

QUINSIGAMOND COMMUNITY COLLEGE

SUSTAINABILITY PLAN

Date: August 18, 2005

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The Sustainability Plan has been reviewed and approved by Sheila R. Sykes, Vice President of Administrative Services for Quinsigamond Community College on August 18, 2005.

Signature of Agency Head or other Appropriate Designee

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AGENCY DESCRIPTION AND SCOPE

Quinsigamond Community College is a public two-year institution offering numerous associate degrees and certificate programs. The student population is comprised essentially of commuters from the local geographic area. The college serves on average, between 6,000 and 8,000 students and employs approximately 900 employees.

Over 80% of the student body works full or part-time during the school year and many are professionals attending classes in their field before or after work. The campus is also open on Saturday and Sunday for classes and numerous non-college events and activities.

The 54-acre campus is situated in the Greendale area of Worcester, MA. There are a total of eight buildings on campus. The oldest, our Administration Building was built in 1906 with subsequent additions houses the major Administrative offices, some classrooms and a Dental Clinic. This building also has a large vacated space which used to be the library. This space (approximately 40,000 square feet) is in the process of being evaluated for renovation which includes Sustainable Design.

Our newest building, Harrington Learning Center was commissioned in January 2004. It is a state of the art teaching and learning building and was built with an automated energy management system. Furthermore it exhibits a unique architectural design, featuring a considerable amount of glazing. It was constructed using state of the art building finishes, mechanical systems and technology.

Residences are located to the north and south of the campus. An athletic field is located to the north. Route 12 (West Boylston Street) is located to the west followed by a number of businesses.

OCC discharges sanitary waste to the City of Worcester Publicly Owned Treatment Works (POTW) (Upper Blackstone Water Pollution Abatement District). Operations, which discharge to the City of Worcester sewer system, include the operation of a chemistry laboratory, a food service, and portions of the photographic developing operation. Water is supplied by the City of Worcester.

AGENCY IMPACTS ON THE ENVIRONMENT AND HUMAN HEALTH

Quinsigamond Community College provides academic and related support services to more than 6,000 students on a daily basis. In order to provide these services, varying amounts of natural resources is expended and impacts are made to the environment and human health. This institution is eager to reduce these impacts.

- A transportation survey conducted recently revealed that there are 2,787 faculty, staff, and students considered to be commuters. The results also showed that on average 64.7 percent of applicable commuters commute to the campus in a single occupancy vehicle on a daily basis. The college owns a fleet of vans, public safety cars and maintenance trucks that are all gas powered with the exception of four electric vehicles. This results in increased emissions, poor air quality and higher energy usage. Furthermore the campus operates boilers and emergency generators that impact air quality minimally.
- The college also generates waste oil and small quantities of hazardous waste and universal waste such as fluorescent lamps, ballasts etc. The facility also operates two X Ray film developing areas. Wastewater from one of the developing operations is containerized for disposal as hazardous waste; the other is treated and discharged to the City of Worcester sewer system.
- OCC currently has five aboveground storage tanks (AST) and five underground storage tank (UST) systems. Furthermore, the campus operates three diesel powered back up emergency generators.
- Other significant impacts to the Environment and Human Health are significant amounts of paper products consumed on a daily basis, housekeeping cleaning chemicals, lack of a campus wide recycling program and general daily waste of resources – i.e. electricity and water. OCC has one water-cooled chiller and irrigates with city water. The facility uses on average upwards of 4 million KWH per year and 10,000 gallons of water.

QUINSIGAMOND COMMUNITY COLLEGE SUSTAINABILITY TEAM MEMBERS

The members of the Sustainability Team at present include:

1. **Scott Gauthier**, Assistant Director of Facilities/Sustainability Coordinator
2. **Don Hall**, Director of Facilities
3. **Sheila Sykes**, Vice President of Administrative Services
4. **Jeff DeJong**, Working Foreman
5. **Cheryl Oliveiri**, Staff Assistant

This group should meet at least quarterly to coordinate the institution's environmental agenda. It is the intention of this group to be committed and enthusiastic about creating a model of Sustainability. The team will essentially need access to higher levels of decision making in order to be effective. These higher levels should also be open-minded and empower the group to identify all problems and solutions.

LONG TERM GOALS / VISION

It is the intention of this institution to work diligently to:

- Address the environmental and health impacts associated with campus activities
- Incorporate long-range environmental planning into day-to-day operations
- Become more efficient to help reduce to Commonwealth's operating costs
- Incorporate the true environmental and health costs related to the construction, purchase, operation, maintenance, and disposal of buildings, goods, materials, etc. into agency decisions
- Become an environmental model for other businesses to emulate

Our Facilities Department at OCC understands that in order for any Sustainable practices and programs to be successful, it must take the first steps in reinvigorating, reinforcing existing environmental programs such as energy conservation and recycling. We are hopeful to receive enthusiastic participation in creating a "green" campus where the college community begins to see results.

KEY LONG TERM GOAL # 1 – Energy and Water Conservation

Quinsigamond Community College has begun the R.F.P. process with numerous Energy Service Companies (ESCOs). Energy consumption produces some of the most significant environmental impacts associated with campus operations. The campus presently heats the Athletic Center and the Surprenant Building with electricity. This is very costly and all the controls are outdated leading to inefficiency. During the audit process for the whole campus, at least sixteen Energy Conservation Measures (ECM's) was identified that if addressed, would be most beneficial to the college. Some include, lighting system improvements, integrated and new energy management systems, domestic water conservation and possible cogeneration / combined heat and power.

During the interview process by the ESCo's the Facilities Department identified some possible sustainable practices that it hoped would be included in the project. For example, rainwater harvesting could be collected and used for non-potable uses. The captured water could

be used to flush toilets irrigate the landscape and custodial uses, which does not include chemical treatment. The next section of this plan will describe what OCC is doing presently with rainwater harvesting. Renewable Energy technologies are also a topic that will be addressed for our campus. Some choices include: Solar Hot Water Technology to heat the Athletic Center's pool, Biomass Combined Heat and Power and Wind Generation.

Our goal as an institution is to lower and control nitrogen oxide emissions. OCC has good potential for example for wind energy technology. One possible install could be a 10kW wind power turbine that would provide 19,000 kWhs of electricity per year yielding a savings of \$1,862 annually. Not only does this measure save the institution money, it could be used as an educational tool for students as well as a model for surrounding businesses to emulate.

Ultimately, the Energy Service Company chosen will develop, design, and construct energy efficient projects that produce positive cash flow and pay for themselves.

KEY LONG TERM GOAL # 2 – Comprehensive Recycling and Waste Reduction Program

Presently, the college has entered into an agreement with Haley and Aldrich, a firm specializing in environmental management consulting to research and design a recycling and waste reduction program. Essentially, the goal is to improve the institution's environmental performance and public image while lowering costs. As the program becomes further developed, the formulation of a "Green Team" and a kickoff celebration with student involvement would take place. Eventually, the goal would be to get a group of students involved in "Recycle Mania", which is a competition between leading university-recycling programs in the U.S. In a ten-week period, the school with the largest amounts of recycling reported is presented a Recycle Mania trophy. Most of all, it is intended to be a proactive approach to student involvement of waste reduction as well as enjoyment.

Other components of the program include: analysis of existing recycling and trash disposal invoices, meet with cleaning companies, meet with as many staff and faculty, development of recycling and trash disposal system including container design, development of new scopes of services for recycling and trash services, development of educational materials such as desk side recycling guidelines, posters and container stickers. After the program is implemented, its progress would be monitored and data will be tracked monthly. Cardboard, bottle and can

recycling will also be addressed as well as the type of paper products the print shop and the food services departments use. Depending upon the level of success of the program and the feasibility, we may be able to incorporate using food services garbage in a composting process.

The main issue is that trash tonnage and disposal rates have increased as well as the campus square footage. OCC is charged \$1,600.00 per month for 2 dumpsters on campus and \$700.00 per month at our downtown satellite campus with no recycling efforts. Our goal is for each and every one of us on campus to be enthusiastic and committed to recycling to decrease our waste streams.

SHORT TERM ACTIONS AND PRIORITIES

- Environmental Management System (EMS) – The college is in the process of working with a vendor to procure an Environmental Management System to appropriately address many issues. Essentially, the system will be integrated in to the Microsoft Outlook Program to serve as a calendar of testing and inspecting of important items such as the underground storage tank dip sticking or the Veeder Root fuel system. It also, from a policy and procedure standpoint will improve environmental performance, enhance compliance, prevent pollution, conserve resources and enhance the institution's image with the general public, regulators and employees. Our staff will receive training and be more aware of their responsibilities and the importance of them.
- Mercury Reduction Program – Recently the College began its new mercury reduction program in which all lamps, ballasts and batteries are recycled. We are pleased to report that we now manage and transport this lamp waste in an environmentally safe manner. The program, which falls under the institution's Universal Waste Program is intended to comply with Massachusetts regulation 310 CMR 30.1000. It is estimated the College will recycle approximately 1600 lbs of "spent" fluorescent lamps annually. Essentially, this program will also be integrated into the EMS.
- OCC Rideshare Program – OCC complies with both the regulations and spirit of the Massachusetts Rideshare Program. The College has aggressively promoted the use of alternative commuting methods – i.e. carpooling, Worcester Regional Transit, bicycling and walking to our campus to improve overall air quality and reduce energy consumption. The 2004

Rideshare summary survey results indicated that while the campus is not located in downtown Worcester it is still able to achieve a reasonably low drive-alone rate. This is due to our efforts in promoting the use of transit through outreach and sale and subsidy of transit passes. Through ongoing commitment, QCC plans to increase its' efforts, wherever feasible, such as working in cooperation with MassRides on a proposed program that offers cash incentives to those who form new carpools and vanpools, or who utilize transit. Survey results indicate that the college has a low SOCV (single occupancy commuter vehicle) rate of 64.7 percent. QCC continues to be in compliance with the Massachusetts Rideshare Regulation and will continue to take reasonable steps in the future to further reduce its SOCV rate. In 2004, the college offered 43 credit courses and 300 non-credit courses on line. This notion of "distance learning" continues to lower the number of trips to and from the campus substantially. It goes without saying that using our on campus low speed electric vehicles is a "best practice" that the college will continue to support and continue.

- Environmentally Preferable Products – In early 2005, QCC's Facilities Department began to phase out its harsh cleaning chemicals and replacing them with "Green Seal" certified products. Approximately 80% of the campus is cleaned with these EPP's. The college is not only committed to good product performance, but improving conditions for our employees and our occupants. The practice of "micro fiber mopping" as opposed to regular wet mopping is frequently used here on campus. This substantially reduces the amount of chemical compounds used. Another area that we hope to convert to "Green Seal" is our janitorial paper products. A third of the campus' roll hand towels meet "Green Seal" certification. Hopefully, by 2006 our bathroom tissue and multi fold towels will be certified as well. We do utilize high capacity dispensers however currently. Another goal of the college is convert all paper dispensers to touchless to reduce cross-contamination. The college operates vacuums with the "Green Label". These vacuums meet or exceed standards in air quality set forth by the *Carpet and Rug Institute*. The Facilities Department may, in the future only purchase floor buffers that include vacuum attachments that capture fine particles or instead of utilizing the standard carpet extractor, research and utilize new green alternatives that equally perform the cleaning task – conserving water and lowering the amount of chemical applied. We see this thought process fostering a change in the type of products we procure for the College. The hope is to some day see an increased thought process before we purchase the "usual" products

and choose not only building materials made with recycled materials, but the everyday products as well – such as copy paper, recycled mulch, toilet paper and carpeting. We could take it a step further and require that all new products requiring electricity for use have the *Energy Star* label before it is purchased. We will consider whenever possible, to ask all potential bidders to submit proposals on recycled paper, double sided copies and without extra materials.

- Rain Barrel Program/Rain water harvesting – Early in the spring of 2005, the Facilities Department began the practice of harvesting rain water from the roof of a campus building. The water has been used this summer to irrigate many flower planters and beds as well as a pitchers mound. The barrels are made from 100% recycled plastic and have a 55 gallon capacity. Utilizing these barrels has awakened many on campus to a conservation effort that has gone on for years. The college hopes to collect from a one inch rainfall, on a 1200 square foot roof approximately 700 gallons of water. This is water we did not buy from the City of Worcester. Also, as mentioned above the notion of harvesting roof water for non potable use – i.e. flushing toilets is something we are very interested in. As the college gets closer to executing its energy and water conservation project the more information we'll know.
- North Wing Sustainable Design – Presently, the College is collaborating with DCAM and HKT Architects on the renovation of the Administration Building North Wing. The project is in the study/design phase, which includes implementation of a sustainability or "green design" component. Early research and projections by HKT indicate that the North Wing project could achieve a LEED Silver or even possibly a Gold rating under the *United States Green Building Council (USGBC) LEED rating system for New Construction*. The college community is excited to be involved in taking a sustainable approach to this project and look forward to what specific sustainable elements are included. A field trip to Cambridge City Hall Annex took place in June – 2005 where we observed many Green Building design elements such as photovoltaic cells, natural day lighting and a special room to store bicycles inside the building.

AGENCY SUSTAINABILITY WORKPLAN

Sustainable Goal	Benefits	Specific Tasks	Responsible Staff	Timeline
Re-establish a campus wide recycling effort. <i>Pages 6, 7</i>	<ul style="list-style-type: none"> • Solid waste reduction • Cost savings 	<ul style="list-style-type: none"> • Re-energize the recycling program • Educate the College Community • Market the program • Identify potential vendors and award for new waste removal as specified in new scope • Roll out the program 	<ul style="list-style-type: none"> • Scott Gauthier • Sustainability Team • Sustainability Team • Purchasing/Facilities • Sustainability Team 	<ul style="list-style-type: none"> • May, 2005 • May thru September, 2005 • May thru September, 2005 • August – September, • October, 2005
Energy and Water Conservation <i>Pages 5, 6</i>	<ul style="list-style-type: none"> • Reduced environmental impacts • Cost savings 	<ul style="list-style-type: none"> • Award contract to appropriate ESCo • Detailed audit conducted • Identify QCC's key Energy Conservation Measures • Monitor ESCo's performance 	<ul style="list-style-type: none"> • Facilities/Purchasing • ESCo • Facilities/Admin Serv. • DCAM/Facilities 	<ul style="list-style-type: none"> • August, 2005 • September, 2005 • September, 2005 • Sept. 05' to May 2006
Increase carpooling <i>Pages 7, 8</i>	<ul style="list-style-type: none"> • Improved air quality • Reduced energy consumption 	<ul style="list-style-type: none"> • Continue to promote the use of transit/subsidy of transit passes • Further educate the College Community • Expand the "distance learning" alternative 	<ul style="list-style-type: none"> • Student Services • Student services • Academic Affairs 	<ul style="list-style-type: none"> • Ongoing
Complete conversion of Facilities cleaning and paper supplies to "Green Seal" certified/EPP's <i>Pages 8, 9</i>	<ul style="list-style-type: none"> • Reduced environmental impacts • Improved sanitary conditions for occupants 	<ul style="list-style-type: none"> • Convert two thirds of paper products to "Green Seal" • Convert final 20% of cleaning supplies to "Green Seal" • Convert all paper dispensers to touchless • Purchase floor cleaning equipment which includes filters to collect fine particles 	<ul style="list-style-type: none"> • Sustainability Team/Facilities 	<ul style="list-style-type: none"> • September thru December 05' • September thru December 05' • January thru May 2006 • Ongoing
Develop/maintain an Environmental Management System <i>Page 7</i>	<ul style="list-style-type: none"> • Improved environmental performance • Assure compliance with regulatory agencies 	<ul style="list-style-type: none"> • Develop and establish environmental policies/procedures • Conduct internal environmental audits • Establish employee training, awareness and competence 	<ul style="list-style-type: none"> • Scott Gauthier • Scott Gauthier/Facilities • Scott Gauthier 	<ul style="list-style-type: none"> • September thru December 05' • Ongoing • Ongoing
Sustainable Design/Renewable Energy <i>Page 9</i>	<ul style="list-style-type: none"> • Energy/cost savings • Improved environmental and building performance • Raises the bar for all such projects on campus and sets the example in the community 	<ul style="list-style-type: none"> • Complete design phase of North Wing project incorporating Sustainable building elements to achieve at least a LEED silver rating • Investigate other alternative sources of renewable energy, such as solar or wind power possible through Mass. Technology Collaborative 	<ul style="list-style-type: none"> • DCAM/QCC • Sustainability Team/Facilities 	<ul style="list-style-type: none"> • Sept. 05' thru March 06' • Ongoing
Upgrade campus vehicle fleet	<ul style="list-style-type: none"> • Decreased fuel consumption/emissions • Cost savings 	<ul style="list-style-type: none"> • Replace older vehicles with hybrid type • Investigate possible grants or other intelligent methods in obtaining these vehicles 	<ul style="list-style-type: none"> • Admin. Serv./Facilities • Admin. Serv./Facilities 	<ul style="list-style-type: none"> • Ongoing

Management Systems and Institutionalization

A. Integrating Sustainability into QCC's Operations

As stated previously in our Long Term Goals/Vision section, not only is the Facilities Department and Sustainability Team committed to the priorities of this plan, but the entire College Community understands the importance of sustainability and the possibility of unintended environmental consequences as it relates to their jobs.

Therefore every employee, especially those who make critical decisions which can directly effect the environment, should consider the following:

KEY DECISION POINTS

- Will or can this purchasing decision affect energy consumption, future environmental repercussions and future purchasing?
- Before a physical change is made to this part of the facility, has Sustainability been taken into account; how will this affect the environment or the occupants? Have we selected an architect or designer with sustainable design experience?
- While considering this budget, are all Department Heads required, when seeking approval for new goods and services, demonstrate that environmental impacts was considered and minimized?

This thinking is new to many on campus. However, with the ability and perseverance of the Sustainability Team, through the ongoing educational process of QCC employees, the plan can be successful and maintained for the long term. The Facilities Department currently publishes a quarterly newsletter which communicates all Sustainability issues like the recycling program on campus. It is vehicles such as the newsletter that may convince and persuade many to become more cognizant of the potential impacts on the environment and become involved – making suggestions incorporating their experiences relating to planning and operations.

B. Developing a Management System

QCC's management system is still in the development stages. The following chart best describes our institution's goals:

<i>Goal</i>	<i>Responsible Staff</i>	<i>Timeline</i>
<ul style="list-style-type: none">• Redefine the Assistant Director of Facilities job description to address numerous Sustainability issues – i.e. EMS, Recycling Program and Mercury Reduction.	<ul style="list-style-type: none">• Human Resources• Admin. Services	September, 2005 thru January 2006
<ul style="list-style-type: none">• Offer awards and recognition to the department(s) that recycle the most paper, cans and bottles.	<ul style="list-style-type: none">• Sustainability Team	January, 2006
<ul style="list-style-type: none">• Continue and offer more training to staff – i.e. Right to Know Training and correct underground storage tank inspections.	<ul style="list-style-type: none">• Scott Gauthier	January, 2006
<ul style="list-style-type: none">• Continue to provide information – i.e. the Facilities Newsletter and to seek suggestions from staff to strengthen the Management System	<ul style="list-style-type: none">• Scott Gauthier• Sustainability Team	Ongoing