



December 14, 2001

Mr. David Modricker
Public Works Director
Ferguson Township
3147 Research Drive
State College, PA 16801

Subject: Assessing Feasibility of Establishing a Regional Yard Waste Management Facility in Centre County

Dear Dave:

This letter is to provide Ferguson Township with the results of R.W. Beck's efforts to assess the feasibility of developing, implementing and promoting a regional yard waste management facility to supplement the State College Borough composting site in Centre County.

College and Ferguson Townships are both mandated to recycle leaf waste under the Municipal Waste Planning, Recycling and Waste Reduction Act of 1988 (Act 101). Harris Township, with a population of under 5,000 as of the 2000 Census, is not. Given the state's new goal of 35 percent recycling by 2003, however, the PA Department of Environmental Protection (DEP) is encouraging counties and municipalities to recycle more materials. It should be noted that all three municipalities are already collecting yard waste and diverting it from disposal, but according to a 2000 survey conducted by Centre Region Council of Governments (CRCOG), the material from these three municipalities is not being composted but simply delivered to alternate sites; College Township delivers its material to a private property, Ferguson Township stockpiles it at the municipal building, and Harris Township delivers it to a private farm. Having the ability to manage these materials through a formal composting program would enable these municipalities to ensure effective management of the material, making it possible to expand the program through heavier promotion and by possibly including more materials.

PLANNING AND IMPLEMENTING A REGIONAL YARD WASTE COMPOSTING SITE FOR FERGUSON, COLLEGE AND HARRIS TOWNSHIPS

This report assumes the following:

- In 1997, 1998 and 1999, municipal crews in College, Ferguson and Harris Townships collected an average of 11,557 cubic yards of residential yard waste per year. Materials collected include leaf waste and brush, but not grass. Volume has remained steady since

a large spike in 1996 due to storm damage in Ferguson Township. Unless additional materials, such as grass, are included, or there are further efforts to encourage residents to set out materials, volume is expected to stay within the 11,000 to 12,000 cubic yard range.

- Material collected from residents is being composted informally—that is, it is not being managed specifically for composting—in different locations by each municipality.

To assist the Ferguson Township in assessing the need for and what is required to establish a yard waste management facility for Ferguson, College and Harris Townships, R.W. Beck is providing the following:

- Estimated composting/processing area required.
- Physical requirements for a yard waste management facility.
- Implementation factors and estimated costs.

Throughout this report you will find references to the ***Municipal Yard Waste Composting Reference Manual (Composting Manual-1991)***. The Township may have received a copy of this manual during its initial distribution shortly after its completion. If you cannot locate a copy in your office, please let me know and I will be happy to help you obtain one.

YARD WASTE VOLUMES

As noted above, the volume of yard waste collected from College, Ferguson and Harris Townships has been holding steady since 1997. Materials in the three Townships are collected by municipal crews, and composted informally at locations established in each municipality. Most of the material is collected in the fall, though some materials are also collected in the spring.

Table 1 presents the total acres required for an active composting area based on a maximum of 3,000 cubic yards per acre, as required in the ***Guidelines for Yard Waste Composting Facilities*** issued by the Pennsylvania Department of Environmental Protection (DEP).

TABLE 1
ACREAGE REQUIRED FOR ACTIVE COMPOSTING
REGIONAL COMPOSTING SITE

Municipality	Total Volume	Acreage Required*
1999	11,625	3.88
1998	11,793	3.93
1997	11,253	3.75
1996	16,385	5.46
1995	6,492	2.16

*Assumes 3,000 cubic yards per acre

Table 1 indicates that a minimum of four acres is required for the active composting area alone, based on the volumes of material received over the period since 1997. An additional acre would be needed (at a minimum) for staging and storage, as well as at least a 50-foot buffer zone. The additional area needed, based on these minimum requirements, is approximately 4.1 acres, thus doubling the area needed to establish a new site. It is probably best to assume that an area of close to ten acres would be best for a composting site to service the three municipalities, as the additional space would permit some room for expansion if needed.

LOCATION OF COMPOST SITE

DEP's ***Guidelines for Yard Waste Composting Facilities*** specify that composting operations, including storage, composting and curing, shall not take place in the following areas unless the operator takes special precautions and obtains written authorization from the Department:

- In a 100-year flood plain
- In or within 300 feet of an exceptional value wetland
- In or within 100 feet of a wetland other than an exceptional value wetland
- Within 100 feet of a sinkhole or area draining into a sinkhole
- Within 300 feet measured horizontally from an occupied dwelling unless the owner has provided a written waiver consenting to the facility being closer than 300 feet
- Within 50 feet of a property line, unless the operator demonstrates that only curing of compost is occurring within that distance
- Within 300 feet of a water source
- Within 3.3 feet of a regional groundwater water table
- Within 100 feet of a perennial stream

In addition, access to the site must be controlled, so the site must be in a location where such control is possible. Vehicle access points must be gated or protected by some other barrier. Sites with natural barriers or those that are somewhat remote are preferable because they are less visible and therefore less prone to be entered by unauthorized persons, and generally less likely to cause problems because of proximity to occupied dwellings or businesses.

None of the existing locations where leaves are being deposited appears to be suitable for a regional composting site for College, Ferguson and Harris Townships. Harris Township has been delivering its yard waste to Tait Farm on Rt. 322, which is at the extreme eastern end of the area, and this would be more inconvenient to Ferguson and the northern portion of College Township. Ferguson Township has been managing the material on property at the municipal building. College Township has been delivering its yard waste to a private property on Brush Valley Road, which probably would be inconvenient for Ferguson Township.

Ferguson Township has been suggested as the municipality to host a second regional composting site in Centre County. While the Township has identified a potential location on land adjacent to the PSU Golf Course, it should be noted that nothing in Ferguson

Township is currently zoned to permit composting. Also, while this potential site would be convenient for Ferguson Township, it appears that it may not be very convenient for much of College or Harris Townships.

It should be noted here that another option to consider is expanding the State College Borough composting site that currently serves the Borough and Patton Township. This site may actually be the most convenient site for all municipalities involved, as it can be accessed easily from the Mt. Nittany Expressway (Rt. 322) by exiting onto Rt. 322 Business (Atherton Street). The site is not far from this exchange, and is located outside the main business district so traffic is not a great problem.

IMPLEMENTING AND OPERATING A YARD WASTE MANAGEMENT SITE

In order to establish a new regional compost site in Ferguson or one of the other municipalities, the host municipality or entity responsible for the site must submit a Yard Waste Composting Facility Application Form that provides the information required by DEP for site approval. The applicant must demonstrate that siting and operational requirements will be met.

Table 2 illustrates the estimated cost to develop a new site to serve Ferguson, College, and Harris Townships. These are the costs provided by State College Borough to develop its current site.

**TABLE 2
ESTIMATED COST TO DEVELOP NEW COMPOSTING SITE**

Item	Total Cost	DEP (90%)	Cost to Municipalities (10% match)
Stone to level site	\$60,000	\$54,000	\$6,000
Pole building	\$25,000	\$22,500	\$2,500
Fence	\$5,000	\$4,500	\$500
Electric	\$5,000	\$4,500	\$500
Facility sign	\$2,500	\$2,250	\$250
Entrance road	\$6,000	\$5,400	\$600
Loader	\$96,499	\$86,849	\$9,650
Compost turner	\$60,950	\$54,855	\$6,095
Compost Royer	\$56,900	\$51,210	\$5,690
Trommel screen	\$125,490	\$112,941	\$12,549
Compost site improvements	\$215,834	\$194,251	\$21,583
TOTALS	\$659,173	\$593,256	\$65,917

The cost for a regional site in Ferguson Township may vary depending on site requirements and the equipment desired. It may be possible to share equipment with State College Borough by paying a fee to use it when needed, rather than purchasing every piece of equipment.

Table 3 illustrates the estimated cost to operate a regional composting facility. The cost per ton used is based on the experience of State College Borough, and it assumes composting of leaf waste only. The cost may vary if other materials such as grass or brush are included.

TABLE 3
ESTIMATED TONNAGE AND OPERATING COST
REGIONAL COMPOSTING SITE

Year	Total Volume	Estimated Tonnage*	Estimated Operating Cost**
1999	11,625	2,618	\$60,219.59
1998	11,793	2,656	\$61,089.86
1997	11,253	2,534	\$58,292.57
1996	16,385	3,690	\$84,877.25
1995	6,492	1,462	\$33,629.73

*Assumes 4.44 tons per cubic yard (based on Lehigh Co. experience)

**Assumes \$23.00 per ton (based on State College experience)

It appears that if the leaf volume levels remain consistent as they did from 1997 through 1999, the operating cost for a regional facility in Ferguson Township could be expected to be around \$60,000-\$61,000.

USE OF STATE COLLEGE BOROUGH COMPOSTING SITE

As noted above, the operating cost at the State College site is around \$23.00 per ton. If College, Ferguson and Harris Townships were to establish an agreement for use of this site, it may be expected to pay a rate per ton that would cover the Borough's costs. It should be noted, however, the per unit cost at the State College site may be reduced due to greater economies of scale; that is, when additional materials are added, costs will rise in some areas of operation, such as personnel time and fuel, but fixed costs such as insurance and employee benefits will remain the same, resulting in a lower rate per unit processed. It would be difficult to determine exactly what that cost would be, but it can probably be assumed that it will be a bit lower than the current cost. Transportation costs may be slightly higher to deliver materials to the State College site. An advantage is that Ferguson Township, as the most likely candidate for a second regional site in Centre County, would avoid the additional administrative cost to the Township for monitoring the site, additional wear and tear on local roads leading to the site, etc.

It should also be noted that DEP prefers that municipalities consider cooperative arrangements where possible, and gives priority to funding of cooperative programs. It would be advisable to meet with a representative from the Northcentral Regional office prior to proceeding with the planning of a new site to determine whether or not funding of such a site would be considered.

CONCLUSIONS

- Yard waste volume levels collected in College, Ferguson and Harris Townships appear to have leveled off and remained consistent from 1997 through 1999.
- An area of approximately ten acres should provide sufficient space for a composting site, including active composting area, staging area, storage, and buffer zone.
- Any site selected within the College, Ferguson and Harris Township area would need to meet the specifications set forth in DEP's ***Guidelines for Yard Waste Composting Facilities***.
- In order to establish a new regional compost site in Ferguson or one of the other municipalities, the host municipality or entity responsible for the site must submit a Yard Waste Composting Facility Application Form.
- The total cost to establish a new site, assuming purchase of all equipment (and not sharing equipment from State College site) would probably be in the \$650,000-\$700,000 range. A Section 902 Recycling Program Grant would cover 90 percent of the cost, and lease value of the property may be used toward the required 10 percent match.
- The cost to operate a site for College, Ferguson and Harris Townships, based on State College's experience, would be approximately \$60,000-\$61,000 annually.
- The cost to use the State College Borough site under an agreement may be expected to be a bit less for operational cost, though there may be slightly higher transportation cost.
- DEP gives priority to intermunicipal, cooperative projects.

RECOMMENDATIONS

- College, Ferguson and Harris Townships should discuss the potential for the use of the State College Borough site before making a decision to plan, build and operate a second site. An arrangement for use of this site is the preferred option.
- The Townships should also meet with DEP's Northcentral Regional office prior to moving forward on the planning of a new site to determine whether or not a site would be funded.
- If an arrangement cannot be reached with State College Borough and DEP will agree to consider funding:
 - A site of sufficient size (at least ten acres), zoned appropriately, that meets DEP's ***Guidelines for Yard Waste Composting Facilities***, must be selected.
 - A site design should be determined, and this design should be incorporated into the Yard Waste Composting Facility Application Form required under the DEP ***Guidelines***. This form should be submitted prior to any site development.
 - The DEP should be consulted concerning the approximate timing for the next Section 902 grant application period. This may not, however, make a difference if the municipalities are willing to pay for the entire cost of the facility development

and equipment up front, assuming that they will receive reimbursement during the next round of grants awarded.

- To meet the requirements of a Section 902 grant application, the municipalities would need to prepare and place an advertisement stating their intention concerning development of a site and equipment needed, and would also need to get quotes for any equipment to be purchased.

Given that there is already a site established in the region that could be expanded, it will probably be to the benefit of College, Ferguson and Harris Townships to at least explore use of the State College site and determine the potential for lower processing costs, reduced administration, and reduced traffic and wear and tear on local roads.

Sincerely,

Sandra L. Strauss
Environmental Analyst

cc: Kathleen Kilbane, SWANA
Carl Hursh, DEP
Joanne Shafer, Centre County
Cathy Prosek, Centre Region COG