

# UW-Whitewater Sustainability



**Tanya Franklin**  
**Sudiyanti Sudiyanti**  
**Kraivit Tungsanga**  
**Emmanuel Akili**  
**Pavel Crha**  
**Tanya Clausius**  
**Gary Otte**

761 Supply Chain Systems  
University of Wisconsin Whitewater  
Professor Sameer Prasad  
Fall 2008

**Table of Contents**

Introduction ..... 2

    What is Sustainability? ..... 3

    Understand the Importance of Supply Chain Management..... 3

        Figure 1. Viewing UWW as a supply chain..... 4

    UWW Campus Going Green..... 4

    Project Goals ..... 6

    Project Sections: ..... 8

Bibliography ..... 9

## Introduction

There is growing awareness in recent years that climate change and resource depletion on a global scale is a reality. There are global consequences of our resource consumption as it affects the state of our air, water, and lands quality and our sustainability on this planet. At the recent conference, sponsored by the Institute for Supply Management, current practices were presented on Sustainability and Social Responsibility for Supply Professionals. Supply professionals were strongly encouraged to drive sustainability into the supply chains of their companies as soon as possible. It was reported that currently, '20% of the world's population uses 80% of the available resources. We will need 5 planets to support 90% of the world's population at the same standard of living. The question is, at what future year will this happen, 20xx?' (ISM Conference: AT Kearney Presentation) There is no doubt our planet's resources are scarce.

The evidence of climate change has been publicized, debated, and ignored for years. But, recent natural disasters combined with exhaustive studies forecasting the depletion of many natural resources within our lifetime has brought urgency to the issue. There is a growing shift in society's mindset taking us from consumers to stewards of our environment. Now that customers are increasing demand for environmentally sound goods and services, all businesses must make the journey to understand and implement social responsibility and sustainability initiatives. This is a new endeavor for most companies, but there is guidance and support available at the governmental, corporate, and industry levels discussed throughout the reports in this project.

## What is Sustainability?

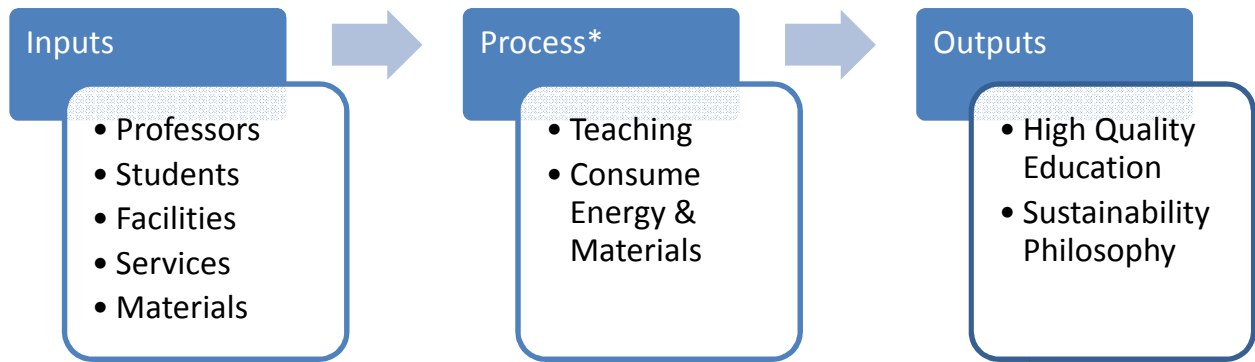
Common ground has been defined by the Institute of Supply Management (ISM) for sustainability, *“The ability to meet current needs without hindering the ability to meet the needs of future generations in terms of economic, environmental and social challenges.”* (ISM) Many leading corporations are adjusting this definition and incorporating sustainability initiatives within their strategic plans. In addition, they realize government regulations are coming and are being proactive. Time will likely prove their efforts will be beneficial socially, environmentally, and financially in securing competitive advantage.

## Understand the Importance of Supply Chain Management

Armed with an understanding of what sustainability is, we must also understand how important good supply chain management will ensure the success of sustainability initiatives and the competitive advantage that follows. ‘A supply chain consists of all parties involved, directly or indirectly, in fulfilling a customer request. The supply chain includes not only the manufacturer and suppliers, but also transporters, warehouses, retailers, and even customers themselves. Within each organization, the supply chain includes all functions involved in receiving and filling a customer request.’ (Chopra & Meindl pg.3) Key drivers that affect the performance of the supply chain are facilities, inventory, transportation, information, sourcing, and pricing.

Let us consider UWW as a supply chain to understand where we are and what we want to achieve with sustainability in mind. UWW is in the business of providing high quality educations for future professionals in society; consuming materials, energy, and other resources in the process. (see Figure 1)

Figure 1. Viewing UWW as a supply chain.



Consider UWW as a consumer of products/services and a producer of professionals with an experience within a low CO2 sustained environment. \* Apply principles of Sustainability & Social Responsibility within a well managed Supply Chain.

What better place is there to incorporate sustainability principles than on our campus and in our students? UWW has a profound impact on student education, of course, but also our suppliers as well as our local and global communities in the supply chain. The clarity and quality of decisions regarding an organization's supply chain, with sustainability built into the drivers, is a complex task and an exercise in continuous quality improvement (CQI) over time.

Sustainability will not be achieved next week! What is needed now is a commitment to pursue sustainability, professionally and personally.

### UWW Campus Going Green

The University of Wisconsin – Whitewater (UWW) made the 'Climate Change Commitment' to preserve resources and prevent waste in their operations. The goals were set to comply with Wisconsin Laws for State Agencies and set targets in accordance with the Wisconsin Act 141 to use 10% renewable energy by 2008 and 20% by 2012. Additionally, UWW is complying with Executive Order 14S achieving LEED Silver status for all new buildings. UWW is not alone in this effort. The University of Wisconsin – Oshkosh has been very successful in

their sustainability initiatives and is an excellent resource for UWW. Oshkosh published their Campus Sustainability Plan for 2008-2012 in February 2008 and is available for review and modeling. (UWO) Many campuses around the country have embarked on this journey as well. The University of Massachusetts Amherst, an excellent source of information, has been reporting their campus' carbon footprint and documenting their sustainability path since 2001. (UMass)

It is critical that UWW as an organization convey the climate change commitment throughout campus management, communicate sustainability goals, and support the 'greening' of the campus. Organizational culture is 'the set of shared values and norms that controls organizational members' interactions with each other and with suppliers, customer, and other people outside the organization.' (Jones pg8) Changing the culture on campus, employees and students, will affect the education provided along with a positive, long term societal effect as the campus becomes increasingly sustainable as well as making students aware that they are environmental stewards as they enter the corporate world.

Climate change and environmental impact is directly tied to the air quality produced by the resources we use. UWW contributes to climate change, positively and negatively, through a number of arenas extensively defined and documented by the Clean Air Cool Planet – Climate Action Toolkit. (CACP) The CACP website and calculation service is endorsed and recommended by the United States Environmental Protection Agency (EPA). It is also the tool recommended by the American College and University Presidents Climate Commitment (ACUPCC). The University's progress on sustainability issues are tracked by the Association for the

Advancement of Sustainability in Higher Education (AASHE). The arenas defined by CACP'S campus calculator to track and calculate the UWW carbon footprint are:

- Energy Arena (Heat & Electric),
- Water Arena (Conserved Use & Storm Water Mngt.),
- Buildings & Grounds Arena(LEED Certification – Innovation Designed),
- Transportation Arena(Fleet, Commuters, Vendors),
- Consumed Materials Arena (Purchase, Use, And Waste Mngt.).

UWW's total carbon footprint, calculated in an aggregated CO<sub>2</sub> number from the CACP calculator spreadsheets, is the bottom line measure of all the arenas combined. 'Net Zero' in each arena is the goal, ultimately. In the meantime, sustainability initiatives will work to reduce, reuse, and recycle resources while using carbon offsets (such as purchased renewable energy to reduce the CO<sub>2</sub> number). With this introductory sustainability knowledge, how will this project help the UW-Whitewater?

## **Project Goals**

The scope of this project is to clarify and guide campus sustainability efforts by exploring elements of the UWW supply chain system. We will review current literature and industry 'best practices' to rationalize sustainability principles and apply them to the Materials Arena for the campus. We hope this project better quantifies sustainability measures and demonstrates how they can then be applied to all the arenas that contribute to UWW's total CO<sub>2</sub> Footprint. We have assembled available purchasing, waste management, and survey data and developed tools that can be used internally by UWW management for sustainability decision support. The

reports are assembled in the sections provided along with electronic versions, presentation power points, and Excel templates/files.

## **Project Sections:**

### **Introduction**

**Section 1:** Sustainability and Social Responsibility Metrics and Performance Criteria

**Section 2:** Forecasting Demand for Campus Materials Based on Survey

**Section 3:** Materials Resource Planning (MRP) with example of Integrated Current Demand Forecast

**Section 4:** Network Mapping for Campus Materials

**Section 5:** Supplier Selection Criteria with Sustainability Metrics Integrated

**Section 6:** Green Transportation and Materials Flow to Waste Management – Forecast and Actual Comparisons.

**Section 7:** Sustainability Costing

### **Conclusion**

## Bibliography

AASHE. (2008, 1 1). *Association for the Advancement of Sustainability in Higher Education*. Retrieved November 10, 2008, from AASHE: <http://www.aashe.org/>

ACUPCC. (2008, 1 1). *American College and University Presidents Climate Commitment*. Retrieved November 10, 2008, from ACUPCC website: <http://www.presidentsclimatecommitment.org/>

CACP. (2008, 1 1). *Clean Air Cool Planet*. Retrieved November 10, 2008, from CACP: <http://www.cleanair-coolplanet.org/toolkit/inv-calculator.php>

Chopra, S., & Meindl, P. (2007). *Supply Chain Management* (Third ed.). Upper Saddle River, New Jersey: Pearson Education, Inc.

EPA-Environmental Protection Agency. (2008, January 1). *US Environmental Protection Agency*. Retrieved September 20, 2008, from Environmentally Preferred Purchasing Hands on Tools: <http://www.epa.gov/opptintr/epp/index.htm>

ISM - Institute for Supply Management. (2008, August 1). *Ethics and Social Responsibility*. Retrieved September 8, 2008, from ISM: <http://www.ism.ws/>

ISM Conference. (November 4-7, 2008). Sustainability and Social Responsibility for Supply Professionals. <http://www.ism.ws/education/content.cfm?ItemNumber=18644&navItemNumber=5580>. Adelphi, MD: ISM.

Jones, G. R. (2007). *Organizational Theory, Design, and Change* (Fifth ed.). Upper Saddle River, New Jersey: Pearson Education, Inc.

UMass Amherst. (2008, January 1). *Greenhouse Gas Emissions*. Retrieved November 25, 2008, from UMassAmherst: <http://www.umass.edu/epac/carbon.htm>

UWO University of Wisconsin - Oshkosh. (2008, April 1). *Sustainability*. Retrieved September 3, 2008, from University of Wisconsin-Oshkosh: <http://www.uwosh.edu/sustainability>