

# Addressing Changing Climate

Most scientists agree that the earth is getting warmer and it will continue to do so well into the future, creating a wide range of impacts that include more frequent flooding (think of Lake Champlain flooding and Irene in 2011 and Hurricane Sandy in 2012), droughts, heat waves and air pollution. The key questions are how severe these events will be, what will be the impact on communities like Burlington, and what we can do to mitigate and adapt. Burlington is a recognized leader in local efforts to reduce a community's contribution to rising greenhouse gas (GHG) emissions through the development of a Climate Action Plan first in 2000 and most recently in 2012. The themes, goals and interventions presented throughout this plan all play a central role in helping to reduce Burlington's carbon footprint.

## SIDEBAR

The **National Ambient Air Quality Standards (NAAQS)** are established by the [Environmental Protection Agency](#) under authority of the [Clean Air Act](#) and apply for outdoor air throughout the country. Chittenden County still meets all basic standards and therefore is known as an "attainment area". However, the County has often been and still is very close to a "non-attainment" status which would trigger a set of requirements for improving air quality. Efforts that we undertake as a community to reduce GHG emissions are also critical to our efforts to remain in attainment with Clean Air Act requirements.

In Burlington, roughly 50 percent of human-caused GHG emissions result from transporting people and goods, while another 40% comes from heating and cooling buildings. Notably, overall GHG emissions have also been on the rise between 2007 and 2012. The community has significant opportunities to reduce emissions and air quality concerns from these sources through promotion of multimodal transportation alternatives; compact development patterns; energy-efficient building siting, design and operation; urban forestry and local foods; conservation of natural areas and resources, low impact development practices, and many other initiatives and activities. Many of these strategies are addressed in this plan and will greatly help fight our impact on climate change as well as allow us to better adapt in the face of natural disasters.

Burlington is taking a "**no regrets**" approach to climate change work. Whether one believes climate change is human induced or not, we **DO** know that efforts made at reducing GHG emissions diminish pollution, save money, and can make our community safer and more livable – all really good things. For example, by promoting a more compact urban form, green buildings, and reductions in vehicle-miles-traveled, we **know** there are measurable savings in energy expenses and we reduce air pollution, ensuring that we stay within "attainment" of the federal standards. When we reduce stormwater runoff, plant more trees and adapt our infrastructure to be more climate resilient, we **know** we are also protecting property and people from natural hazards, preventing water pollution, and making our city a more livable place.

Throughout this plan are a number of interconnected strategies that will help us respond and adapt to climate change, and create a more vibrant and sustainable Burlington.

**Compact Mixed-Use Development:** In Burlington, our urban fabric already is compact and actively encourages mixed uses. As we work to make it even better we have the potential to further reduce pollution and congestion, enhance social interaction, improve the efficiency and effectiveness of public service delivery, and create more vitality when compared to a more suburban development pattern.

The greenest building is one that has already been built, so we encourage adaptive reuse of our older building stock. Development in Burlington has to comply with state-of-the-art energy efficiency standards and is served by a robust energy mix dominated by renewable sources. We are actively pursuing the development of a District Energy System that can link the McNeil biomass electric generation plan with the downtown area. In addition, we are looking into ways to support and encourage the development of more “green” buildings that not only reduce lifecycle costs but create premium spaces for a variety of uses. Finally, we want to be sure that we aren’t encouraging new development in places that are increasingly at risk to damage from floods.

**Transportation Choice and Complete Streets:** Given that more than half of all GHG emission comes from transportation, there is much that can be done by encouraging and facilitating more energy-efficient transportation choices – it’s all about reducing vehicle-miles traveled (VMT). Our compact mixed use development pattern results in reductions in how much people need to drive by locating complementary land uses within easy walking distance from one another. By creating more places where people can live and work downtown, we can make it easier for people to reduce car ownership and reduce the amount they drive. By promoting street network connectivity we can more efficiently distribute traffic across the grid thereby significantly reducing congestion and air pollution. When we expand transit service and develop better a bicycling and walking network and facilities, we provide greater menu of choices for how people get here and around town. We can even include incentives that support the use of alternatively-fueled vehicles by installing a network of public charging stations for electric vehicles.

**High Quality Pedestrian Experience:** An important part of creating more “complete” streets is ensuring that they are adequate facilities that meet the needs of all users regardless of ability – this especially focuses on pedestrians within a compact mixed-use environment. Thus we include efforts to ensure that we have a complete and inviting pedestrian environment throughout the area so that residents, visitors and workers are encouraged to spend more time walking rather than driving. This includes wide sidewalks, active uses at the street level, a continuous street tree canopy, safe street crossings and quality lighting.

**Comprehensive Stormwater Management System:** Recent storm events are indicative of why we need to re-think how we manage our stormwater. Here it’s less about what we can do to prevent climate change and more about how we adapt to it. Turning “grey streets to green streets” as called out in the GREEN MACHINE will not only improve the management of stormwater but also actively encourage more trees and plantings which have an important role in the sequestration of CO<sub>2</sub> and reduce the urban heat island effect. These “Green Streets” are also places that are more accommodating and inviting for pedestrians and bicycles which encourage people to drive less. Green roofs and walls on our buildings is a great stormwater management tool which also helps to reduce heating and cooling costs.

**Local Food Economy:** Where your food comes from is also a factor that affects climate change, and that could help the city be more resilient in the future. Did you know that the average meal travels 1200 km from the farm to plate? Burlington has made significant progress towards nurturing a thriving local food economy. Food grown closer to home has fewer transportation emissions associated with it, will be fresher, and supports local farmers who are working to maintain our working landscape. While it's important to buy locally grown food for many reasons, 'food miles' actually make up a relatively small percentage of the overall carbon footprint of food — approximately 11% on average. How our food is grown makes up a much larger percentage — roughly 83%. Many studies have shown that choosing to buy food that is organically grown can be a better choice for the climate. With a changing climate we

can also anticipate changes to growing seasons, plant ranges, and potential pests. So by putting the two together – supporting local organic agriculture - we can have our broccoli and eat it too!

