

## FOCUS AREA 12: Enhance the resiliency of the region's communities and infrastructure ●

**WHAT AND WHY** The effects of climate change in New Jersey are well documented. Temperatures and sea levels are rising and precipitation increasing. These changes are expected to continue throughout this century, and will have serious consequences for North Jersey communities, infrastructure and natural ecosystems. The impacts of recent extreme weather events like Hurricanes Sandy and Tropical Storm Irene were devastating in our region. While it is difficult to say that individual weather events are caused by climate change, scientists expect extreme weather events to become more frequent and perhaps more severe as the effects of climate change continue in the years and decades to come. Local and state officials must take steps to ensure that the North Jersey region is prepared for, can withstand, and recover quickly from adverse events.

Even as measures to reduce global warming are developed, we must adapt our communities to the inevitably changing climate. New Jersey sustained roughly \$30 billion in economic losses from Hurricane Sandy, due in part to inadequate flood protection, land use policies that resulted in development of flood-prone areas, and a lack of understanding about the risks associated with severe storms. Much of this loss was sustained in our region, where extensive damage and repairs disrupted lives, businesses, ports, tourism and the fiscal health of many communities. Resiliency strategies must be incorporated into the land use, hazard mitigation and capital planning process at all levels of government so that future community development and infrastructure investments address the risks associated with extreme weather and a changing climate.

**HOW** This focus area seeks to improve the resilience of both communities and infrastructure in our region. This can be achieved by: identifying better the region's vulnerabilities; implementing measures to adapt our communities and infrastructure to a changing environment; expanding floodplain buyout programs; and using green infrastructure to mitigate the effects of extreme weather and climate change.



**STRATEGY 12.1: Identify and communicate the region’s vulnerabilities to extreme weather and climate change as informed by the most recent climate data for the region**

Identifying solutions that can reduce the impact of flooding, storm surge, sea-level rise, and other climate and weather risks must start by developing a deep, broad understanding of the region’s vulnerabilities. Each community has unique needs, depending on its particular infrastructure, topography, and location. Our region must implement a comprehensive vulnerability assessment process that can help identify potential impacts—on communities, infrastructure, and our economy—and assess our region’s level of preparedness in dealing with those impacts. We should also establish a regional climate change working group to coordinate the assessment process, provide technical assistance and guide implementation. Understanding our vulnerabilities will allow the region to develop the policies and investment strategies necessary to protect residents, property, businesses, infrastructure, and natural systems.

**STRATEGY 12.2: Adapt communities, properties, and infrastructure to be resilient to extreme weather events and the impacts of climate change**

Adapting communities and infrastructure to be more resilient to extreme weather events and the impacts of climate change will minimize future costs in damage, suffering, and loss. Our region’s communities—our homes, commercial properties, public services, and infrastructure (energy, drinking water, wastewater, transportation, and telecommunications systems) must be upgraded and adapted to standards that allow them not just to withstand but to perform optimally under future weather and climate conditions. Adaptation strategies should include elevation or relocation of buildings and infrastructure, wet floodproofing (letting water pass through to minimize structural damage or using water-resistant materials), dry floodproofing (making the structure impermeable), and other types of retrofitting. We can support this effort through improvements in technical assistance and training, resilient design and construction, changes to land use regulations, improved incentive programs, and ensuring that these strategies benefit and support disadvantaged and socially vulnerable populations.

**STRATEGY 12.3: Integrate the consideration of climate change impacts on public health into resilience and adaptation efforts**

Direct and indirect adverse impacts from climate change have increased the breadth and intensity of threats to public health and safety. Impacts of note include more intense, prolonged, and frequent heat waves; more intense and frequent flooding and wildfires; and the spread of pathogens outside of historical-geographical ranges, all of which have increased the threat to public health. Support is needed for adequate funding and planning to assess the various impacts to communities from climate change and associated threats to public health and safety. We also need to protect communities through mitigation measures, including actions to reduce the heat island effect, flooding, wildfires, and the spread of vector-borne diseases and increase community preparedness and resilience focused on health and safety.

**STRATEGY 12.4: Strengthen ecosystem resilience through conservation and stewardship of natural resources**

The environment provides numerous valuable ecosystem services, which are direct and indirect contributions to the health and wellbeing of the planet, including humankind. Among these ecosystem services, several are critical to mitigating climate change and adapting to its effects, including carbon sequestration, flood management and control, and habitat provision. To safeguard these ecosystem services and mitigate climate change and its impact, considerable action and coordination are required at multiple levels of government to preserve and restore natural lands. Our region can work collaboratively with state and local partners to improve planning and coordination, set targets for conservation, develop guidance and best practices, increase funding, create incentives for conservation, and promote/expand floodplain and storm surge buyout programs.

**STRATEGY 12.5: Prioritize green infrastructure solutions to mitigate the impacts of extreme weather and climate change, where appropriate**

According to the U.S. Environmental Protection Agency, green infrastructure uses vegetation, soils, and natural processes to manage water and create healthier urban environments. Green infrastructure refers to the patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water at a city or county scale. At the scale of a neighborhood or site, green infrastructure refers to stormwater management systems that mimic nature by soaking up and storing water. Green infrastructure can provide protection from flooding and storm surges, defend against sea-level rise, and lower the number of combined storm and sewer overflows incidents, particularly in urban areas where much of the surface is paved and impervious to water. Our region needs to eliminate policies and regulations that prevent the use of green infrastructure, implement education programs to improve understanding of green infrastructure’s value and widen the range of incentives available for property owners and local governments to adopt green infrastructure strategies.