

Organics Management Pre-Feasibility Study

Township of Spring
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1 PROJECT DESCRIPTION

Spring Township (Township) is a Pennsylvania Municipal Waste Planning, Recycling and Waste Reduction Act (Act 101) mandated recycling community located in Berks County. The Township provides weekly solid waste management collection services to over 10,000 households.

All households are provided a blue 96-gallon cart for the collection of trash and a green 96-gallon cart for the collection of recyclable materials. All waste must completely fit in the 96-gallon trash cart for collection. Residents are allowed to place one bulky item at the curb each week for collection. Recyclable materials are collected single-stream by the Township's contracted hauler.

The Township operates a number of programs to divert yard waste from disposal. These programs include:

- **Drop-Off Sites** – The Township operates two yard waste drop-off sites that are open to residents for the placement of yard waste. No businesses or landscaping companies are authorized to use the sites. Residents are required to remove yard waste from plastic bags prior to placing materials in the designated areas. The drop-off sites are open limited hours every day of the year (6 a.m. to 9 p.m. May through September and 6 a.m. to 7:00 p.m. October through April). Despite these limited daily hours, there are no access controls to limit use during “closed” hours. The Township does not staff the sites. The Township has established agreements with three neighboring municipalities that allows them to bring their leaves to these sites, which are consolidated and transported to a composting facility. Woody material collected is ground-up onsite and transported to a facility that processes the material into mulch. The sites also provide for the seasonal drop-off of Christmas trees.
- **Curbside Leaf Collection** – From October through the first week of December, the Township operates their curbside leaf vacuum program. Residents receive weekly curbside collection of leaves via vacuum truck during the established collection period. Leaves placed in bags or containers are not collected. Leaves are brought to the drop-off sites for consolidation before they are transported to a composting facility.
- **Biannual Branch Clean-Up Events** – The Township provides biannual branch collection events whereby residents may place woody materials curbside for collection by Township staff. These events are typically held in the spring and fall each year. Branches and trimmings collected as part of this program must be placed in an open container or a paper lawn bag or tied and properly bundled to be no larger than 48” x 18” x 18”.

The Township is interested in moving one of their yard waste drop-off sites to another location. This new location, which is adjacent to the Township's wastewater treatment plant, may provide an opportunity for the Township to process materials onsite. The Township requests recycling technical assistance to identify different yard waste management options. This report is a pre-feasibility study that summarizes the options for the Township so that a more detailed composting feasibility study could be completed.

2 SUMMARY OF WORK

This section summarizes the completed tasks for this project.

Task 1 – Data Collection and Site Visit

SCS requested technical and operational information/data on the Township's yard waste management programs. Limited information was received and reviewed. SCS staff traveled to Spring Township and completed a site visit and field observations. The site visit and field observations occurred over a one-day period and included visiting the drop-off sites and the anticipated new drop-off site.

Task 2 – Identify Options for Organics Recycling

SCS identified composting program options for the Township to consider in managing yard waste and organics generated within their jurisdiction.

Task 3 – Pre-Feasibility Study

SCS completed a pre-feasibility study that identified the opportunities and challenges, risks, and other program considerations for each organics management option. The pre-feasibility study was designed to complete an initial pre-screening analysis of the options identified to help guide Township officials in identifying the most feasible option(s) for organics management that can be studied further.

Task 4 – Final Report

This report summarizes the options and recommendations made as part of this study.

3 CURRENT PROGRAM

The Township's yard waste management program serves approximately 27,000 county residents. This includes the curbside collection of leaves in the fall and drop-off sites that are open to residents to dispose of yard waste. The drop-off sites are uncontrolled and open to the public for use 365 days per year. In addition to usage by Spring Township residents, the Township has agreements with Sinking Spring Borough, Lower Heidelberg Township, and Wyomissing Borough that allows the disposal of yard waste collected through their programs. Despite these sites being open and uncontrolled, the Township reports little illegal dumping activities and instances of materials not being prepared according to established requirements. Although infrequent, the most common issue encountered at the drop-off sites is yard waste (in particular leaves) being left in plastic bags. When this occurs, Township staff manually tear open the bags and place the leaves in the appropriate location.

DROP-OFF SITES

Locations

Yerger Boulevard

The Yerger Boulevard drop-off site is the larger of the two sites and is centrally located on Yerger Boulevard near State Hill Road. Leaves are brought to the drop-off sites for consolidation into block piles before being transported to a compost facility under a contract with Hopewell Trucking in Boyertown. All material deposited at the site is collected by Township staff using a loader and placed into dump trucks for transport to a composting facility. Approximately two acres of the site is actively utilized to accept and stage yard waste. Even so slopes ranging from five to eight percent in the active area make the site less than ideal for these operations. Total site area is approximately 2.5 acres; however, in some locations slopes of up to ten percent prevent the site from being fully utilized to stage and process yard waste.



Google Earth Image of Yerger Boulevard Yard Waste Drop Off Site

Goose Lane

Goose Lane is a smaller yard waste drop-off site in the southern, more rural section of the Township located near the intersection of Sage Road. The Goose Lane site includes two concrete bunkers that measure 3,000 and 6,600 square feet, respectively. With a total area of 9,600 square feet, it encroaches on the roadside, with minimal access that makes it a safety hazard to users and those driving on adjacent roads.



Google Earth Image of the Goose Lane Drop-Off Site



Goose Lane Drop-Off Site

Materials

The Township does not track the quantity of materials received at each site separately. In 2019, the drop-off sites received about 26,700 cubic yards of yard waste. Most of these material is brush (16,000 cubic yards) that is dropped off by residents. About 8,200 cubic yards of leaves are also received at the site, mainly from the curbside collection programs provided by the Township and neighboring jurisdictions that have agreements with the Township to bring collected leaves to the sites. **Table 1** summarizes the quantity of materials received at the two locations.

Table 1. Quantity of Yard Waste Received at Drop-Off Sites

Material	Quantity (Cubic Yards)
Brush	16,000
Leaves	8,200
Grass Clippings	2,500
TOTAL	26,700

Operations

Materials brought to the site by the Township, neighboring municipalities, and the general public are managed and prepared by Township staff for transport to processing facilities. Materials are placed in designated bunkers or areas of the site by users. There is no permanent structure at either of the sites and materials are not covered. Township staff use their equipment to separate, screen, and organize clean streams of materials. Township staff visit the drop-off sites at least once a week or more often as needed to manage and organize materials.

Leaves and grass are not processed at the site into compost. The materials are transported off site to processing facilities to produce compost. The Township contracts with Hopewell Trucking to transport the materials as needed, but usually no more than a few times each year. The Township uses their own equipment and staff to load the materials into Hopewell trucks. Woody materials are ground up quarterly to produce mulch that is used in Township landscaping projects.

Equipment

The Township manages yard waste at the drop-off sites with minimal equipment resources. Existing equipment utilized by the Township includes:

- **John Deere 54J (H) Front-End Loader** – The Township owns this piece of equipment and stores it in the Township garage.
- **Horizontal Grinder** – The Township rents a horizontal grinder on a quarterly basis to grind the woody materials. The Township has had to increase the frequency of grinder rentals due to increased amounts of brush received at the sites.

Staffing

The Township does not have dedicated staff to manage and maintain the composting drop-off sites. The Township's Director of Public Works oversees operations at the drop-off sites and dispatches public works staff to process materials as needed. When maintaining the drop-off sites, the Township notes that other public works projects must be delayed until staff can resume work.

Budget

On average, it costs the Township \$175,000 - \$200,000 annually to manage and operate the two drop-off sites. The major cost items include transportation, labor, and material processing/tipping fees. This program is paid for through the \$40 per household residential recycling fee that is assessed to all households in the Township, which has not been adjusted since 2008. Additionally, neighboring jurisdictions that contract with the Township to use the sites to dispose of leaves pay a fee for this service.

4 FINDINGS/OPTIONS

OVERVIEW

The Township is in a unique position to rethink the future of its yard waste management program. The primary drop-off site, Yerger Boulevard, must be moved so that the site can be redeveloped into a recreational facility. Since Township residents have grown accustomed to the yard waste management services provided by the Township, it is necessary to identify another location for yard waste to be managed. Local yard waste management capacity under the control of the Township is important for a number of reasons, including:

- **Facilitate Compliance** – The Pennsylvania Waste Planning, Recycling and Waste Reduction Act (Act 101) requires Spring Township to establish a program whereby yard waste (leaves, branches, brush, and garden residues – not including grass clippings) must be collected and managed separately from municipal solid waste. A network of drop-off locations can help the Township with compliance of the requirements. **Appendix A** includes a summary of the Act 101 recycling requirements.
- **Service Levels** – The Township’s drop-off sites provides an important solid waste service to residents that facilitates the diversion of yard waste from disposal;
- **Foster Cooperation** – The current yard waste management program allows for cooperation among neighboring jurisdictions. There are some efficiencies realized in consolidating yard waste materials from multiple jurisdictions at one location. As solid waste management costs continue to increase, regional cooperation is needed to improve economics of scale and improve efficiencies.

With the relocation of the drop-off site, the Township should evaluate if existing yard waste management services currently meet residents’ needs or if expanding services for yard waste, including implementing a composting program for leaves and/or grass clippings may be desired. This report discusses some options for the Township to expand their yard waste management services to include processing material to produce compost and mulch products that could be made available to residents.

FACILITY TYPES

There is a wide variety of composting technologies for processing organics. The type of facility the Township could pursue is largely based on the materials the Township hopes to compost. There are three major types of facilities can be summarized as follows:

1. **Turned Windrow Composting:** Organic materials are placed in long rows (i.e., windrows) where oxygen is introduced by periodically turning the windrows.
2. **Aerated Static Pile (ASP):** Organic materials are placed in long piles and air (oxygen) is forced through the pile using a blower and aeration pipes. Piles of organic material may or may not be covered with an impermeable cover that facilitates the composting process and keeps moisture out.

- 3. In-vessel Aerobic Composting:** An in-vessel composting system uses a controlled aerobic decomposition process that uses a combination of rotating drums, silos or tunnels to mix and aerate the materials.

Additionally, a hybrid composting system may also be implemented. A hybrid of two facility types may be possible to maximize the benefits of the systems. This may include an ASP system in Phase 1 of the composting process, followed by open windrow processing as Phase 2. The aerated static pile provides superior process and odor control during the critical initial weeks of the composting process, while the windrows provide more cost-effective management through the completion of the compost process.

In general, there is a progression of increased costs and operating complexity from turned windrows to ASP to in-vessel aerobic composting. However, the added costs and operational complexity come with increased system capabilities and benefits including:

- **Increased Throughput** – As the composting process is increased, more material can be processed and turned into compost;
- **Material Flexibility** – More complex systems allow the flexibility to handle a greater variety of organic materials, such as food scraps and biosolids;
- **Land Requirements** – The land requirement to process materials is reduced when the composting process is sped up as in the case of ASP and in-vessel aerobic composting;
- **Odor control** - Systems that are covered have an added benefit of controlling and managing odors that could otherwise cause significant public concern and regulatory obstacles.

The following section is a more detailed look at these composting processes.

Turned Windrow Composting

In a windrow composting system organic material is organized into long narrow piles (windrows) and turned as needed based on temperature and time. The turning serves to mix and break up material, aerate the materials, and release excess moisture. This technology is the recommended option for most municipalities, especially when only composting yard waste as is the case in Spring Township. It includes reduced operation and maintenance requirements and limited equipment needs. Municipal composting systems with windrows are generally turned every three to four weeks by a front-end loader, but more frequent turning may be required depending on climate and the composition of yard waste being processed.

Some facilities use more sophisticated and expensive windrow turning machines instead of front-end loaders for aerating and turning the windrows. Front-end loaders are used to form the windrows and a windrow turner is used to turn and aerate the materials. This results in more thorough and efficient blending and aerating than a front-end loader can achieve, which can speed the composting process and result in higher quality compost.

Aeration in windrows occurs in two ways:

- 1) By convection when warm vapors rise through and exit the piles drawing in fresh air, and
- 2) By direct exposure when piles are mechanically turned inside out, clumps are broken apart, and materials are fluffed, which improves air circulation.



Windrow turner

Since windrows are repeatedly disturbed, the composition of the yard waste material (i.e. recipe) can be adjusted as needed in response to changing conditions or odors. Turning windrows facilitates the even mixture of materials and exposes the core of the pile to high temperatures. If odors emerge after a turning event, windrows can be covered with three- to six-inch layers of finished compost to mitigate its impact.



Windrow composting system

Windrow composting systems are best used when only yard debris is being composted; however, these systems can work for composting food scraps as well. There are several factors to consider when using turned windrows to process food residuals to avoid odors, pests and pathogenic contamination. Piles with food residuals may need more frequent turning initially than those with yard waste alone and must be maintained in excess of 131 °F to kill pathogens. Though these factors can present challenges not previously encountered with composting yard waste, they are minor and infrequent if piles are managed properly. A simple windrow composting system would likely serve as the best solution for the Township to compost yard waste collected through their existing program.

Aerated Static Pile (ASP)

ASP composting is a more complex technology which is often used to process larger volumes of highly putrescible organic materials such as food scraps. ASP systems may include covered or uncovered piles in which the oxygen concentration is maintained by blowing or pulling air through the windrow using a blower and aeration pipes. Water may be added to maintain moisture content and increase the rate of decomposition.

This type of a system would be more appropriate than a turned windrow system particularly if the Township decides to process food scraps and/or biosolids at the facility. The three phase composting process in an ASP system takes about eight weeks according to the following schedule:

- **Phase 1: High Rate Active Composting (28 Days)** - The composting process begins with a front-end loader moving the feedstocks from the mixing area to the Phase 1 windrow, which includes aeration pipes connected to a blower system. The windrow is built, covered, and temperature and oxygen probes are installed.
- **Phase 2: Maturation Curing Composting (14 Days)** - After Phase 1 is completed, the cover is removed from the windrow and the compost is turned by a front-end loader. Once a windrow is turned, it is covered and the temperature and oxygen probes are installed again. The aeration system is turned back on and the compost cures for approximately two more weeks.
- **Phase 3: Finishing (14 Days)** - After Phase 2, the cover is removed from the windrow and the material is moved by front-end loader to an open windrow during the finishing phase of the process.

The cover is weighted (sealed) and completely encloses the entire pile, which can then be pressurized to facilitate an even distribution of air. Additionally, these systems often facilitate the even distribution of temperature throughout the composting pile.

In a forced aeration system air is supplied to decomposing materials via perforated pipes embedded in or under each windrow. A blower moves the air, either by suction to pull air through the pile and into the perforated pipe ("negative pressure"), or by forcing air from inside the perforated pipe outward through the piles ("positive pressure"). The blower can operate continuously or intermittently on a timer or thermostat. Negative pressure draws air through the pile into the pipe, which helps filter out odors before discharge.



ASP composting system

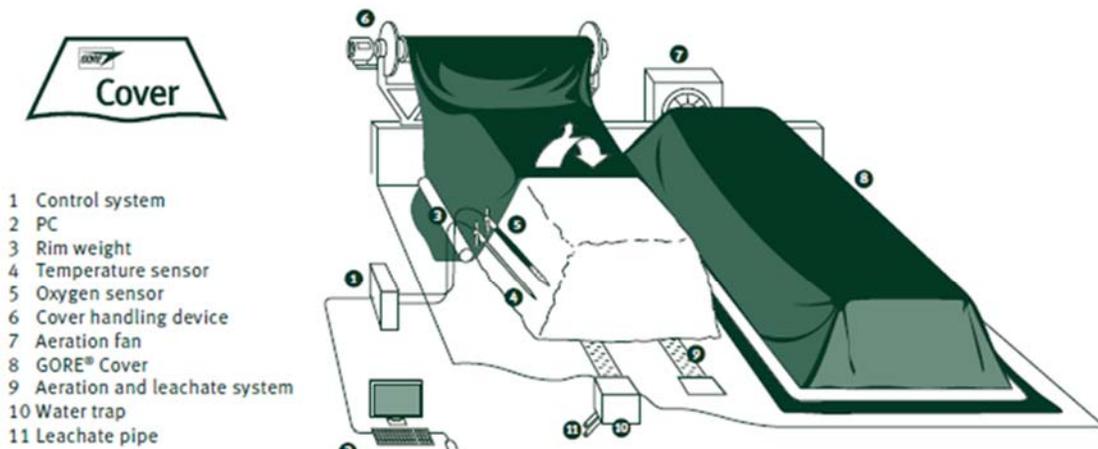
Materials in ASP systems are not turned during the process making it important to facilitate even air distribution. Organic materials are mixed prior to entering the ASP system and then placed on a base of porous materials (e.g., wood chips, chopped straw) in which the pipes are located. Initial pile height can be up to 8 feet, provided the porosity of the materials is sufficient to allow air to move around. If the material is particularly wet, it may be necessary to use a bulky carbon source (e.g., wood chips) to increase porosity of the mixture. It is also useful to cover the pile with a three- to six-inch layer of finished compost to maintain moisture on the pile surface, discourage pests, insulate against heat loss, and prevent odors.

Odors and volatile emissions can be an issue for ASP systems. Some best management practices include covering the pile with wood chips or finished compost to control odors. Several vendors also market covered aerated static pile systems that utilize a fabric cover over the windrow to manage odors. These piles are built, covered with an engineered fabric (such as a Gore® cover system), and

undergo forced aeration. **Figure 1** illustrates one technology of many that are used to cover an ASP composting system.

Surface water runoff and excessive moisture due to rainfall are typically less of an issue for covered ASP systems than turned windrows or uncovered ASP systems. However, leachate and contact water from the windrows must be actively managed regardless of whether the systems are covered or uncovered. An ASP composting system could be implemented at Spring Township, particularly if the Township initiated programs to recover and compost food scraps and biosolids. An ASP system would allow for the composting of yard waste and food scraps. Biosolids could be composted in an ASP system, but in a separate pile from the food scraps.

Figure 1. Sample ASP Composting System Using a Gore® Cover System



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In-Vessel Composting

In-vessel composting is a highly technical approach to composting that confines organic materials in metal or plastic tanks or concrete bunkers. The temperature and air-flow in these “vessels” is carefully controlled to facilitate the composting process. These systems have the highest costs; however, they result in the greatest level of odor control and the shortest composting time. These systems are generally used for composting biosolids and/or food scraps and are generally not used to process yard waste only.

In-vessel compost systems are housed in a large building equipped with a rotating tank that creates a consistent environment for incoming materials. In-vessel systems come in many forms, but will either be continuous flow or batch systems. Batch systems would require more than one unit if a constant input of food scraps is being added, so that fresh material is not being added to batches that are almost complete and ready for unloading. These systems have a variety of processing screens and other devices for removing contaminants from the feedstocks in order to prepare a marketable product. They are equipped with a process air system and biofilters for removing odor from exhausted air. The systems require larger capital costs as well as a sophisticated operating strategy. SCS does not consider in-vessel composting to be a viable solution for the Township at this time as these systems are not designed to process yard waste.



In-Vessel composting system

Table 2 summarizes the key characteristics and comparisons of the three main types of composting systems.

Table 2. Summary of Composting Systems Options

Characteristic	System Type		
	Turned Windrow	ASP	In-Vessel
Materials	Yard waste	Yard waste, food scraps, biosolids	Yard waste, food scraps, biosolids
Technology Complexity	Low	Medium	High
Cost	Low	Medium	High
Material Mixing	Infrequent/Throughout	Before processing	Continuous
Compost "Recipe" Adjustment	Throughout	Difficult	Not possible
Land Requirement	High	Medium	Low
Odor Management	During turning; apply layer of finished compost	Removed from system by negative pressure	Completely contained in vessel
Composting Rate	4 to 6 months	3 to 6 months	3 to 5 weeks

CONCEPTUAL COMPOSTING SYSTEM

This section provides some guidance for the Township in exploring a system whereby organic materials currently collected may be composted.

Windrow Composting

The turned windrow and ASP composting systems (or hybrid of the two) are the most logical approaches for the Township to implement a composting operation. The size and spacing of the windrows would be based on the type of equipment the Township used to turn the piles. Typical sizes and dimensions for a system utilizing a windrow turner are summarized in **Table 3**. More spacing between windrows would be required if the Township uses an excavator or loader to turn the windrows. Likewise, additional time would need to be allocated for that process as well.

Table 3. Windrow Sizing Characteristics

Windrow Characteristic	Size (Feet)
Height	6 to 9
Width	12 to 18
Length	Varies on property dimensions
Spacing	1 to 4

The Township will need to prepare a conceptual site plan to understand the land area requirements for annually composting nearly 11,000 cubic yards of non-woody waste (leaves and grass) and mulching 16,000 cubic yards of woody waste. In preparing the conceptual site plan, key assumptions may include the following:

- Facility will need year-round composting capabilities to accommodate material collected;
- The composting process takes about four- to-six months;
- Six month storage capacity is needed for curing the finished compost; 50 percent volume reduction via composting can be assumed.
- Woody material will be stockpiled and ground into a mulch product; frequency of grinding operations will be determined by how much space is available at the new composting site;
- Composting facilities are regulated and permitted by PADEP and must contain environmental and operational controls. More information on yard waste facility permitting requirements are located on PADEP's website at <https://www.dep.pa.gov/Business/Land/Waste/Recycling/Composting/Pages/Facility-Permitting-Requirements.aspx>.

Appendix B includes an example composting facility site plan.

Additional operational space is needed for stockpiling incoming material and screening finished compost. Windrow composting system operations can generally process material in two six-month cycles each year. Additional details and considerations of a windrow composting system include:

- **Access Control** – This includes the use of gates, establishing hours of operation, and staffing the facility to control or eliminate unauthorized facility use and placement of contaminated material;
- **Budgeting** – Planning and budgeting for capital costs of equipment, personnel, and technical assistance;

- **Acceptance of Commercial Feedstocks** – Evaluate capacity to accept commercial and landscaper materials, with conditions for accepting clean contaminant-free material;
- **Marketing Plan** – A plan should be developed for how the finished compost and mulch products produced will be distributed or sold to provide some revenue for the facility.
- **Implementation of Tip Fees** – Will tipping fees be assessed to facility users that drop-off materials; charging tip fees for residents’ use of a facility is likely not acceptable; however, the Township may opt to charge commercial haulers or landscapers to use the site;

A windrow composting facility would require the Township to invest in some specialized equipment in order to process materials. This equipment is summarized in **Table 4** along with some manufacturers that can supply the equipment.

Table 4. Windrow Composting Equipment

Equipment	Purpose	Manufacturer	Cost Range
Horizontal Grinder	Grind woody materials	Diamond Z, Vermeer, Morbark,	\$800,000 to \$1,000,000
Trommel Screen	Screen finished compost	McCloskey, Komptech, Doppstadt, Vermeer, Terex	\$200,000 to \$300,000
Windrow Turner	Turn compost windrows	Self-Propelled Straddle – Wildcat, Scarab, Komptech, Backhus	\$300,000 to \$500,000
Front-End Loader	Move and organize material; construct windrows	Caterpillar, Volvo, John Deere	\$200,000 to \$300,000

Location

The Reedy Road Site has been proposed by the Township as the new drop-off site and/or compost facility. This site is located next to the Township’s waste water treatment plant. The total area of the proposed site is 3.8 acres. Of the total, thirty percent of the site has a slope of three to five percent, which is only marginally adequate for drop-off or compost operations and would require regrading. The remainder of the site has a slope between nine to 15 percent, which would require extensive grading to make suitable for a composting facility. After visiting the Reedy Road Site, SCS does not believe this site can adequately accommodate the needs of the Township to manage yard waste, particularly if operations were to be expanded to include composting and mulching of materials. A site would likely require a minimum land area of five acres (the bigger, the better) to accommodate material receiving, screening, processing,



Reedy Road – Potential new yard waste management site

curing, and stockpiling of materials, maintenance building, office, and sales area. SCS recommends that the Township explore other possible locations and sites to establish a yard waste drop-off and composting facility. Sites for consideration should meet the following criteria:

- **Central Location** – A yard waste management facility should be centrally located in a place that provides easy and convenient access to a significant portion of the Township’s population;
- **Few Neighbors** – Although the location of the yard waste drop-off facility should provide easy access to residents, the site should be somewhat remote so that there are few or no immediate neighbors that might be impacted by operations of the facility.
- **Significant Buffer** – It is recommended that a yard waste composting facility have a significant natural buffer in place to minimize the impacts of the drop-off facility to the surrounding neighborhood.
- **Access to Transportation Infrastructure** – A yard waste drop-off facility should be located adjacent or near main transportation routes in the Township to facilitate the movement of material to the site and the final products to markets.

EXAMPLE COMPOST PROGRAMS

Millfair Compost

The Millfair Compost Site in Erie County serves as an example for Spring Township to look to in further developing their composting program and site. Although located in the northwest part of the state, it serves an area with similar demographics and receives and processes the same types of materials that Spring Township receives. Millfair Compost has operated for the last 15 years under a partnership between Fairview Township and Millcreek Township. Perhaps a similar arrangement could be established between Spring Township, Sinking Spring Borough, Lower Heidelberg Township, and Wyomissing Borough to provide for a regional solution to organics management.

Millfair Compost produces compost, mulch, and soil products from leaf and yard waste brought to the site. Staffing consists of one full time supervisor and six to seven part time employees. Millfair composting staff have extensive experience managing composting operations. Their staff have knowledge and experience with how to start and operate a compost facility. This includes securing grant funding, establishing operational procedures, managing budgets, sourcing feedstock, implementing an efficient and effective point-of-sale system, maintaining a positive public image, being a good neighbor, and understanding competition, among other things. They have expressed a willingness to assist other municipalities in their efforts to develop their composting programs. More information about Millfair Compost is available at <https://www.millcreektownship.com/158/Millfair-Compost-Recycling-Center>.

Arborganic Acres

Arborganic Acres is a privately owned and operated on-farm composting facility located in Pottstown in Montgomery County. In addition to taking in leaves, brush, yard waste, wood chips and manure, they also accept food waste. Arborganic Acres serves residential and commercial customers. Their tip fees range from \$10.00 to \$30.00/cubic yard by volume for car loads to small trailer loads; and for larger customers \$26.00 to \$42.00 per ton by weight. Arborganic Acres offers six compost products, including three types of mulch and three types of compost and topsoil. These products cost

from \$28.00 to \$40.00 per cubic yard. More information about Arborganic Acres is available at <http://arborganicacres.com>.

Swatara Township

Swatara Township established a composting facility in 2003 through a PADEP recycling grant. The Township accept leaves, branches and brush (up to 20”), garden waste, and stumps. They do not accept grass, sod, branches greater than 20”, lumber, or construction debris. Only Township residents may use the facility and residents must be issued a permit prior to using the site. Individual permits are linked to specific vehicles and are non-transferable. The fee to obtain a permit is \$30 annually or residents may purchase a daily permit for \$8. Landscaping and other commercial companies are also allowed to purchase permits to use the facility at an annual rate of \$395 or a daily rate of \$35.00. Mulch and leaf compost is available to residents free of charge. More information about the Swatara Township composting facility is available at <https://www.swataratwp.com/highway-department/pages/composting-facility>.

5 CONCLUSIONS

Spring Township is in a unique position with the opportunity to modify their yard waste management program with the anticipated closure of the Yerger Boulevard yard waste drop-off site. In addition to continuing the Township's mulching program, processing leaves, grass clippings, and other garden residue into compost provides an opportunity for the Township to provide a more local solution to yard waste management by producing compost. Compost is often sought-after product that could be made available to residents or sold to commercial companies and landscapers, which may provide a revenue source to offset the additional costs of operating a composting facility.

Processing yard waste into compost may also provide an opening for the Township to pursue the diversion and processing of other organic materials such as food scraps and biosolids. Although a careful and extensive analysis of the feasibility of diverting and composting food scraps and biosolids is necessary, a composting facility that is set-up to potentially receive these types of materials may facilitate their diversion in the future.

The Township Board of Supervisors (BOS) should evaluate interest in expanding the Township's yard waste drop-off program to include composting. Key to assessing BOS's interest in pursuing composting is whether Township residents would support the program. If there is interest and engagement in composting from the general public, another key hurdle to assess is the cost of operating a composting facility and whether a suitable site can be identified and developed.

SCS recommends that if there is interest among residents and the BOS to pursue composting that a full composting feasibility study be commissioned. This detailed analysis should include understanding the market the facility would serve, materials to process, costs of establishing a facility, and location of a suitable composting site. One of the most significant barrier is to identify a composting facility location that is suitable for operations. A site that is of significant size, centrally located, with few neighbors, and has access to major transportation routes is of chief importance when exploring sites.



Appendix A
Municipal Recycling Requirements for Act 101



Appendix B
Example Composting Facility Site Plan