



Compost Facility Redesign, Bellefonte

**sustainable
communities
collaborative**



Semester/Year: 2016/17

Community Partner:
Bellefonte Borough, PA

Class: BE 460/466W

College: Agricultural Science

Faculty: Megan Marshall

IMPACT: The student project report provided key information and data which the borough used in making a case for a compost site improvement grant. The application was funded by the Pennsylvania Department of Environmental Protection in the amount of \$388,000. The grant will provide for the professional work of an engineer to lay out the facility, and purchase new equipment and security measures. The SCC provided for a field trip to another compost facility for students to observe a functioning operation.

Bellefonte Borough's compost facility was in trouble; exposed to the elements it flooded frequently, the site was muddy and not conducive to operating the heavy machinery necessary for a compost facility. Expanding its feed stock from leaves, grass clippings and brush into food waste and biosolids, as well as investment in equipment, and possible revenue generating expansion into compost sales all seemed infeasible given current site conditions. A class of PSU Ag Engineers took on this project as part of their 2-semester capstone course. They redesigned the pad for compost operations, including appropriate drainage, analyzed the compost mix and created recipes for most optimal compost composition, including possible new feed stocks. In all, they created an outline to improve the infrastructure of the site, to accommodate seasonal changes and business model, and added recommendations for future equipment purchases that would optimize the operation.



" We could not be more thrilled to see a project that benefited both [Penn State] students and the Borough being this successful. For a borough like Bellefonte, this is a significant grant award and will have a major impact, both from an effective and efficiency standpoint in our future composting" , Don Holderman, Assistant Borough Manager, Bellefonte.

11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Compost Facility Redesign, Bellefonte

sustainable communities collaborative



Semester/Year: 2016/17

Community Partner:

Bellefonte Borough, PA

Class: BE 460/466W

College: Agricultural Science

Faculty: Megan Marshall

IMPACT: The student project report provided key information and data which the borough used in making a case for a compost site improvement grant. The application was funded by the Pennsylvania Department of Environmental Protection in the amount of \$388,000. The grant will provide for the professional work of an engineer to lay out the facility, and purchase new equipment and security measures. The SCC provided for a field trip to another compost facility for students to observe a functioning operation.

Bellefonte Borough's compost facility was in trouble; exposed to the elements it flooded frequently, the site was muddy and not conducive to operating the heavy machinery necessary for a compost facility. Expanding its feed stock from leaves, grass clippings and brush into food waste and biosolids, as well as investment in equipment, and possible revenue generating expansion into compost sales all seemed infeasible given current site conditions. A class of PSU Ag Engineers took on this project as part of their 2-semester capstone course. They redesigned the pad for compost operations, including appropriate drainage, analyzed the compost mix and created recipes for most optimal compost composition, including possible new feed stocks. In all, they created an outline to improve the infrastructure of the site, to accommodate seasonal changes and business model, and added recommendations for future equipment purchases that would optimize the operation.



"We could not be more thrilled to see a project that benefited both [Penn State] students and the Borough being this successful. For a borough like Bellefonte, this is a significant grant award and will have a major impact, both from an effective and efficiency standpoint in our future composting", Don Holderman, Assistant Borough Manager, Bellefonte.

11 SUSTAINABLE CITIES
AND COMMUNITIES



12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION

