

MEMO: Climate Impact Decision Assist Tool (CIDAT)

Summary

Bunker Hill Community College (BHCC) has developed a prototype for an innovative decision making tool known as the Climate Impact Decision Assist Tool (CIDAT) that helps to measure environmental impacts of various products purchased by the College. The tool assigns a monetary value to the selected climate impact categories such as amount of energy used, tones of CO2 emissions and the amount of wastewater and/or solid waste used. Once data has been recorded, CIDAT tabulates the monetary value of all environmentally related measures and then calculates a benefit/cost ratio. Ultimately, CIDAT provides an array of new sustainability related information that has not previously been systematically included within the decision making processes at the College.

In this initial prototype, BHCC has utilized CIDAT to compare the environmental impacts of utilizing virgin copy paper with that of 30% and 50% recycled copy paper alternatives. Our school currently uses approximately 64 tons of copy paper each year. The tool allows comparison between a variety of alternative options and illustrates that BHCC's decision to purchase only 30% recycled copy paper has saved nearly 500 trees, reduced CO2 emissions by nearly 50,000 tonnes, saved over 227,000 gallons of water and reduced solid waste by 13,800 pounds in the first year alone.

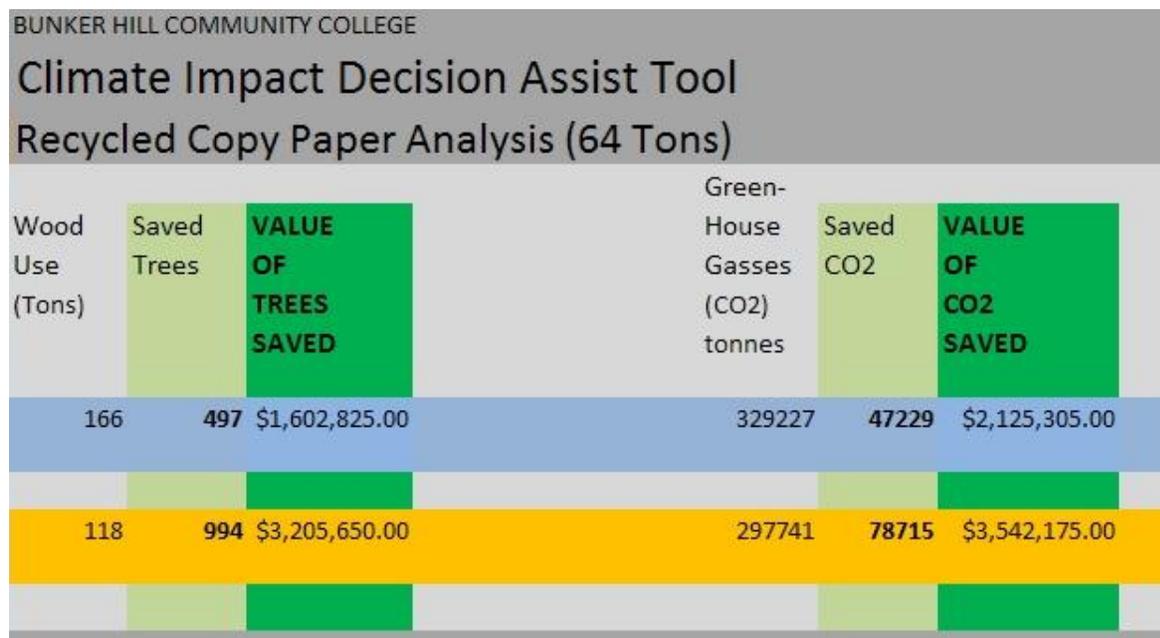


Figure 1: Data extracted from the Climate Impact Decision Assist Tool (CIDAT).

Summary of Savings for Bunker Hill Community College

The total monetary value of all environmental benefits associated with BHCC's decision to purchase 30% recycled copy paper equals \$4,961,904. Please see the attached spreadsheet for additional details on the data and computational methods. The analysis also revealed that the 30% recycled paper alternative actually has a significantly higher benefit/cost ratio compared with the 50% recycled paper option. This was not an expected outcome as we assumed that the 50% recycled paper option would have the greatest overall benefit. But the cost difference for 50% recycled paper (\$28,627) significantly reduced the overall benefit/cost ratio of this option. Ultimately, information about the value of environmental

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impacts influenced BHCC's decision to utilize 30% recycled paper and to incorporate the tool as it is developed into our operating policies and best practices.

By measuring the environmental impacts and incorporating them as part of our institutional decision making processes, BHCC can make more informed choices that are consistent with our pursuit of climate neutrality and sustainability. It is obviously not revolutionary to mandate the purchase of recycled copy paper at a college or business. But it is not yet a common practice to make a value assessment of environmental benefits a requirement for all purchasing decisions, which is what the CIDAT tool strives to accomplish in the long term.

Value of Environmental Impacts

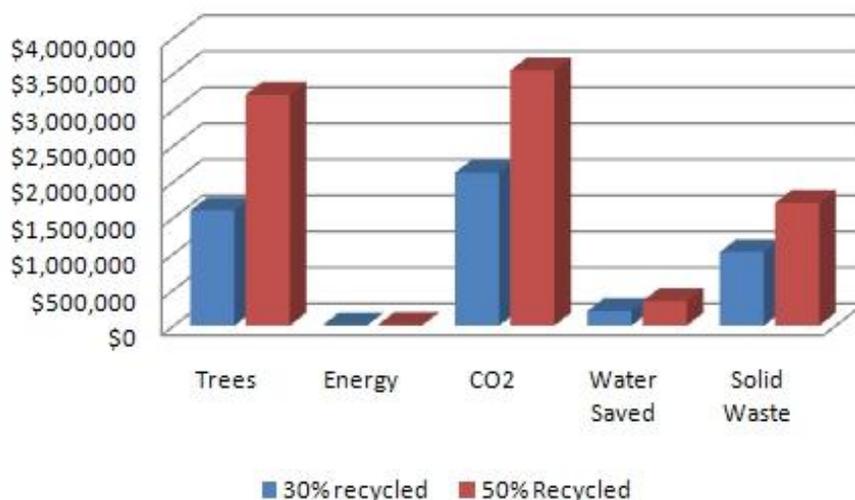


Figure 2: Summary of Monetary Value of Environmental Impacts for 30% and 50% Recycled Copy Paper. Total value of all impacts is \$4,961,904.

Integration within the BHCC Institutional Fabric

In an effort to further refine integrate this decision making approach across the fabric of our institution, the CIDAT Tool was introduced to the faculty from the Liberal Arts and Sciences Division and the Division of Professional Studies as part of the annual Convocation program. As a result, hundreds of faculty and faculty in a variety of disciplines now have the opportunity to evaluate the tool to assess its relevance to existing subject matter, its value as a teaching tool and its ability to engage students in real-world applications of sustainability management best practices. We anticipate that the parallel use of this tool by administration, faculty and staff will help it to evolve beyond its current scope to include additional environmental impact categories, evaluation criteria and product applications.

Unanticipated Applications

During the process of developing this tool, we have also discovered an unanticipated application for CIDAT. BHCC faculty and staff have identified a direct application for the tool within the scope of the College's existing developmental math courses. As a result, the BHCC Mathematics Department chair formally introduced the tool to his faculty with the specific intention of creating sustainability specific

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modules for developmental mathematics courses. CIDAT is a good fit because it can help to explain basic mathematical principles with a real-world application of knowledge. This real-world context engages students that otherwise have no interest in math or those who might struggle to succeed with basic mathematics and statistical principles. As a result of input from faculty, we plan to develop new educational modules for use in several existing developmental mathematics course to be utilized in the fall 2010 and spring 2011 semesters. This unanticipated application of CIDAT tool may be transformative as the topic of engagement in developmental mathematics is a universal challenge for many community colleges.

Future Development Strategy

BHCC will study the efficacy of the CIDAT Tool and refine the embedded calculation methodologies in an effort to improve the accuracy of valuations and to expand applications. Since any decision making process is often a nonlinear, recursive process, we also plan to solicit input from multiple internal and external experts in a variety of fields to incorporate proven decision making strategies such as optimization, satisficing, Maximax and Maximin within the scope of the tool design. Our goal is to embed the valuation of environmental impacts into our institutional decision making policies and to develop a universal tool for other institutes of higher education that face similar challenges with justifying the often higher first costs of sustainability options.

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