chesapeake Bay Program's Water Quality Implementation Goals



Improving water quality to protect living resources, including fish and underwater grasses, is the most critical element in the overall protection and restoration of the Chesapeake Bay and its tributaries. Accordingly, it is incumbent on all sources of nutrient and sediment pollution to limit discharges to achieve the Chesapeake Bay Program's water quality goals. This will require substantial reduction in nutrients and sediment that make their way into the Bay from a variety of sources including: wastewater treatment plants; agricultural and urban stormwater runoff; septic systems; and air pollution from vehicles and power plants. Excess nutrients and sediment lead to "dead zones" and low oxygen levels that threaten fish, blue crabs, oysters, and other underwater life and block light necessary for underwater grasses that provide critical habitat.

By the end of 2010, new nutrient and sediment "pollution budgets" will be mandated throughout the Bay watershed. From this a COG-wide goal can be determined. Despite substantial progress in upgrading wastewater treatment plants and controlling stormwater, jurisdictions in the COG region, as elsewhere in the Bay watershed, will face increasingly stringent nutrient and sediment reduction requirements including: enhanced treatment at wastewater treatment plants; retrofitting large areas of roads, parking lots, roofs and other impervious surfaces; ensuring that advanced stormwater controls are applied to new development; and the widespread use of best practices in the agricultural areas of the region. Much of the work being undertaken by COG members to restore local watersheds such as the Anacostia River, will have a dual benefit – improving the condition of the region's local streams and the Potomac River while also helping to meet the larger Chesapeake Bay restoration goals.

16.6 million

**Population of
the Chesapeake
Bay Watershed**

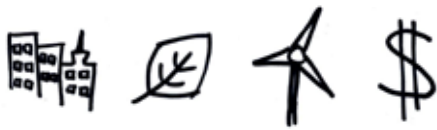
**Nearly 1/3
live in the COG
Region.**



Chesapeake Bay

- **Largest estuary in the United States**
- **200 miles in length**
- **64,000 square mile watershed area**
- **11,684 miles of shoreline**
- **150 major rivers and streams in watershed**

Target: Beginning in 2012, the region will maintain more than 450,000 acres of agriculture land in farms



An agriculture preservation target was developed to focus on improving the regional food system and limiting suburban sprawl on existing farmland. Farmers need increased access to markets that pay them a decent wage for their labor, and farmland needs a land-use strategy for protection from suburban development. Agriculture production provides jobs and income to farmers and farm workers, while farmland provides open space that helps to protect ecosystems and natural resources. Demand for local food will support agriculture jobs and limit the amount of greenhouse gasses produced when transporting food long distances. Currently the majority of energy used in the U.S. food system (around 80 percent) goes to processing, packaging, transporting, storing, and preparing food. Produce in the U.S. travels on average 1,300 to 1,500 miles from farm to consumer. Since 1970, truck shipping has dramatically increased, replacing more energy efficient transportation by rail and water. Local food systems can reduce “food miles” and transportation costs, offering significant energy savings. Consumers also benefit from fresher, better-tasting, and more nutritious food, while more food dollars stay within the regional economy.

Beyond large scale farms, urban agriculture is gaining popularity and can help contribute to a local or regional food source. Additionally, more residents understand the importance of buying their food locally, through purchasing food from local farmers markets or buying shares through a community supported agriculture (CSA) farm. These trends will place greater demand on agriculture land within the region or through urban community gardens.

Approximately 80% of energy used in the U.S. food system goes to processing, packaging, transporting, storing, and preparing food. Local food systems can reduce “food miles” and transportation costs, offering significant energy savings.



Sustainability: Indicators

In addition to targets, COG will be monitoring the following indicators to ensure that the region is moving in the right direction toward achieving its goals:

Emissions per vehicle mile

Energy (Electricity and Natural Gas) use per capita

Percent of Renewable Energy purchased by local governments

Solid Waste Generation per capita

Regional Recycling Rate per capita

Forest Coverage/Tree Canopy

Percent of wastewater treatment capacity remaining

Water usage per capita

Acres of Impervious Surfaces