

Mount Allison Water Audit
August 26th to _____, 2013

The Mount Allison University Environmental Policy (#2102) requires that an audit be completed every summer that follows the objectives of at least two of the Environmental Policy's sub policies. This audit followed those of the water sub policy.

Objective

This audit's objective is to help Mount Allison University best manage its water use by researching how, how much and where water is currently consumed and how to reduce this consumption. Data about water use will be collected from interviews, past audits, and information provided by the school such as last year's water budget. It will then be analyzed. Water efficient alternatives and water saving technologies will be researched online and also analyzed. Afterwards, recommendations will be provided to increase water use efficiency in each building and campus-wide.

Process

I was sent a series of spreadsheets listing the amount of water consumed in each university building in every year from 2007-2012. They also list the cost of water consumed and of every water-related appliance or piece of equipment purchased.

I interviewed Perry Eldridge in Facilities Management, about water-related appliances, equipment and technology and trends in water consumption on campus.

For 2008 to 2012, each building's total consumption from the previous year was subtracted from the building's consumption for that year. The difference between each year was then graphed for the academic and non-academic buildings separately.

I also interviewed Bart who is in charge of water procurement about the procurement process and Andrea Ward who manages grounds operations.

Results

Water Procurement

According to Bart, all the water that comes into university system is bought from the town, which bills the university automatically. If there are any problems with the pipes, there would be no way for the university get any money back.

Water Consumption for 2011-2012

Since 2007 and up until 2012 water consumption had been declining.

In 2011, 75,796 gallons of water were consumed. Per square foot, 0.3186 gallon and per person 29.1187. This cost \$167,543.62.

The amount of water consumed in 2012 increased significantly up to 91,164 gallons or per square foot 0.3405 or 34.5842 per person. This cost \$205,041.32. It went up \$37,497.7.

Much of this audit's evidence is organized based on the water sub-policy's objectives.

Ensuring that increasing water efficiency is a considered factor when new buildings and renovations are carried out

According to Perry Eldridge, dual flush toilets low-flow urinals, low-flow showerheads, aerated pressure taps (which consume less water) are placed into every new building and during every new renovation. Also, he reviews the drawings for each new building and tries to see how feasible it would be to include water-saving and rain-water collecting technology. Refrigeration in new buildings will be air-cooled instead of water-cooled.

Using longevity and water efficiency as primary considerations when purchasing water fixtures

Perry says that the Facilities Management's staff always consider a product's reliability and the amount of water it would use before purchasing it. Mechanical consultants also suggest many of the products. If Facilities Management is interested in a product that uses less water, the consultants could offer other suggestions. Plumbers look into the product as well. Nothing that has not already been tested and meets certain standards is purchased.

Waterless urinals were considered. However, because they are somewhat higher maintenance, the custodial staff was not entirely interested.

Installing low flow faucets, shower heads, and toilets to decrease water consumption when feasible

According to Perry, low-flow showerheads and toilets along with aerated taps are used in all the academic buildings and residences. He says that these changes have largely been responsible for the decrease in water consumption from around 2007.

Maximizing the use of recycled rainwater and grey water for new and existing buildings

Rainwater from the roof of the McCain Student Centre drains into a sistern. It is UV-ed for safety purposes and then used in all the toilets in the building. Around, 13,000 litres of rainwater are used per year and, so far, the sistern has never gone dry. If it were to run out, town water would be used.

The Student Centre is the only building that uses rainwater.

There was not enough room in the budget for the new arts centre to include a similar sistern.

Minimizing the use of water for grounds operations as prescribed in [policy 2102.f](#)

According to Andrea Ward, only Park St. Field is routinely watered (3 times a week) using an in-ground irrigation system. Newly planted trees, shrubs and sod are watered for a year. A construction company is responsible for watering new sod, generally using the school's water (construction companies have been using water frequently, this past year). Large trees were moved this past year. They needed to be watered as well.

During the summer, the irrigation system is not activated until it gets dry enough. Until then and during the later, wetter parts of the summer the system is used manually.

When it comes to planting, Zeroscaping, a method that is intended to keep water consumption to a minimum, is used.

This past year sod was applied in several places and several large trees were moved. Consequently, more water was consumed than on average. This past year, a lot of planting was done around the president's house, the Chapel, Crabtree and Bennett house. This would partly explain why these buildings were consuming more water.

The year before, there was a leak in the valve's system and a newly installed controller would not turn off automatically. It had to be turned off manually. Now it can turn off automatically, which Andrea is much more efficient.

Ensuring that the risk of run-off contamination to waterways and the Waterfowl Park is minimized and that the Town of Sackville is aware of the University's water management decisions and practices.

Perry said that there have not been any significant contamination issues. Facilities Management has been putting backflow devices in all water-related systems on campus. If there is any extra money in the budget, they purchase more devices. The devices are in every building but not in all the **mains**. When deciding where to install them, Perry prioritizes any project that he considers most critical with respect to safety.

Recommendations

When feasible, increase the budget for renovations and construction projects in order to allow for rain collecting equipment (such as the sistern in the student centre) to be included in the new or changed building. When the new centre for the arts was constructed there was not enough room in the budget to include a similar device.

Have a separate water meter for Jennings and for Harper. This would make it a lot easier to figure out where problems are happening.

Reconsider waterless urinals. I do not know why they are higher maintenance, so I am not sure what the custodial staff would have to deal with. However, waterless urinals could save a large amount of water.

Consider using grey water (rainwater used outside) on campus. This would greatly reduce the amount of water Grounds Operations would have to use.

For future audits, find the difference between years in water consumption for every building for five or so years. Graph these changes and then check out the buildings that have been consuming an increasingly large amount of water.

Mount Allison Food Audit
August 26th to _____, 2013

The Mount Allison University Environmental Policy (#2102) requires that an audit be completed every summer that follows the objectives of at least two of the Environmental Policy's sub policies. This audit followed those of the food sub policy.

Objective

The goal of this audit is to help Mount Allison University lower its waste, carbon footprint and environmental impact in general (such as impacts on endangered species) as well. This audit will also try to find ways to raise awareness about local food, the environmental impacts of food and waste. Information will come from interviews, statistics about food consumption and waste on campus and online sources.

Process

I interviewed Jennings's supervisor, Brian _____, about the process, quantity and type of food used in the dining hall.

I also interviewed Michelle Strain in Facilities Management.

Results

Continue to explore sources of affordably priced local food grown or produced in the three Maritime Provinces and to maintain its ratio of locally sourced food at a minimum of 40%

According to Brian, about 38-40% of the food served in meal hall is local. Local, in this case, is defined as food produced in the Maritimes provinces. He says that it would be very difficult to get the same quantity of local food all from closer to Sackville.

They learn about the each food's source from their master-supplier, Cysco. Jennings does not plan to increase the percentage of local food purchased beyond 40%. If Aramark were to stop buying from far-off suppliers, these suppliers would not provide Aramark with important products when they really need them such as vegetables in winter.

Michelle had a similar view. She added that during the fall and spring, the amount of local food consumed was far more than 40%. During the winter, the amount decreases significantly below 40%. Dairy is entirely local except for yogurt, which is brought in from Quebec. She added that meal hall does not have a lot of processed food.

Continue to ensure that fish species at risk are not served

The majority of fish purchased are from Green Island (**Which Province?**). In this case, it is fairly easy to know about the fishing process. Almost all of the shrimp, however, come from China. In that case, it is much harder to know about the process and the shrimp collected.

Continue to support the purchase of vegetables grown on campus when feasible

The Mount Allison Farm is no longer running. It had previously supplied Jennings with 4% of its vegetables.

Continue to menu items that are lower on the food chain and to support vegan and vegetarian students with a wide array of choices

Brian estimates that about 22% of meal hall's food is vegetarian or vegan. Although this percentage is not likely to increase or decrease in the next couple years, the percentage of gluten-free food will.

Compost its food waste on-site and use the compost in campus gardens

Michelle discussed the school's composting machines, the Big Hannahs. After dealing with a smell problem, the machines being brought back into full production. At full production, 60,000 kilograms of compost are produced every year. All of this compost has to be used on university land because provincial law requires a license to export or import compost. The compost is used on most of the lawns and fields on campus except for Mcolley, Normany, Landsdowne and the Lower-playing field. These fields require a different fertilizer. Soil testing is performed on all the campus's grounds.

According to Michelle, once the compost has been applied for a few years, its quality will vastly improve.

Previously (before 2012), food waste had been sent to Westmooreland Albert. Workers at the facility, took out recyclable materials and then placed the compost above them.

The Big Hannahs require nitrogen pellets as a source of fuel. Michelle said that they are looking for cardboard shredders that would shred the packaging for Jennings's food. It would produce carbon fuel for the composting machines.

Explore ways to use spent vegetable oil

According to Brian, all the vegetable oil is regularly picked up by a man who takes it and uses it for biofuel.

Continue to use biodegradable service ware in the café operations

All of Aramark's napkins, paper plates, glasses and coffee mugs are biodegradable.

Continue to promote and improve the scraping station to further reduce post-consumer food waste

Brian says that this is the responsibility of the students and that there has been a reduction to a certain degree of the post-consumer food waste at the station.

Continue to support the use of reusable water bottles and mugs

Continue to purchase items in bulk to reduce packaging

According to Brian, about 95-96% of items are purchased in bulk.

Recommendations

Look into ways to get the farm operating again. Also, look for parts of the school's grounds that can be used for growing vegetables, perhaps even using grey water. If students were given the opportunity to work on garden projects, that would raise more interest in local food.

See if it would be at all feasible to raise the amount of local food purchased from 38-40% to about 45 to 50%. For the reasons given in the results section, I recognize why it would be really hard to go beyond that. However, there may be a way to overcome these limitations and just go a little further. I recommend looking into ways that would make this possible. Similarly, although Jennings cannot serve entirely vegetarian meals, it would be possible to increase the amount of food served from around 22% to something a little higher.

If possible, get more clarity about the shrimp imported from China.

The food section of the 2011 audit recommended creating a course on sustainable agriculture. Much of the course would have taken place on the farm, which is no longer an option. However, there would be ways around that problem. Such a course or a course like it (one on food networks and value chains in the maritimes, for example) would raise a lot of awareness of and interest in local food and food consumption issues.

Mark the "food miles" of Jennings' and Gracie's non-local food (and perhaps local food as well) in dining hall. For example, when burgers are served at the home zone, show their food miles right next to their name. Perhaps, also show the carbon footprint equivalent of those miles traveled.