1. BUILD CARBON NEUTRAL [http://buildcarbonneutral.org/]

The Construction Carbon Calculator estimates embodied carbon. Embodied carbon is the carbon released when a product is manufactured, shipped to a project site and installed. This calculator looks at an entire project, and takes into account the site disturbance, landscape and ecosystem installation or restoration, building size and base materials of construction. It does this simply, requiring only basic information that is available to a project team very early in the design process.

The calculator provides an estimate that establishes a base number to clarify the carbon implications of the construction process – to be used as tool to address the reduction of that footprint. The results you obtain will be an estimation and approximate – accurate within 25%, plus or minus.

2. WASTE REDUCTION MODEL (WARM) [http://epa.gov/epawaste/conserve/tools/warm/Warm_Form.html]

EPA created WARM to help solid waste planners and organizations track and voluntarily report greenhouse gas emissions reductions and energy savings from several different waste management practices. WARM is available both as a Web-based calculator and as a Microsoft Excel spreadsheet. The Excel-based version of WARM offers more functionality than the Web-based calculator.

WARM calculates and totals GHG emissions of baseline and alternative waste management practices—source reduction, recycling, combustion, composting, and landfilling. The model calculates emissions in metric tons of carbon equivalent (MTCE), metric tons of carbon dioxide equivalent (MTCO2E), and energy units (million BTU) across a wide range of material types commonly found in municipal solid waste (MSW).

3. RECYCLED CONTENT (ReCon) TOOL [http://epa.gov/epawaste/conserve/tools/warm/ReCon_Online.html]

The Recycled Content (ReCon) Tool was created by the U.S. Environmental Protection Agency (EPA) to help companies and individuals estimate life-cycle greenhouse gas (GHG) emissions and energy impacts from purchasing and/or manufacturing materials with varying degrees of post-consumer recycled content.

The ReCon Tool calculates GHG emissions and energy consumption related to purchasing and/or manufacturing activities using analyses of baseline and alternative recycled-content scenarios. Emissions and energy units are calculated using a life-cycle perspective (i.e., what impacts will this purchasing or manufacturing decision have on emissions and energy use throughout all stages of this product's life-cycle). The model calculates emissions in metric tons of carbon dioxide equivalent (MTCO2E), and energy consumption in British thermal units (Btu) for several material types. In addition, the model calculates the GHG emissions and energy consumption differential between the two recycled-content scenarios (baseline and alternative). The user can construct various scenarios by entering the amount of materials purchased or manufactured and the recycled content of the types of materials. The ReCon Tool then applies material-specific GHG emission and energy factors to calculate the GHG emissions and energy consumption for each scenario and the benefit of choosing one scenario over another.

4. GREEN VALUES NATIONAL STORMWATER MANAGEMENT CALCULATOR [http://greenvalues.cnt.org/calculator/calculator.php]

The National Green Values™ Calculator is a tool for quickly comparing the performance, costs,

and benefits of Green Infrastructure, or Low Impact Development (LID), to conventional stormwater practices. The GVC is designed to take you step-by-step through a process of determining the average precipitation at your site, choosing a stormwater runoff volume reduction goal, defining the impervious areas of your site under a conventional development scheme, and then choosing from a range of Green Infrastructure Best Management Practices (BMPs) to find the combination that meets the necessary runoff volume reduction goal in a cost-effective way.

The National GVC is currently focused on runoff volume reduction. It does not produce any peak flow results. Volume reduction in this context implies infiltration, evapotranspiration and reuse, and does not include detention in ponds or vaults. All runoff volume captured in BMPs is assumed to be kept on site. The National GVC is meant for a single site or a campus of buildings contained on a single site. If you are interested in looking at the performance and cost/benefit analysis of Green Infrastructure BMPs applied on a neighborhood or watershed scale, consider using the original GVC and/or some of the other stormwater tools provided below.

5. OFFICE CARBON FOOTPRINT TOOL [http://www.epa.gov/smm/wastewise/carboncalc.htm]

The World Resources Institute and World Business Council for Sustainable Development's (WRI/WBCSD) Greenhouse Gas (GHG) Protocol Corporate Standard outline the scopes of 3 different emission source categories. These emission source categories help delineate direct and indirect emission sources, improve transparency in GHG assessment, and provide utility for different types of organizations, climate policies, and business goals. Under each category, different sources of emissions are estimated. The figure below displays these three categories and describes the scope of each one, as well as the sources calculated and included in this tool under their respective category.

Scope 1: Direct GHG emissions occurring from sources that are owned or controlled by the business. This includes electricity, heat, and/or steam produced on-site; company-owned transport; and refrigeration and air conditioning units. Company-owned transportation can include company cars, private jets, and trucks transporting company products.

Scope 2: Indirect GHG emissions resulting from the generation of purchased electricity, heat, and/or steam used in the office.

Scope 3: Indirect emissions from waste disposal, employee transportation, production of purchased materials, and contractor vehicles. Waste-related emissions are a function of the disposal method (e.g., landfilling, recycling, combustion) as well as the types of materials disposed. Employee transportation includes modes and distances employees commute to and from work along with any travel associated with work, such as travel to conferences. The production of purchased materials, such as computers, and paper is included in scope 3 estimates. Also included in scope 3 estimates are off-site computer servers.

6. IMPACT INFRASTRUCTURE BUSINESS CASE EVALUATOR for STORM-WATER MANAGEMENT [http://sustainableinfrastructure.org/tools/stormwater/index.cfm]

The Business Case Evaluator (BCE) has been developed to enhance the Envision rating system, adding the ability for the Envision system to provide value-based and risk-adjusted analyses of infrastructure projects. The current iteration of the BCE tool is designed to be applied to stormwater management projects. This document provides guidance on how users can apply the BCE tool to prospective projects, while also explaining the capabilities and identifying the limitations that users should be aware of.

7. CENTER FOR NEIGHBORHOOD TECHNOLOGY – THE VALUE OF GREEN INFRASTRUCTURE [http://www.cnt.org/repository/gi-values-guide.pdf]

Green infrastructure (GI) is a network of decentralized stormwater management practices, such as green roofs, trees, rain gardens and permeable pavement, that can capture and infiltrate rain where it falls, thus reducing stormwater runoff and improving the health of surrounding waterways. While there are different scales of green infrastructure, such as large swaths of land set aside for preservation, this guide focuses on GI's benefits within the urban context.

The guide aims to: • Inform decision-makers and planners about the multiple benefits green infrastructure delivers to communities. • Guide communities in valuing the benefits of potential green infrastructure investments.

This analysis allows users to evaluate the cumulative benefits of green infrastructure practices in a number of different benefit categories including water, energy, air quality and climate change. The following describes the two-step framework for this valuation process.

Step 1: Quantification of Benefits – concludes with an estimate of the total resource units received from a given benefit.

Step 2: Valuation of Quantified Benefits – values for each benefit are determined based on the resource units from the previous step. The method for translating resource units into a dollar figure differs for every benefit category.

8. USDN TRIPLE BOTTOM LINE INDICATOR [http://www.sustainablecitiesinstitute.org/view/page.basic/calculator/feature.calculator/Calc_USDN_TBL]

HDR developed this Return on Investment (ROI) model for the Urban Sustainability Directors Network (USDN) with input and review from Boston Redevelopment Authority (BRA). This model estimates the triple bottom line (TBL) impacts of investments – economic, environmental, and social benefits. The model's structure focuses on a specific set of project investments to estimate ROI within a sustainability framework. The model is based on HDR's SROI approach to measure the economic, environmental, energy, and social benefits of these strategic investments.

The triple bottom line analysis model allows users to run four types of ROI analysis:

1. Energy Efficiency – LEED, Energy Star, etc, 2. Renewable Energy – Wind, solar, etc, 3. Transportation – Highway, transit, bicycle, pedestrian, etc, 4. Development – Mixed use, transit oriented development (TOD), etc.

9. NOx Control Technology Cost Tool [http://www.epa.gov/airmarket/progsregs/arp/nox.html]

This tool calculates costs and cost-effectiveness ratios for combinations of NOx control technologies for utility boilers with specified characteristics. It works by taking input from the user, such as which boiler is to be analyzed, and/or what the boiler's characteristics are. Use of the tool requires Microsoft Excel or a compatible spreadsheet program.