

Lowell Graded School Pilot Project April 2014



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Lowell Graded School Pilot Project

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Introduction

The Lowell Graded School Pilot Project was a collaborative effort between Green Mountain Farm to School (GMFTS), Highfields Center for Composting (HCC) and Lowell Graded School. The purpose of this pilot project was to implement a hot bin design in order to create a self-sustainable on-site system capable of processing the food scraps from Lowell Graded School.

Background Information



Lowell Graded School is a small elementary school (108 students from PK-8th grade) located in Lowell, VT. According to the US Census of 2000, the Orleans County town of Lowell, VT has a population of 738 and a NMHI of \$27,969. As one of the towns targeted under this USDA Rural Development Grant, Lowell was the perfect candidate for a pilot project.

This project was initiated and primarily implemented by Green Mountain Farm to School, a non-profit farm to school program based out of Newport, VT. Lowell School has been involved in GMFTS's school gardening programs for years and composting was the missing link in their gardening based curriculum. The school expressed interest in composting, and Lowell Graded School was a great candidate for an on-site system because the town is out of the waste district and in a rural isolated location away from established food scrap hauling routes. In past years, Lowell Graded School has separated food scraps and had them picked up by a chicken farmer. However, this program wasn't successful or sustainable because food scrap pick up was irregular.

This project began in the spring of 2013 when Katherine Simms, the executive director of GMFTS applied for a New England Grassroots Environmental Fund Grow Grant to fund a hot bin composting shed (Figure 1). The project was awarded \$2,500 to implement the system. HCC provided the design and supported the development of this project by supplementing NEGEF funds with this USDA grant.

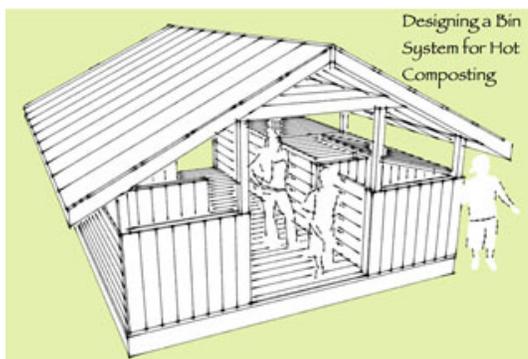


Figure 1: Hot Bin Shed Design

The goal of this project was multifold. The primary goal was to create the infrastructure to process the school's food scraps and garden material. Another goal was to provide an outdoor classroom for students to learn in a hands-on environment about composting and the process of decomposition.

“Student will be active participants in gardening, eating their organic and home-grown produce, and composting their food scraps (which will eventually be used as nutrients for their garden). They will also take part in workshops and hands-on learning, which will utilize the compost shed or relate to healthy food systems and nutrition.” - Katherine Sims (GMFTS)

Materials and Methods

The shed was built primarily by a community volunteer fulfilling service hours along with staff from GMFTS and HCC and a handful of other volunteers. A number of workdays were coordinated, but the building process was dependent on volunteer labor, and tended to be impeded by scheduling and weather. For this reason, the construction of the shed took longer than anticipated, and eventually was taken over by GMFTS to be finished in the Spring of 2014.



Figure 2: Initial Construction of the Compost Shed

GMFTS and Lowell Graded School attempted to engage the community and recruit volunteers by making robocalls to all parents, writing a press release and newsletter articles. Volunteer recruitment was limited, but they were successful in finding a roofer to donate his time, labor and materials.

All parties collaborated to create a modified shed design that included full walls (enclosing the shed completely and protecting it from the elements) and bins that are designed to be manageable by children. All bin walls are insulated and the floor and lid were left un-insulated to provide plenty of aeration. The bins include a hinged front door with a footwall to hold material in and the walls between bins have a removable half wall so compost can be transferred from bin to bin without having to use a wheelbarrow to transfer material. A local roofer donated time and materials to provide a standing seam roof for the shed.



Figure 3: Building the insulated bin walls

To maximize the impact of this project, we created educational signage to hang outside the system and above each bin to describe the stages of the decomposition process. The sign content was a collaborative effort between GMFTS and HCC and the design and final product was provided by HCC. HCC's USDA funding also provided additional building materials for the shed, a home compost thermometer, a compost cart, buckets, t-shirts and source separation posters and stickers for the school. NEGEF funds through GMFTS were used for nearly all the shed building materials.

When it became evident that the shed wouldn't be finished before the winter 2013/2014, we decided to wait to train the school until the 2014/2015 school year. By starting the program with a completed shed and the momentum of a new school year, we aim to create a lot of excitement and interest in composting. In the fall, HCC and GMFTS will co-lead a school wide training to teach the students about composting and separating food waste in the school. HCC will also provide a technical training



Figure 4: Workday at Lowell Graded School compost shed

for staff and students that want to learn how to manage and monitor the compost piles. GMFTS will integrate the compost system into lesson plans with students and provide technical assistance in helping them to monitor and maintain the compost system. Under the leadership of classroom teachers, students will be responsible for daily removal of food waste and building a recipe in the shed.

“The compost project will be a great educational tool for teachers to use in order to discuss decomposition, the nitrogen and carbon cycles, beneficial insects, life cycles, and other soil science with their classes.” - Katherine Simms

Outcomes and Results

During this grant period, the primary outcome was the near completion of the hot bin compost shed for Lowell Graded School and the creation or purchase of all materials needed to start the school composting in the fall. Implementation of the system and student trainings will be conducted with the start of the new school year.



This program is designed to engage all students at the school in one way or more. At the very least, every staff and student will be source separating food scraps, which will divert an estimated 140 lbs of food scraps per week from the landfill. Because of the rotation of students involved in Farm to School programs, the goal is that most students will be involved in monitoring and maintaining the system as well.

Figure 5: Completely enclosed Lowell compost shed

Students will use a compost cart to effectively transport food scraps from the kitchen, lunchroom and classrooms and a recipe sign in the shed will instruct them to cap the food scraps with carbon material like dried leaves, hay, shredded paper or woodchips.

During a shed workday, a GMFTS afterschool group came to check out the compost shed and share their knowledge about compost (Figure 6). Students will continue to learn from educational signage, GMFTS lessons, trainings provided by GMFTS and HCC and classroom lessons.

“The schools participation in the programs encourages children to think critically about agricultural practices, food choices, and how their actions impact the community, as well as promotes the support of the local farms and businesses. The program gives students and teachers ideas on how to be more environmentally friendly and reduce their impact on the environment through sound environmental practices such as composting, organic gardening, recycling, and local buying. Children and adults take these ideas back to their homes and spread this knowledge to family members and peers in what we hope is an ongoing flow of knowledge and ideas. The composting program will cultivate life-long learners of composting and environmental care who will become the spokespeople of the future for the Lowell community.” - Katherine Simms

Challenges and Areas for Improvement

1. One major challenge for this project was coordinating and scheduling with the multiple partners involved. Both GMFTS and HCC are small non-profits that don't have the staff, time, or specific skills to be the driving force behind a building project like this one. Instead, we were dependent on labor and tools from volunteers that work full-time jobs, which made it difficult to coordinate workdays. There also wasn't much volunteer support from the community, despite efforts to engage parents of students or other town members.
2. This project has moved along the timeline of the school. This has meant that progress was slow during summer months and fitting the project into the busy school year was just as challenging. Part of the hold up in the timeline was due to changes in leadership at the school. GMFTS has patiently coordinated with the principal in order to fit the needs of the school as this project was implemented.
3. Another challenge for this project was the continually changing design for the shed and bins. Although the general idea remained the same, details that were overlooked in the planning stages created more work or extra costs. For example, HCC's design suggests half walls, but the Lowell shed has full walls. This is great in terms of keeping snow and rain out of the shed, but it creates the need for a window to let some light into the unwired shed. Another example comes from the half walls between bins. This idea manifested after the framework for the bin walls were installed, so they had to be taken apart and modified. Although many of these circumstances arise normally in the building world, in this case where skillsets were limited, small changes required more time and effort.
4. The most successful composting projects in HCC's experience have a "rotstar" or someone who is the driving force behind it and usually the most successful "rotstar" is a teacher or parent that is closely associated with the school. Although there has been a lot of effort and passion behind this project, none of the collaborators work at the school on a daily basis. GMFTS has done an incredible job communicating with the principal to create a project that will fit their needs, and as a second phase will work with teachers to integrate composting into their curriculum. This will help to create a self sustaining program with maximum student involvement. At this point, it is still hard to tell to what extent composting will be integrated, but our goal is to create momentum around this program when the students are trained in the fall.

Conclusion

This pilot project was a great opportunity to collaborate with Green Mountain Farm to School and to be able to create a resource for Lowell Graded School as well as a model system for other schools. HCC



Figure 6: GMFTS group at Lowell learns about compost and the compost shed

This resource uses or is adapted from content originally developed by the Highfields Center for Composting in Hardwick VT. The Highfields Center for Composting dissolved as an organization in December 2014 and ended its active involvement in the Close the Loop Program.

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