

Sustainability Plan

For a Greener Grafton

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Introduction

Sustainability, or the practice of creating, installing, and perpetuating initiatives that promote a strong environment, is quickly becoming a critical issue within all communities. Efficient use of resources, a proper way to dispose of waste, or the production of environmentally friendly materials can have a significantly positive impact upon businesses, schools, and families. In Grafton, a town of 18,000 in central Massachusetts, we have an excellent example of a municipality that has begun the process of considering its place within the environment. The Sustainability Plan we have created will enable Grafton to continue to expand its eco-friendly work and create an atmosphere of residents who truly want to make their community a better place to live, work, and learn. With the help of our partner, Jim O'Connor, we decided to focus on a few key issues: Recycling, Composting and Green IT, with a guide for facilitating progress in Grafton along with some potential future initiatives. We hope that these ideas will lead to a larger, permanent pursuit of sustainability by Grafton in the future.

Recommended Initiatives

Sustainable Materials Recovery Program

Establishment of Grafton as a regional leader in recycling could offer both financial and environmental benefits. State funding exists to start and support programs in which municipalities make efforts to reduce their overall commercial and residential waste. It is the recommendation of the Clark team that Grafton examine and give serious consideration to these recycling initiatives:

1. Regional Recycling Center
2. Too-good-to-Toss
3. Recycling Coordinator

Recycling Transfer Station

A Regional Center for Recycling and Reuse is a recommended initiative for the town to explore and support. Smaller towns in the region do not have access to recycling programs as robust as Grafton's current arrangement with EL Harvey. Grafton's neighboring towns have programs for recycling that range from residents securing their own hauling services to town run drop off transfer stations. Small towns are not always able to secure generous hauling and disposal contracts when the volume of waste is small or intermittent. The establishment of a regional transfer/drop off station could provide Grafton and surrounding communities an opportunity to band together and jointly negotiate collection contracts with haulers. Furthermore, Grafton could position the Town to charge non-residents for the dumping of recyclable materials and use these funds to offset transportation costs. The central location benefits the haulers with reduced travel

and carbon emissions while Grafton stands to be positioned to directly influence municipal waste collection costs. A Grafton-centered regional site will also provide renting residents a place to drop off recyclable materials.

At this site, reusable materials could additionally be dropped off and upon inspection accepted for a fee. The State will provide a grant for the hiring of a consultant to examine and research the feasibility of a regional procurement center and cost benefit analysis. Once established as a practical endeavor, the Commonwealth will provide up to \$100k in total funding for the project.

Several of Grafton's neighbors have implemented town waste and recycling programs such as Millbury and Sutton. A regional recycling program exists close to Grafton through the Blackstone Valley Regional Recycling Center (BVRRC). Currently, Uxbridge is partnered with Northbridge through Northbridge's branch of BVRRC. Since its inception, Northbridge has put over \$800k back into the town via reduced tonnage and collected fees. The case for lower tonnage costs and higher recycling collections in Grafton is compelling when approached from a business standpoint and could position Grafton for fee revenue and commercial/renter resident collection.

Partnering with neighboring communities could enable residents of Grafton who rent to use transfer stations and reduce Grafton's garbage tonnage as a result. On the other hand, if Grafton established a town transfer station and partnered with other communities for its use, revenue could be generated from out of town non resident use. The most likely initial partner for Grafton is the Town of Sutton. Sutton does not have curbside pickup and instead residents drop off their waste and recycling once weekly at a total annual cost of \$290/year per house hold. Sutton draws

approximately \$130k/year in revenue from its transfer station but due to the rising cost of its hauling contract, operates the station at approximately a \$30k annual deficit. With Grafton's cost savings from its March 2010 EL Harvey hauling contract and collaboration with Sutton, there might be a significant opportunity to approach haulers with terms that include weekly transfer station pickup subsidized by fee collection from non residents. With approval of State grants and proper execution, partnership with neighboring towns could result in little to no expense to the Town annually and lowered annual waste expense through non-resident subsidies. Addendum A provides additional information re: successful Regional Recycling Centers.

Too-good-to-Toss (2G2T)/Permanent use of Green-Up-Grafton Event

2G2T is an effort to further reduce waste tonnage for Grafton. Dropped off items deemed reusable should be kept in a State financed or donated Too-Good-To-Toss garage. Items could be cataloged and organized by use or function. Residents would be able to come by, inspect and take items or drop items off but only if they can meet reusable standards, which staff should establish.

In a PAYT program such as Grafton's, as long as it fits in the PAYT bag, residents will throw out old electronics, appliances, and other items that can be reused. 2G2T has been implemented and been implemented successfully in Massachusetts towns such as Newton. If residents were instead compelled to see if the items they now toss could be reused, finding and using an item that another resident disposed of could be rewarding.

2G2T would open once a month and allow all residents to bring items on that day. Non-residents will pay a fee to drop off/exchange items. A Town representative would inspect the items to ensure that they were reusable and not junk (i.e. plug in electronics to verify working condition, etc). Once a resident exchanges an item, they can browse the selection of previously dropped off items at no cost. And, one does not need to drop off an item to stop buy and shop. Non-residents however, would pay a small fee to pick an item from the selection. GreenerGrafton.com would provide an inventory of items so if a resident is looking for something specific, they might be able to find it easily. This is currently a system underway in Newton. After 6 months, if an item is not taken, the Town could list the item on an online auction site such as EBay as a source of additional revenue. At the same time, for items that were not taken, generated revenue could be used to dispose of the items in the appropriate manner. Addendum A provides a link to resources for reusable item exchanges.

Residents might need encouragement to use 2G2T to exchange items, as it is sometimes easier to just "throw it out". Grafton would be able to address this barrier to use by partnering with nationally based retailers that are in a position to compensate residents to drop off items. Wal-Mart has a track record of providing residents of towns with 2G2T programs with a \$10-\$20 gift card for use in its stores when items are dropped off. Blackstone MA, recently partnered with Wal-Mart to encourage residents to bring down white goods to its regional recycling center in exchange for gift cards. Revenues there have gone to fund town scholarship programs and other community initiatives. The program could be initially piloted for interest on message boards at GreenerGrafton.com and discussed at Town meetings prior to broad scale implementation.

Recycling Coordinator

In order for Grafton to dedicate the time and attention needed to launch its sustainable materials program, it is advised that the State be petitioned for the funding of part time employment of a Recycling Coordinator. MADEP will provide funding for a \$25k/year salary as well as additional benefits.

The Recycling Coordinator (RC) will ensure - if it is not already required - mandatory waste recycling by all commercial operations and residences. The RC's role will primarily focus on enforcement of the recycling statutes to ensure compliance with laws and reporting to government agencies on the ongoing success of the program. Furthermore, the RC can dedicate efforts to the implementation of the additional recommendations included in this plan as well as provide education to businesses, residences and local schools on the benefits of recycling.

The Town will have an opportunity to gauge success by setting wasted tonnage reduction goals to reduce hauling costs on non-recyclables. There is nothing in State grant materials that states that Grafton cannot additionally compensate an RC. As a result, the Town is in a position to reward the RC with a variable compensation benefit in addition to the state salary if the RC is able to exceed performance targets established by the Town. The RC will also be responsible for the completion and submission of additional state grant applications, with support from applicable Town departments. Addendum B provides a recommended job description for the Recycling Coordinator.

“Green” Lawn Initiative for Carbon Reduction and Water Conservation

Residents often like a nice green lawn. It is not often however, that people consider the environmental and cost impact of their lawn maintenance as well as the cost savings they might be missing by changing a few key behaviors when it comes to home landscaping. By following the steps listed below, Grafton’s homeowners can have the green thumb they desire with minimal environmental impact and maximum cost savings.

- Get all mowers annually maintained and tuned up for optimal fuel efficiency
- Sharpen blades twice annually to prevent grass blade tearing and browning
- Cut lawn on either of the highest 2 settings for mower height, allowing for roots to grow deeper and as result require less water over course of summer
- Grafton Partnership with Sears for negotiated mower maintenance

Composting Development

Initiatives:

1. Compost site
2. Curb-side pickup

A **Composting site** would allow Town residents to bring their yard waste and food waste to one location and drop it off. The location could be a local farm or garden, so that they can maintain the compost and then use it when necessary. The problem with this approach, however, is that residents are less likely to contribute to the program because they must bring their organic material to the site, rather than have it picked up. An excellent example of a successful composting site is Amherst, NY. While Amherst is a much larger town than Grafton (around

117,000 residents) the savings they have realized from composting are quite impressive. In 2008 alone, Amherst generated \$261,562 from the composting site. In the 17 years of operation, they have avoided \$24,958,419 in landfill costs, and have had a total net benefit of \$22,790,254. That equals net benefits of about \$1.3 million per year. Although Grafton is on a much smaller scale, the relative impact would be just as substantial. An important element of this initiative is that the school system composts their food waste. Since the school system has such a high cost for waste, eliminating compostable waste from their waste stream would save the town a significant amount. In order to do this, food waste specific bins must be in place throughout the school and in the cafeteria along with proper education of the staff, teachers and students. See addendum C for details re: the Amherst, NY Composting Center.

Where will the compost go? The community garden would be the best option for a compost location in Grafton since it is run and owned by the Town. Those who use the community garden will be more than glad to use the finished product on their plots, while Perreault Nurseries has expressed interest in using compost as well. We believe that no more than a half-acre of land would need to be reserved for the purpose.

Curb-side pick up: For further reduction of non-recyclable waste tonnage, Grafton is encouraged to pursue a 3 stream sorting approach that includes organic collection to establish a Zero Waste initiative. The active collection of organic materials separated from general commercial and home waste will enable Grafton to do its part to reduce landfill methane emissions and save on hauling costs with reduced tonnage on general waste. The Commonwealth will provide grants of \$20/household to pay for the purchase of wheeled organic collection carts which could be collected by hauling or used by residents to help establish their own home composting program. A

pilot and study must be started prior in order to verify cost benefit and tonnage reduction. The ultimate benefit could be through the reduction of PAYT fees to residences and businesses. Two Massachusetts towns that have successfully entered a composting program together; i.e., Hamilton and Wenham. The towns started a pilot program with roughly 70 households. These households were given free curbside bins and paid a fee for the program. The program was so successful that the towns then decided to implement the program. Through a study done by Hamilton and Wenham, they found that the average household produced 27 lbs of trash per week (with a PAYT program) and of that 27 lbs, 12.5 pounds were compostable material. Given this number, a composting program in Grafton could save residents a significant amount of money in the cost of PAYT bags.

In order to achieve a significant reduction in tonnage, it is recommended that Grafton implement a curb-side composting program. This program should be voluntary, and include payment for composting bins as well as a yearly fee for pickup. To incentivize this program, the first 500 residents (this number can be adjusted) should be offered free bins, or a free year of pickup. In the case of Hamilton and Wenham, they have received very strong and sustained support from the community; 500 to 600 residents have signed up since the program was implemented in April 2010.

Green IT

Information Technology (IT) systems are essential to any working, administrative, or educational environment. The use of computers for both information storage and correspondence is crucial and will only increase in importance in the future. As a result, successful green IT initiatives must not sacrifice performance for sustainability. However, addressing energy usage and environmental concerns through IT can benefit the bottom line of any organization. Green IT initiatives not only reduce energy consumption and costs, but also create a stronger and more efficient workspace.

Initiatives:

1. Current Situation
 2. Workplace Management
 3. Systems Management
 4. Change Management
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Current Situation in Grafton

Progress towards Virtualization: As reported by Peter Carlson of the IT committee, design and testing for virtualization has already been completed. The major problem is funding; the project would require an upfront cost of \$220,000. However, after testing the team found that virtualization could save the Grafton administration building about \$510,000 over a period of 5 years – an investment return of 132%. This would result from energy costs reduction, maintenance, replacements, installation work, liability, and wages that would decrease as a result of this initiative.

Centralized multifunction machines: Consolidation from individual printers to an enterprise printing system could reduce the amount of machines, including inkjet and laser printers that cost 30 and 20 cents per page respectively, in favor of a few, more efficient duplex copier-style printers that cost approximately .06 cents per page.

Many green IT ideas are designed to lower energy costs through a client's use of the machine, rather than through the actual hardware. Of the energy used by firms on IT, 55% comes from outside of the data center. This allows for a very straightforward way to reduce cost without repairing or replacing equipment. In this case, these simple everyday processes can serve as an individual's personal effort to consume less energy. Hopefully these actions can become enough of a routine to where they would translate to energy efficient practices at home, saving families money in the process.

Assign all Grafton laptops/desktops to power management/energy efficiency settings:

Desktop computers, which are most likely to be left on for long periods of time, use about .12 kWh when active; laptop computers use less, around .05 kWh. However, "sleeping" machines use as little as .01 kWh, a significant decrease. The average price for electricity in Massachusetts is around 15¢/kWh. Switching computers to energy settings that put a computer in sleep mode after 10 or 15 minutes of inactivity can save a significant amount.

Smart power strips save energy in a variety of ways: they cut "phantom draw", which is a term for electronics that use power despite being off; they cut energy allowance to outlets with low energy demand; and they provide surge protection, crucial for any environment where voltage spikes could be costly. These power strips are around \$25-50, comparable to regular alternatives, and essentially pay for themselves within one year.

Power down computer equipment: Turning off monitors when not in use, and turning off machines at the end of the workday, is a simple way to reduce energy consumption.

Employees often think of their workspace as their domain; to goal is to make each individual feel responsible so that these actions become routine.

Stop the vampires! Users that unplug their Blackberry, laptop or other chargeable electronics when they are fully charged not only save energy; they also prolong the life and capability of the appliance's battery. Brookline High School, among other schools that promote sustainability to their students, uses the term "vampire" because the appliances "suck" extra energy from the walls; it is a unique and easy term to remember. This is another initiative that could easily be translated to the home environme

Reducing the amount of ink, paper or energy used up by printing in an office or school is a simple and straightforward way to reduce cost.

Expand the use of a centralized multifunction arrangement, and continue to encourage employees to remove individual printers: As stated above, this has allowed the Grafton administration building to save a significant amount of money. Educate hesitant employees on the pitfalls on individual printers (the machines may be inexpensive, but the ink is very expensive and require regular maintenance).

Timed switches: Would shut printers off automatically at the end of the workday, saving energy and money. Printers do not use as much energy as computers do, but timers are very easy to obtain and simple to use.

These options would be much more difficult to implement immediately from a financial and time standpoint, yet could be potential options to discuss in the future.

Future purchases: Clearly, it would be unwise to replace all hardware at once, particularly because few organizations have the ability to pay for everything upfront. The Grafton IT department has \$14,000 to replace its PCs; for a building with 61 computers, replacing

them all at once without the benefits of virtualization would be impossible. Energy efficient replacements should be explored, however.

LCD monitors, for instance, are too expensive to purchase alone and should replace CRT monitors when entire setups (monitor/computer) are replaced. LCD monitors use a quarter of the energy of a CRT monitor, a savings of \$20/yr per monitor.

Netbooks allow for the portability and communication ability of a laptop, but with a significantly smaller profile, at a lower price. Operating systems and software specifically designed for these types of machines help to provide similar capabilities with less of a need for power. We simply do not use all of the capabilities that we pay for in computers these days; netbooks use a sustainable, “take what you need” approach. The majority of netbooks use an Ubuntu operating system like Linux rather than Windows; when the Grafton IT department is virtualized, these computers will be able to be used as any other machine on the network.

Follow-me printing: The primary reason that paper is one of the most wasted resources within an office or school environment is because we do not know where the printing is taking place. Computer users who print documents often do not feel accountable for what they print, and this can result in multiple unwanted copies, or the user may not realize they do not need a document until it has already printed. If users are forced to reconfirm their print jobs at the print station, they can eliminate potential printing mistakes and reduce waste.

This process could easily be implemented at the new Grafton High School. Students can use their I.D. cards at a printing station and have a virtual amount of “dollars” placed on it. A potential number is \$20 per semester, 10 cents per page (20 cents single sided). Again, this

is not real money, just a way of informing both the user and administrator of the quota and amount of usage. Once a student's quota has run out, they must talk to the registrar and potentially be charged for printing thereafter. This would eliminate a large amount of wasteful printing; students would think twice before printing something that they might immediately throw in the trash.

Because users would have to swipe their I.D. cards at printing stations to receive their documents, the printing administrator would be able to:

- Know where every document is being printed, thus discovering print problems more quickly and maintaining printers more properly;
- Allow only certain people to print a certain amount of pages per print job or to print at certain machines;
- Route print jobs with high amounts of pages to more durable, more efficient printers, saving money and avoiding potential repairs;
- Decrease the amount printed, and the amount of money dedicated to printer upkeep and maintenance.

Pharos (www.pharos.com) is a firm that specializes in print management solutions, and has installed successful print optimization services for Clark University and multiple other New England universities. The company also offers corporate plans that could be suggested to larger local firms such as Wyman-Gordon.

Systems management, space management, and energy management often go hand in hand when it comes to IT. Server consolidation and virtualization could result in improvements in each of these areas. Server virtualization clearly decreases the cost of physical servers, but it also

decreases maintenance costs (because configuration can be done virtually instead of physically) and frees up storage space for other IT endeavors (as most data centers are located in tight or inconvenient spaces, this can be key).

Consider including funding for virtualization and server replacement in the Grafton town

budget: A return of \$510,000 over 5 years on an initial investment of \$220,000 is excellent.

Even if the investment could only be secured over a couple of years, the Information Technology committee could implement a program to replace one server at a time or virtualize only a certain percentage of desktops per year. It is essential that the Town upgrade its infrastructure before it will be able to fully implement any future software or ideas.

Full virtualization, of course, would be the optimal goal for the administration building. The savings provided by virtualization is encouraging, but we are more eager to relieve the IT committee of its management role and instead place them in a proactive one where they have the freedom to explore new and efficient ways to leverage technology.

Raise the current data center temperature: In 2008, The American Society for Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) expanded the recommended data center temperature range; while many data centers maintain a temperature of 72 degrees Fahrenheit, it is now considered safe to operate servers anywhere from 68 to 80.6 degrees. Moving the data center temperature up 1 degree saves about 3% on cooling costs. An elevation of 5 degrees up to 77 degrees, for instance, would save about 15%.

There are four general drivers to any Green IT change management: cost optimization, regulation compliance, energy costs, and reputation. It is important that IT users realize the immediate

effects that simpler desktop environment initiatives can have on energy and maintenance costs. These steps introduce the user to new initiatives and offer daily and weekly cues to help users make these “low-hanging fruit” initiatives part of their daily routines:

Introduction to Green IT: It is recommended that the Greener Grafton Committee host a get-together in the fall of 2010 to educate Grafton staff and local businesses about the pros of introducing green IT initiatives into their respective environments. The Grafton staff will be informed about initiatives that they themselves will be participating in (within the desktop environment) as well as those that the IT committee will be working on (within the systems environment). Businesses will be encouraged to adopt the “low-hanging fruit” initiatives presented; they will also have access to those who have successfully introduced green IT ideas to their working environment.

Email updates and desktop reminders: We cannot expect everyone to adopt a new initiative instantly. The computer desktop is often a mandated background; we can easily install a small box on the desktops with a reminder to power down when not in use. It would be the last thing that users see before logging out, as all application windows are usually closed. Another way to reach users would be through email; while nobody likes junk email reminders, perhaps information could be communicated weekly indicating energy usage for each department.

Facilitating Progress

Initiatives:

1. Greener Grafton Committee
 2. Media Utilization
 3. Youth Engagement
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Greener Grafton Committee

Grafton currently has an Energy Committee comprised of a handful of volunteers. There is an evident need for more cohesive community involvement to facilitate a change towards sustainability in Grafton. Expanding the current committee to include all things Green, making it an official group by Selectmen vote, and expanding membership to Grafton's key stakeholders such as business operating in the town will be an essential step towards complete community involvement in the sustainability of Grafton. After expansion of the committee membership, it is recommended that the Grafton Selectmen vote to officially establish the Energy Committee and designate the members to serve on the committee for a 1 year term.

In order to engage an entire community to foster sustainable behaviors, the new committee's membership must span the community more broadly than its current membership. Examples of possible additional members of Grafton's Greener Grafton Committee are larger commercial businesses in the area, such as Wyman Gordon and Aggregate. Larger corporations such as these have created or begun to create departments dedicated to sustainable operations with respect to financial performance, all stakeholders, and the environment.

While larger corporations are important centers of influence to a community, it would be equally important to include small business owners in a town with a population of 18,000. Grafton's many small businesses serve the Grafton public and have been doing so for many years. These small businesses, such as the local ice cream stand, restaurants, nurseries, and diners know their customers and neighbors on a personal level not seen in a large city. Enlisting the participation of these business owners in Greener Grafton Committee meetings and events will be crucial to communicating any message that needs to reach the entire population. Additionally, it offers a platform for key stakeholders to offer ideas, experiences and best practices.

With the inclusion of small businesses and larger companies, Grafton's Chamber of Commerce will be another valuable source for the town to turn to for the purpose of added resources and an additional communication venue. Special interest groups such as The Lions Club, VFW, and the local Boy and Girl Scout troops can also be valuable vehicles to involve the community through word of mouth and events.

Media Utilization

With expanded membership of the Greener Grafton Committee and Grafton's business involvement, marketing the message of Sustainability to Grafton's residential community can begin. Town media such as the website, local newspaper and the Grafton television channel should be used to communicate all things green and sustainable. These communications would be the sole responsibility of the Greener Grafton Committee.

Grafton's web based communication with respect to green initiatives must certainly continue with some key changes. While availability from Grafton's official site is important, the website will need to be more interactive for the entire community. This can be accomplished

through the current site or the Greener Grafton Committee may choose to construct an additional website dedicated to all things green (GreenerGrafton.com). Whichever option is chosen, the website will need to have a forum where all community members can ask questions and offer ideas and best practices towards sustainable living. This forum can also serve as a place for community members to share successes, such as energy savings yielded from switching to a compact fluorescent light bulb. A “Tips and Tricks” page can highlight the best ideas. Examples include shutting off the computer when not in use to save energy and prolong your computer’s life, and cutting your lawn one setting higher to give soil more shade, thus necessitating less watering. Maintaining website inquiries will be the responsibility of the Greener Grafton Committee, although full community involvement will likely result in inquiries answered by other community users.

It will be equally important for the Greener Grafton Committee to be progressive about holding events and information sessions. The latter can be best scheduled for after PTA and other Town meetings. Keep information sessions short and offer e-mail communications. In preparation of and immediately after, these events and meetings should be displayed in numerous forums. First, they should be visible in Grafton’s newspaper and on Grafton’s local television channel. The most important thing here is to promote the message and show the whole Town what Grafton is doing and results being achieved.

Youth Engagement

Another key resource for communicating the message of Sustainability is tapping into Grafton's youth. It is safe to say that, in today's technological world, the youth of Grafton has a much larger social circle than that of its adult population. For this reason alone the youth of Grafton is a very important venue for communicating a message. This is an opportunity to get students involved in their town and be exposed to an idea that has become a critical aspect of modern business. Sustainability will be considered a constant by the time the student population of Grafton are professionals and the concept will likely be covered in core college courses. An additional benefit to students, with respect to college, is that community service is now expected as a requirement for admission to every top tier institution. Students that participate in green projects, or implement their own will be ahead of the curve when it comes to college applications and job applications. National Honor Society students can also receive community service hours, which they need for graduation, for projects they work on.

Convincing Grafton's youth may be challenging but there are ways to make anything fun. A recycling program in Marlboro, MA has engaged schools to compete against each other in their recycling efforts and it has significantly reduced waste in their school system. The Greener Grafton Committee could draw upon the School Committee and teachers for fun ideas to get students involved. Not only will this bring forward creative ideas, it will also engage teachers, thus reaching another important group of Grafton. During this time it may be essential for a student organization to emerge and with the assistance of the Greener Grafton Committee and school system tackle projects that involve greening their school and their community.

Grafton's high school has been progressive in terms of implementing a recycling program, but they need help. With the Greener Grafton Committee collaborating with the School

Committee to make this system more beneficial to the students, it will thrive. As mentioned previously, marketing the Sustainability message is very important. It is even more important at the high school level. While classroom recycling bins are valuable, they are not close enough to the waste source. Posters and bins need to be specifically, and with purpose, visibly located where trash bins are fullest. These locations are next to vending machines, in the gym, in every common area, and at every athletic game.

Sporting events bring a vast amount of the community together. It only makes sense to incorporate what the school is trying to implement for its students to its whole community. The high school is also a site for other Town related events.

In order to fully accomplish this idea of recycling at the high school, it needs to be made fun for students and parents alike. One idea to hold high school “visitors” responsible is “Push Ups for Plastics.” Make it known at athletic games that a plastic bottle thrown in the trash means 5 push-ups for the offender. Certainly this does not have to be implemented, but it is an example of a fun idea to bring engagement. Whatever the method, the idea is to laugh and have a good time with it.

Grants and Funding Sources

The initiatives listed above will require time, willingness, knowledge and above all funding. The Commonwealth of Massachusetts through the Department of Environmental Protection (MADEP) is in a unique position to grant funding to eligible municipalities wishing to establish cost savings through sustainable practices. Eligibility requirements, grant sizes, applications and information about the submission process and dates can be found on the MADEP website referenced below.

MADEP Grant Info and Applications

<http://www.mass.gov/dep/recycle/recawgr.htm>

Performance Metrics and Reporting

Initiative	Goal	Actual Performance	Comments
<p>Sustainable Materials Recovery</p>	<p>Investigate the creation and institution of a more sustainable solid waste management program.</p>	<p>Hire a Recycling Coordinator by the Greener Grafton Committee. Increase involvement awareness of Grafton citizens through 2G2T and Green-for-Grafton. Establish connections with regional towns that have successful solid waste management systems. The Greener Grafton committee takes information from regional partners and creates initiatives specifically for the town of Grafton.</p>	
<p>Composting</p>	<p>Decrease the amount of tonnage going to the landfill and redirect it into compost. 5% reduction by the end of 2012 and a 15% reduction by 2015.</p>	<ol style="list-style-type: none"> 1. Educate Grafton residents about the benefits of composting. 2. Establish a communal compost site for residents. 3. Create connections with local nurseries. 4. Measure performance through growth (in cubic feet or tonnage) of site, amount of users, frequency of use. 	

Green IT	Reduce energy consumption by IT users in the Grafton administration building by 5% within the next year, and 10% within the next three.	<ol style="list-style-type: none"> 1. "Introduction to Green IT" workshop, daily desktop reminders, weekly energy consumption updates. 2. Users begin to make initiatives routine in the workplace. 3. Users introduce initiatives into their own homes. 4. Users measure performance through individual energy bills. 	
Greener Grafton Committee	Officially construct committee working towards all Sustainable operations in order to envelope Grafton's population with sustainable behaviors.	<ol style="list-style-type: none"> 1. Committee has met and distributing Sustainable knowledge to constituency. 2. Community begins to come to committee with projects 3. Community actively participating in Sustainable behaviors. 	The Committee will ultimately be the catalyst to a Greener Grafton. Following these steps will lead the way.

We recommend that the committee organize these performance metrics based on their importance for Grafton. These performance metrics should be considered in the Greener Grafton Committee's quarterly reports on the progress of the sustainability plan, to be presented to the Board of Selectmen.

Roadmap

Below is provided a recommended set of actions and timetable for the Town of Grafton to enable implementation of this Sustainability Plan:

Initiatives:

1. Sustainable Materials Recovery Program
 - Regional Recycling Center
 - Too-good-to-Toss
 - Recycling Coordinator
 2. Compost Development
 - Composting Site
 - Curb-side Pickup
 3. Green IT
 4. Facilitating Progress
 - Greener Grafton Committee
 - Media Utilization
 - Youth Engagement
-

Sustainable Materials Recovery Program

1. Recycling Coordinator

- December 2010: The Recycling Committee must review and build upon the provided position, adding any other requirements and standards that they deem necessary.
- April/May 2011: The state provides free workshops for these types of grant applications. The committee needs to nominate a representative to attend one of these workshops in order to fully understand the application and educate others on the initiative.
- By June 2nd, 2011, the grant application (found in addendum D) must be completed and sent to the state for processing.
- Summer 2011: receive feedback and approval from the state of Massachusetts regarding grant application status. The state does not provide a specific date for applicant response.

- Fall 2011: Publicize the position and start processing applications.
- January 2012: Recycling Coordinator position is officially filled.

2. Regional Recycling Center

- By December 2010, make a final decision on a location of 1 acre for future construction.
- By December 2010, reach out to surrounding towns (Uxbridge, Northbridge, Upton, Sutton, Millbury) to gain information and engage their interest in partnering on a possible regional recycling initiative.
- April/May 2011: Nominate a representative from the committee to attend a free workshop provided by the state regarding this kind of application. This representative must then convey the information to others involved with the process.
- By June 2nd, 2011, complete the Massachusetts state grant application for a feasibility study concerning regional recycling.
- Summer 2011: Response to this application from the state will vary. Once it is accepted, the town must hire a consultant and begin the feasibility study.
- By December 2011, the data from the feasibility study is compiled.
- 2012: Once the feasibility study is completed and the project is deemed viable, the design and construction grant will automatically be approved. Construction will be completed within the end of the year.
- Spring 2013: Regional Recycling Center opens.

3. Too-good-to-Toss

- By December 2010, establish a location for a Too-good-to-Toss center. Recommended site would be the same setting as the Regional Recycling Center.
- 2012: Draw upon existing community resources to construct a facility. This should be constructed at the same time as the Regional Recycling Center in order to make both processes more efficient.
- Spring 2013: Too-good-to-Toss center opens.

Compost Development

1. Composting Site

- December 2010: Determine an area of ½ acre for future site. Team recommends using already-established community garden as a potential locale.
- By Spring 2011, construct composting receptacles using existing community resources.
- Spring 2011: Determine volunteers to help manage compost (i.e. turning the materials).
- Summer 2011: Composting site opens.

2. Curb-side Pickup

- By December 2010, reach out to E.L. Harvey to discuss potential programs that they may offer regarding collection of organic materials.
- December 2010: Put out bids to other hauling contractors or firms that offer organic material collection.

- December 2010: Research businesses or other firms that are willing to buy compost. The team recommends talking to local nurseries that use organic material for their business and are willing to take compost on-site.
- Spring 2011: Promote composting bins to all Grafton residents (homeowners and non-homeowners) who aren't currently using the containers.
- By summer 2011, launch the curb-side pickup initiative.

Green IT

- Effective immediately, all computers within the Grafton administration building must be assigned to power management settings that put the computer to sleep within 15 minutes of inactivity.
- Effective immediately, modify desktop settings on all Grafton administrative computers to include a reminder to shut down the computer at the end of the day.
- Effective immediately, install timed switches on printer outlets to shut down from 6:00PM to 6:00AM.
- Fall 2010: Hold an "Introduction to Green IT" meeting for Grafton staff and local businesses, explaining the positives that can result from green IT initiatives and giving them examples of "low-hanging" initiatives for introduction into their own buildings.
- December 2010: Begin the process of replacing outdated power strips with smart power strips.
- Virtualization must be considered as part of Grafton's budget for the 2011 fiscal year.
- Within the next two years, begin to replace outdated laptops with netbooks and CRT monitors with LCD monitors.

- During construction of new school, consider implementing a follow-me printing system such as Pharos Print Optimization Services.

Facilitating Progress

1. Greener Grafton Committee

- Summer 2010: Incorporate all relevant sustainability issues, interests and groups into one unified board called the “Greener Grafton Committee”. Complete all processes required to make this a sanctioned board.
- September 2010: First official meeting of the Greener Grafton Committee.
- Fall 2010: Launch commercial outreach. Talk to the small businesses, corporations, and other community organizations (such as Lions’ Club, VFW, Boy Scouts/Girl Scouts) of Grafton, share the sustainability plan, and get information on initiatives that they would be interested in pursuing with the town.

2. Media Utilization

- September 2010: In conjunction with first official Greener Grafton Committee meeting, invite local newspaper representative to effectively communicate the message to citizens.
- Fall 2010: Align green awareness with events related to Grafton’s 275th anniversary. Make sure that the Greener Grafton Committee is properly represented and citizens are educated about future initiatives.
- Fall/Winter 2010: The committee, through its collaboration of information, will determine what issues they can effectively tackle. These issues should be the ones presented on the GreenerGrafton.com website.

- December 2010: Launch GreenerGrafton.com website.
- Spring 2011: Promote GreenerGrafton.com. This can consist of a scrolling ad on the local TV channel or an ad in the local paper; a \$1 Greener Grafton bumper sticker drive; and word-of-mouth through the Grafton school system. By this time, the businesses who are involved with the Greener Grafton initiative will also be another source of promotion.

3. Youth Engagement

- Fall 2010: With the help of the committee, align outreach efforts with educators and youth community leaders to create entertaining ways to involve Grafton's youth in the sustainability initiative.
 - January 2011: Have the Greener Grafton Committee partner with Grafton High School in order to create a student organization committed to sustainability. Help students to construct projects that actively involve students in their community. These can be resume-building projects that educate high school students on green action; furthermore, they help students understand how to deal with local government.
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Addenda

Addendum A: Examples of Regional Recycling Centers

Northbridge Transfer Station Revenue Success: http://www.graftontimes.com/Articles-c-2009-07-29-54020.113122_Northbridge_saving_green_by_going_green.html

Town of Sutton Transfer Station

http://www.suttonma.org/Pages/SuttonMA_Transfer/index

Newton MA Reusable Items Exchange:

<http://www.wastenotnewton.com/exchange/index.php>

Addendum B: Recommended Job Description for Recycling Coordinator

Job Description:

- Establish baseline residential recycling participation data for two hauler collection routes
 - Develop an enforcement protocol
 - Conduct education about the enforcement initiative
 - Monitor collection routes, record non-compliant addresses, and distribute enforcement notices
 - Compile data monthly and report quarterly results of the enforcement initiative to MassDEP
 - Conduct a cost-benefit analysis to determine the enforcement program's impact on trash and recycling tonnage
 - Educate residents and commercial operations
 - Pursue state grant programs that provide cost savings to Grafton
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Addendum C: Amherst, NY Composting Center and Best Practices

The publicly owned Amherst, NY compost facility is composed of about 85,000 cubic yards of compostable waste. The city pushed for a compost site because of rising landfill disposal costs, and because of a desire to jumpstart progress towards an environmentally sound solid waste management initiative. Centrally located on 10 acres, the compost site collects about 25,000 tons of organic waste per year for a community of 117,000 residents.

Six full-time and two part-time employees maintain the compost site: a manager and a foreman, two equipment operators, two laborers, and two part-time seasonal employees.

Since opening, in 1991, Amherst has received 50% matching funds from the New York State Municipal Waste Reduction & Recycling grant program for any new equipment purchases.

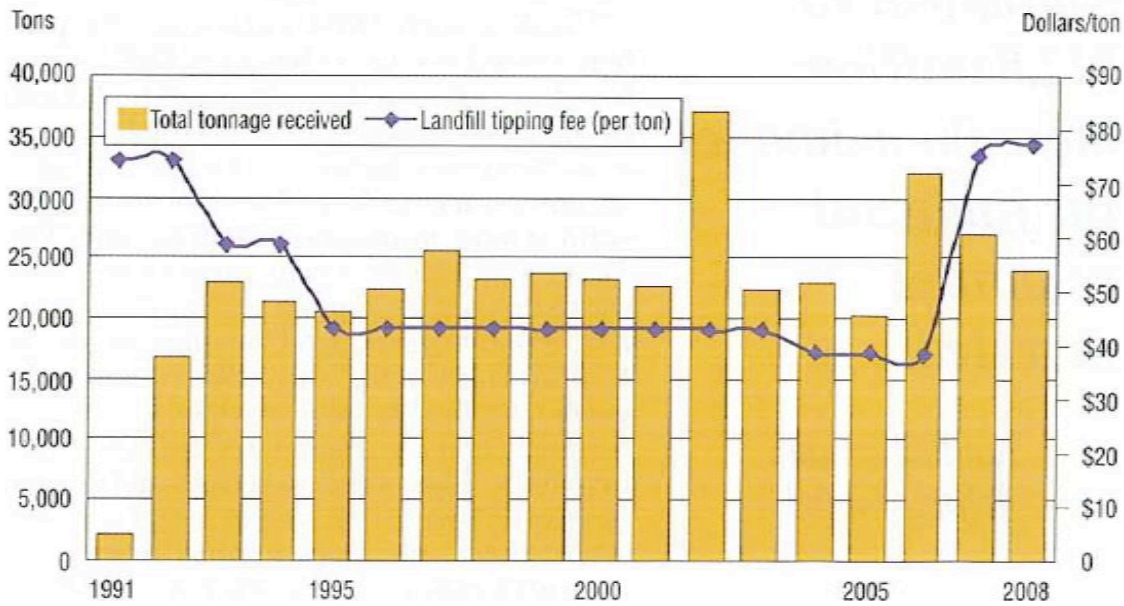
The city incurs expenses through labor, maintenance, utilities, equipment, insurance and debt payments on machinery, yet receives annual revenue through both sale of compost (about \$14/cubic yard) and tipping fees (\$0.70 per cylinder tipped). The most extensive benefits come from avoided landfill fees (transportation, disposal, labor, tipping fees) and reduced greenhouse gas emissions.

Included in this addendum are two visuals: one concerns the cost-benefit analysis of the Amherst composting site, and the other contrasts the annual tons of compost received with the annual landfill tipping fee.

Table 1. Cumulative annual benefits and costs for Town of Amherst Compost Facility (1991-2008)

	2009 \$	\$/Ton
Costs		
Labor costs	4,758,547	11.6
O&M expenses	5,686,573	13.9
Total	10,445,120	25.5
Benefits		
Material sales	2,814,244	6.9
Dump fees	943,339	2.3
Avoided landfill costs	24,958,419	60.9
Avoided GHG emissions (Climate Change-CO ₂ -e)		
Reduced CO ₂ -e emissions (net carbon flux) ^a	2,704,354	6.6
Reduced CO ₂ -e (pesticide production) ^b	91,434	0.2
Reduced CO ₂ -e (fertilizer production) ^b	1,723,584	4.2
Total	33,235,374	81.1
Net Benefits	22,790,254	55.6

Figure 2. Town of Amherst compost facility: Annual tons received and landfill tipping fee



Addendum D: Grant Application Information

MADEP Grant Info and Applications
<http://www.mass.gov/dep/recycle/recawgr.ht>

