

**Starting a Compost Program:
A Primer on Student-led Composting Initiatives at University of Michigan's
School of Natural Resources and Environment
(soon to be the School for Environment and Sustainability, or SEAS)**

The Dana Compost Program started in 2014 and has been successfully diverting more than 1,000 lbs. of waste from landfills each year. Below are the steps students and facilities staff took to implement composting in the Samuel T. Dana Building (home of the [School of Natural Resources and Environment](#)) at the University of Michigan. This document was put together to help other schools, groups, or departments champion similar efforts in their buildings.

Please email DanaCompostCrew@umich.edu with questions.

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1. Forming a Group to Champion a Composting Program

In the fall of 2014, several incoming students at the School of Natural Resources & Environment responded to a request from the buildings' Facilities Manager to help develop a composting program in the Dana building, in order to divert waste from landfills. Five student champions formed the Dana Compost Crew and partnered with the Facilities Department to develop a plan for how to implement a composting program. The Facilities Manager, who was and continues to be a major champion for the effort, met weekly with the group to help develop a plan of action. Meeting weekly in the beginning was important to keep the momentum going, and as we were able to complete the more substantial tasks, we moved the meetings to monthly.

2. Getting Buy-in for the Program

- *Holding Initial Meetings*

- It was important to our team that we build a program utilizing UM resources to have a program more fully integrated within the University. We met with staff from our building's custodial team, the Waste Reduction & Recycling Office (WRRO) & pest management to get their buy-in.
- **Custodial staff:** It was critical to have Custodial Services participation and support of the program. It was equally important to us that they understood how very important their role was in the success of our program. We shared that the additional compostables collection would be just like their current duties and incorporated into their "daily" work. We did **not** want any compost to linger more than a day or two to reduce the chances of creating odors or attracting pest, plus the compostable bags degrade if they sit for too long. Our system for signaling compostable waste was very simple and intuitive: a green bag meant the contents would go into the outdoor compost bin rather than the trash or recycling dumpster.
- **WRRO:** This office develops campus composting programs and works closely with the compost hauler, UM Waste Management Services (WMS). WRRO provided guidance on how the program would function outside of the building, like how many carts, how often they would get collected, and how much they would cost (\$12.50/cart). We decided on one outdoor bin, near the recycling and trash dumpsters, which WMS would tip (i.e. pick-up) on a weekly and more frequently when we requested it. Note: review your events schedule, if there are a lot of events you'll need to notify Sam Moran for an extra pick up. They also helped us understand what to communicate would be acceptable materials for the compost program. They also clarified their main concern, contamination (i.e. non-compostable items ending up in the compostables). Finally, they provided guidance on the indoor bin(s) that students, staff, and faculty would use to dispose of their compostables.

- **Pest management:** Pests are a concern with food waste, and a serious concern for the building. Therefore, it was important that we made all efforts to avoid attracting them. Pest management agreed that emptying of the indoor bin regularly and keeping the surrounding area clean, would help keep pests down.
- Following these meetings, we began collecting data, developed a plan of action for the program, and a formal proposal to our school's Dean, as we wanted to have her support to help ensure the longevity of the program.
- *Collecting Data*
 - **Community Survey:** In order to gauge whether or not students, staff and faculty would use a compost bin if available, we distributed a brief online survey. Survey responses indicated a high level of support for a compost program within the Dana building. Over 90% of the respondents said they agreed or strongly agreed that the building should have a compost program and that they would participate in it. For a list of survey questions, see [Appendix A](#).
 - **Waste Audit/Trash Sort:** In order to understand how much of the building's waste could be diverted from landfills through a composting program, we conducted a multi-week audit of the building's waste. This data collection effort was at the request of our Dean to see data supporting our claim that a composting bin would divert trash from the landfill. For more details on how we conduct a waste audit, see [Appendix B](#).
- *Developing a Plan*
 - Armed with our data on potential diversion, which we estimated at over 40%¹ of the current trash, we developed a plan for our compost program that would ensure low levels of contamination.
 1. The indoor bin would be located in a central kitchen within the building.
 2. It would be in a locked cabinet. To get a key, students/staff/faculty would need to attend a brief 15-minute training. After being trained they would be asked to be ambassadors for the program, which meant promoting the program to Dana building community members.
 3. The compost bin would be emptied daily by custodial staff, and they would take to the green bag to a larger outdoor bin located by the trash and recycling dumpsters.
 4. The outside bin was provided to us by the WMS and emptied by their staff weekly or as needed upon request via phone call.

¹ There are some caveats to this number. Our facilities manager and the Occupational Safety and Environmental Health office asked us not to sort the trash from the buildings' bathrooms or laboratories, given the potential health hazards associated with some of that waste. Therefore, the potential compost that we could divert from landfills reflects 40% of trash by weight collected from kitchens, common areas (including hallways), and offices.

5. The charge for each tip (time the bin was emptied) was \$12.50. This cost plus the costs of buying the special compostable liners for the kitchen bin, the actual plastic kitchen bin itself, and the cabinet lock and keys were covered by our buildings' facilities budget. If that is not a possible funding source for your program, another option is to apply for funding through your school's student government or, if you are a part of University of Michigan, you can apply for a [small-scale grant through the Student Sustainability Initiative](#).
- Along with the setup of the bin, we also designed a short (15-minute) training which included an overview of how the program worked and which items could be composted. This training was designed for any faculty, staff, or student who was interested in getting a key to access the compostables bin.
 - *Drafting a Proposal*
 - We organized our thoughts into a formal proposal for the school's leadership (in this case it included the Dean and the Associate Dean in charge of facilities), and once we had their approval we were able to launch the program.

3. Implementing the Program

- *Education*
 - Implementing the Dana composting program required extra time to educate individuals interested in using the Dana compost bin. The trainings for access to the bin allowed us to create a group of compost ambassadors.
 - Initial education efforts were done through 15-minute training events where students learned what was acceptable for the compost bin and had time to ask questions. After these events, participants were given a key to access the compost bin in the Dana kitchenette.
 - The key access and training system was designed to reduce risk of contamination by only allowing those with training to use the bin.
 - Once the program was deemed a success, we left the bin unlocked. Training was then provided to anyone who requested it and also for those holding events in the Dana Building. Our community is pretty close here so many of the students took it upon themselves to educate newbies or building visitors about acceptable compostables.
- *Communication & Outreach*
 - Posters and flyers alerting students about the new compostables collection bin, where it was located, how students could gain access to it, and what could be composted were posted in the Dana building.
 - Emails were sent to the SNRE community to share training events and continue to promote the new bin.

- Blurbs promoting the new compostables collection bin in Dana were included within regular SNRE student government emails.
- Compost Crew members also made presentations at faculty and staff meetings to alert these groups about the new program.
- *Ordering Supplies*
 - The Dana Facilities Department ordered laminated posters, magnets, compost bags, etc., and students were in charge of keeping track of supply inventory and managing the program on a day-to-day basis.
 - Management of the supplies included loaning those supplies to students or groups hosting zero waste events and ensuring that there were enough bags to meet demand.
 - Temporary bins, signage and containers were left in a central location and clearly labelled.
- *Monitoring & Data Collection*
 - Students monitored the Dana compost bin for the first few weeks that the new, locked, indoor bin was in place.
 - Monitoring included checking the bags for contamination, weighing the collected compost, and tracking how much contamination was the bin each day over the monitoring period.
 - This data was collected and reviewed by student members of the Dana Compost Crew.

4. Maintaining the Program

- *Communications & Outreach*
 - Regular email reminders are sent out about the Dana compostables bin. They often coincide with other events such as RecycleMania, expansion of the programs, and new student orientation.
- *Spot Audits*
 - Random, informal spot audits are conducted by the Dana Compost Crew to ensure that the bin remains contamination-free during regular use.

5. Expanding the Program

- *Bin Expansions*
 - *Keyless Compost*
 - After 3 semesters of successfully running the Dana compost program under a locked bin system, the Dana Compost Crew piloted an unlocked

bin and measured amount of compostables collected and the rate of contamination for a period of two weeks.

- After two weeks, there was virtually 0% contamination. The only source of contamination was a single candy wrapper. There was also about twice as much compostable material by weight collected during the unlocked bin pilot than when we measured during a sample of 5 weeks at the end of 2015.
- The successful unlocked bin pilot led to leaving the bin permanently unlocked. The lack of contamination in the bin after the pilot was the biggest influence in the decision to leave the bin unlocked with the location of the bin inside of a cabinet being the second. Since individuals needed to go slightly out of their way to open the cabinet in order to place items in the compost, we believe this willingness to go through the extra effort decreases the chances that people will inadvertently throw non-compostables into the bin.

- *Compost in Administrative Office*
 - The Dana Compost program expanded to offer a compostables collection bin within the Admin Staff Office which is also emptied by custodial services.

- *Future Program Expansion*
 - The Dana Compost Crew seeks to expand the program to areas within the building that have requested it or that we feel could benefit from it. The 4th Floor Kitchen, IT offices, Dean's Kitchen, larger Centers and LA studios are key target areas.
 - A two-week pilot advertised by a few building-wide emails of 4th floor compostables bin resulted in minimal usage of the bin placed in that location and also little contamination. More advertising is probably needed to alert people to the bins existence if another bin was permanently added in that location.
 - The Dana Compost Crew will begin to include compost training in the upcoming new student orientation, an event that first year students attend before beginning their first year of classes.
 - The Dana Compost Crew is also drafting a compost training document to include in new staff orientation materials.

Appendix A: Survey Questions

Our survey included 6 questions to which respondents were given a selection of Strongly Agree, Agree, Neither Disagree nor Agree, Disagree, or Strongly Disagree.

To what extent to do you agree or disagree with the following statements:

1. *I think that the Dana building should have a compost bin in the Ford Commons kitchen.*
2. *I would participate in a compost program in the Ford Commons kitchen with SNRE students, faculty, and staff.*
3. *I would still participate in the program if it required a 15-30 minute informational session that explained how the kitchen compost bin would be managed.*
4. *I think that the required informational session should include more information on composting in general or suggest other resources.*
5. *I would help educate others on how they can participate in the compost program in the Ford Commons kitchen.*
6. *I would work with other students, faculty, and staff to determine how SNRE can improve and expand upon the compost program.*

Appendix B: Conducting a Waste Audit/Trash Sort

Goal: Evaluate the potential impact of a composting program in the Dana building by quantifying the amount of compostables that could be diverted from Dana's waste stream.

Supplies:

- Puncture-resistant rubber gloves
- Nitrile gloves
- Tyvek body suits
- Goggles
- Tarp
- Scale
- Waste bins
- Volunteers

Process:

1. We alerted the Occupational Health and Environmental Safety Office at University of Michigan regarding our plans to conduct the audit and they provided us with a list of supplies and recommended best practices for it. They asked us not to sort any trash that could have potentially hazardous waste, which included trash from bathrooms and laboratories so those rooms were omitted from our review
2. We met with the custodians and asked them to set aside trash and recycling bags on specific days from selected rooms. In our building, trash is collected from offices on each floor on different days, while it is collected from common areas (hallways and kitchens) every day. Therefore, we wanted to make sure we conducted the audit on different days to get a reasonable sample of the waste produced in the building. During our meeting, we asked the custodians to place all trash and recycling collected on the evening prior to an audit in an agreed upon location in the building.² These bags of trash and recycling were then stored in this location until our sort the following day.
3. Volunteers participating in the sort dressed in full body Tyvek suits, wore rubber glove liners underneath cut resistant gloves, and donned safety glasses before opening trash for the audit. Volunteers went through bags and separated refuse into trash, recycling, and composting receptacles. Trash went into the clear plastic bags used by custodians for trash, recycling into UM's blue recycling bags, and composting items went into BioTuf certified compostable bags.
4. We weighed each bag prior to sorting. Then we opened the bags and sorted the waste into recycling, composting, or trash bags set out on our tarp. During the audit, whenever a bag became full, it was tied, weighed, and recorded in the particular category it belonged in. At the end of the audit, we took all the bags of waste out to their respective containers at the Dana buildings dock. We planned ahead and scheduled on-call compostables pick up from WMS so our composting sorting efforts would not end up in a landfill.
5. Sophie Chen, one of the Dana Compost Crew team members, compiled the raw data into a table (see Table 1 on next page) denoting the weights of each type of waste (compost, recycling, landfill) and then calculated the percentage of the total weight of waste collected that each of these categories represented.

² Trash from bathrooms, labs, and recycling bins were not included for this audit; it was disposed of by custodians per their normal practice.

Table 1: Dana building trash sort data and analysis

Date	<i>Before sorting (in pounds)</i>					<i>After sorting (in pounds)</i>				<i>Analysis</i>		
	<i>1st floor</i>	<i>2nd floor</i>	<i>3rd floor</i>	<i>4th floor</i>	<i>Total</i>	<i>Trash</i>	<i>Composts</i>	<i>Recyclables</i>	<i>Total</i>	<i>Trash</i>	<i>Composts</i>	<i>Recyclables</i>
10/19/14	23	14	14	7	58	28.5	29	7	64.5	44.19%	44.96%	10.85%
11/4/14	16.5	12	10	13	51.5	15.5	26.5	6.5	48.5	31.96%	54.64%	13.40%
11/6/14	17.5	20.5	40.5	0	78.5	50	21.5	5.5	77	64.94%	27.92%	7.14%
11/10/14	38	19	7.5	7	71.5	25	33	7.5	65.5	38.17%	50.38%	11.45%
11/14/14	29	21.5	0	8	58.5	20.5	34	4.5	59	34.75%	57.63%	7.63%
Total	124	87	72	35	318	139.5	144	31	314.5	42.80%	47.11%	10.10%