



Recycling Technical Assistance Project # 576
Centre Region Council of Governments (COG),
Centre County
Regional Brush Collection

*Sponsored by the Pennsylvania Department of Environmental Protection
through the Pennsylvania State Association of Township Supervisors*

FINAL REPORT

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TABLE OF CONTENTS

1. STATEMENT OF THE PROBLEM	1
2. SUMMARY OF WORK COMPLETED.....	2
3. POSSIBLE SOLUTIONS	4
4. RECOMMENDATION	6

List of Appendices

Appendix A – Background Data and Information Request

Appendix B – Municipal Brush and Leaf Tonnage

Appendix C – Available Brush Collection Equipment

Appendix D – Municipal Responses

Appendix E – Pennsylvania Act 101 Leaf Waste Collection Requirements

TABLE OF CONTENTS

RECYCLING TECHNICAL ASSISTANCE PROJECT #576

CENTRE REGION COUNCIL OF GOVERNMENTS (COG), CENTRE COUNTY

REGIONAL BRUSH COLLECTION

1. STATEMENT OF THE PROBLEM

The Centre Regional Council of Governments (COG) would like to evaluate Act 101 and brush collection for the following five municipalities: State College Borough and the Townships of College, Harris, Patton and Ferguson. Act 101 defines leaf waste as leaves, garden residues, shrubbery, tree trimmings and similar material but not including grass clippings. Currently State College Borough and the Townships of College, Patton and Ferguson are mandated municipalities under Act 101 and offer residents at least monthly leaf waste collection. Harris Township is not mandated; however, offers seasonal leaf waste collection.



Leaf waste collection is handled by each municipality's public works department. Loose leaves are collected by a one-person vacuum truck, and brush is collected by two methods: 1) a chipper truck and 2) a grappler truck. Patton and Ferguson Townships have recently begun brush collection with the grappler truck and haul the brush to the compost facility for chipping. The majority of the brush is processed by the State College Borough compost operation now called GOH

Recycling Center (Glenn O'Hawbaker) in partnership with Patton Township or the University Area Joint Authority wastewater treatment and biosolids composting site.

The leaf waste collection service is much appreciated and heavily utilized by the residents. The five municipalities on average collect 7,700 tons of leaves and 2,130 tons of brush annually. Appendix B shows the Municipal Brush and Leaf Tonnages from 200-2014. Prior to 2013 the tonnages are based on a DEP conversion factor from cubic yards (size of the truck) to tonnage. However, in the second half of 2013 a scale was installed at the State College Borough Compost facility which explains the lower tonnage numbers appearing for Ferguson, Patton and State College Borough after 2013.

However, the service is not without its problems. Costs continue to rise and all operations experience problems with improperly prepared brush, extraordinary quantities at one location, or placement of items which are difficult to handle and expose municipal employees to injury. Tree trimming service companies also use this public service as a cost reduction method for their customers, which increases curbside quantities. Ideas of a regional brush collection program and/or contracting out services have been introduced as options for addressing these problems. Before pursuing these options, it seems prudent to gain a better understanding of the existing service and identify the strengths and weaknesses in order to know where to make the necessary changes and improvements.



All of the municipalities are interested in improving their leaf waste collection services to offer cost effective and useful services that not only comply with the State's recycling laws but continue to grow as there is heightened public interest in recycling and composting. Reduction of the leaf waste collection services is not an option for the municipalities at this time.

2. SUMMARY OF WORK COMPLETED

At the onset of the project, MSW Consultants issued Appendix A, a Background Data and Information Request to each of the five municipalities. The municipality responses can be found in Appendix D. As mentioned earlier, the historical tonnage information is included in Appendix B, and interestingly, Patton Township's average tonnage was equal to that of State College Borough even though Patton has 850 more homes. The amount of leaves and tree trimming waste is in direct proportion to the age of the canopies and the amount of materials that are disposed on homeowner land and never reach the collection program.

Additional brush collection information, from each of the municipalities, is summarized in Table 2-1 below. The majority of the brush is being processed at the state College Borough Compost facility at a special contract rate. A portion of the brush is being processed at the Hawbaker or UAJA sites at no cost to the municipality. The processing at these sites seems stable for the near future.

Table 2-1 Brush Program Statistics

	College Township	Ferguson Township	Harris Township	Patton Township	State College Borough	Totals
Number of Households	4,054	7,704	2,110	6,763	13,957	34,588
Program Cost *	\$43,955	\$99,600	\$10,000	\$58,000	\$132,500	\$344,055
Processing Cost	\$16,000	\$40,000		\$14,000		\$70,000
Annual Tonnage Collected	279	613	135	607	537	2,172
Cost per Household	\$14.79	\$18.12	\$4.74	\$10.65	\$9.49	\$11.97
Avg. Cost per Ton	\$214.55	\$227.57	\$74.00	\$118.64	\$246.82	\$190.66
Number of Service Days per Year	45	60	15	112	60	292
Number of Operating Hours per Year	360	480	120	896	480	2336
Avg. Cost per hour	\$122.10	\$207.50	\$83.33	\$64.73	\$276.04	\$147.28

* It should be noted that the Program cost did not include the capital cost for the equipment for College & Harris Townships. The cost did include labor and operating cost.

The MSW Consultants field observation team traveled to Centre County on May 4, 2015 and met with the CRCOG and the five municipalities. The team visually inspected the brush collection equipment and observed the crews collecting brush on their normal routes. Many of the piles of brush were not bundled and crews manually loaded them into the chipper. The data observed during the site visits is shown in Table 2-2.

Table 2-2 Site Visit Observations

Municipality Name	Pass bys	Collections	Setout %	Total Time (min)	Collection Time (min)	Avg Time per setout (min)
College Township	36	6	17%	38	17	2.83
Ferguson Township	9	4	44%	27	23	5.75
Patton Township	26	5	19%	15	8	1.60
Total	71	15	21%	80	48	3.20

The setouts and times to collect the brush are consistent with other related collection programs and this data will be helpful in comparing the current system to other potentially viable collection systems.



The field observations confirm that all of the municipalities provide great brush service to their homeowners and most offer the program between nine to twelve months of the year. Residents setout leaf waste at the curb on their designated collection days. Crews drive all the streets in the municipality and collect the setouts. If the setouts are too large or not correctly placed by the curb, they are tagged and not collected until properly setout.



With the exception of Patton and Ferguson Townships, who operate grapple trucks on some routes, all the municipal Departments of Public Works operate chippers to collect brush. These chippers are historically very expensive and dangerous to operate. A complete list of each municipality’s equipment for the brush collection program is included in Appendix C. In total, there are 11 chippers and two (2) grapple truck in the inventory. There are also 14 dump trucks, many of which are used

for other Public Work project task.

Brush collection is a very dangerous job especially chipping all the brush at the curb. Severe injuries can be caused by jerking tree limbs working their way into the chipper, punctures by limbs, and even dismemberment from being caught on tree limbs and dragged into the chipper. The municipalities reported that there were 21 brush collection injuries during the last seven (7) years. These injuries cost the municipalities \$129,300 and are recorded in Table 2-3.



Table 2-3 Injuries & Workman’s Compensation Claims

	Year (s)	Number of Injuries	Cost
College Township	2008 - 2014	4	
Ferguson Township	2011-2015	6	\$70,000 (1 injury)
Harris Township	No injuries reported		
Patton Township	No injuries reported		
State College Borough	2012-2015	11	\$59,300 (8 injuries)

MSW Consultants also reviewed the municipality’s public education programs. Table 2-4 illustrates the types of education each municipality provides to inform their residential customers about the brush collection program. From the amount of brush being collected, the program is highly successful and the education programs are working.

Table 2-4 Public Educational Programs

Type of Outreach	College Township	Ferguson Township	Harris Township	Patton Township	State College Borough
Website	x	x	x	x	x
Municipal Newsletter (electronic/print)	x	x	x	x	x
CCRRA Newsletter					x
Social Media			x		x
Door Hanger	x		x		x
CDT ad/other newspaper ad	x	x	x		

MSW Consultants also reviewed the definition of brush collection included in Act 101. “Brush,” while not specifically defined by Act 101 or its regulations, may be considered to be included in the Leaf waste definition under “shrubby, tree trimmings and similar materials” with the discretion of the local municipality. Land clearing debris, however, is not considered to fall under the definition of Leaf waste. Based on this interpretation, the local municipalities may not be required to collect brush under Act 101 (depending on how they interpret the definition of Leaf Waste under Act 101). The four (4) mandated participating municipalities in this study should review the updated Act 101 requirement language approved by DEP, presented as Appendix E, to ensure that their ordinances and practices are in compliance with the Act 101 requirements.

3. POSSIBLE SOLUTIONS

There are a couple of possible solutions to address the high cost of brush collection for the five municipalities. Each municipality has duplicate equipment that typically sits idle for at least half of each month, if not more. The municipalities could possibly share the specialized brush collection equipment. Potential issues regarding routes, maintenance schedules and funding replaces would have to be worked out in advance.

A second solution would be for one municipality to offer collection to a neighboring municipality. Issues related to payment for services or scheduling, especially if the collecting municipality becomes overwhelmed with other Public Work’s projects, would also have to be worked out in advance.

The last possible solution would be to explore contract opportunities with third party such as one of the UAJA, CRCOG contractor, or the Centre County Recycling & Refuse Authority (CCRRA).

The Centre Region Council of Government municipalities could contract with a third party for brush collection. Each municipality could sell or even trade their brush collection equipment that is not needed for other Public Work's projects to the third party or form a special arrangement for the third party to use the equipment. The third party could schedule the monthly collections and share the collection cost with the municipalities, based on a percentage of time to collect or tons collected. This solution could standardize brush collection scheduling and education across the region and possibly make brush collection more cost effective.

The estimated number of routes that would be required to collect brush from the total households in the five municipalities is shown in Table 4-1. It would require 2.72 routes per day operating 5 days per week to collect from the 20,982 households over a 10 month period.

Table 4-1 Regional CRCOG Brush Collection Route Estimates

Collection Type	Total HH served	Est Setout Rate	Est Service Time (min) (1)	Est Monthly Service Hours	Est Days per Month (2)	Number of Routes
Chipper	20982	18%	3.2	201.43	33.57	1.68
Grapple	20982	3%	11.9	124.84	20.81	1.04
Total						2.72

(1) Estimated based on field observations and includes travel time from stop to stop.

(2) Estimated based on 6 hours per day for service time and 3 hours per day for pre, post, and dump time

The analysis of the cost is hindered by the fact that not all the municipalities are calculating their cost using the same methods. Capital cost has not been calculated in this analysis because not all the municipalities supplied their capital cost data. Table 4-2 shows the cost to operate the routes estimated in Table 4-1, and is based on industry standards over a 10 month period. Comparing the total cost for a regional system as shown in Table 4-2 to the total cost for the current system as shown in Table 2-1 shows an \$349,435 per year increase in cost. Of importance is the fact that there is a wide discrepancy in the cost for each municipality to provide the brush collection service. A regional program would divide the cost and all residents would pay the same price.

Table 4-2 Regional CRCOG Brush Collection Cost

Collection Type	Number of Routes	Annual Labor Cost (1)	Annual Fuel Cost (2)	Annual Maintenance Cost (3)	Annual Tire Cost (4)	Overhead Cost (5)	Total Cost
Chipper	2	\$246,400	\$12,900	\$18,260	\$6,640	\$85,260	\$369,460
Grapple	1	\$123,200	\$6,450	\$9,130	\$3,320	\$42,630	\$184,730
Dump	2	\$123,200	\$12,900	\$18,260	\$6,640	\$48,300	\$209,300
Total (6)	3	\$492,800	\$32,250	\$45,650	\$16,600	\$176,190	\$763,490

(1) Labor cost is calculated at \$35 per loaded labor hour: Chipper=2 Emp; Grapple=2 Emp; Dump=1 Emp

(2) Annual Fuel Cost calculated at \$32 per day for 10 months

(3) Annual Maintenance based on industry avg: Chipper = \$11,000; Grapple = \$24,000; Dump = \$8,000

(4) Annual Tire Cost based on industry avg of \$3,320 for 6 wheel truck

(5) Overhead Cost based on industry standard of 35% of Operating Cost

(6) It should be noted that the total cost does not include any capital equipment cost. The cost did include labor, operating, and overhead cost.

The issue of employee injury and Workman's Compensation claims is an important one. Employers work hard to find, train, and keep a good workforce. Losing employees to injury can be very disruptive to employee morale and retention. Therefore, it is imperative that employers do everything that they can do to reduce employee injuries. Many municipalities outside of the Centre County region operate rearload trucks to collect brush. These trucks are safer for crews to operate and do reduce the risk of injury. However injuries still can occur as operators can be struck or punctured by sharp tree limbs during the loading process.

If a third party took over the brush collection they might consider purchasing a rearload truck and reduce the number of chippers. Rearload trucks can be loaded quicker than chippers unless the limbs are too large in length or diameter. Those limbs need to be handled by a grapple truck.

4. RECOMMENDATIONS

MSW Consultants offers the following recommendations for Center Region COG brush collection activities.

4.1 SHORT-TERM

From a short-term perspective, the COG could do the following:

1. Review program guidelines and procedures to work towards consistency throughout the region. This will help with education programs that can apply to all residents.
2. Promote and educate residents on proper brush and leaf preparation methods regionally.
3. Consider advertising information on brush and leaf regionally. Since costs are shared it should result in lower costs.
4. Educate the commercial tree trimming companies about the township guidelines. This is area where consistent practices would be easier for those businesses to understand.

4.2 MID-TERM

From a mid-term perspective, the COG could do the following:

1. Each municipality should consider a fee for bulk brush collection when the pile is unreasonable in size to complete in the 20 minutes timeframe, i.e. a whole large tree taken down. State College Borough charges their residents for 'extra' brush piles.
2. Municipalities should consider sharing the specialized brush collection equipment. Sharing the grapples system across the five member could improve worker safety and reduce workman's compensation cost. The region could consider developing a program where capital equipment is shared. COGs Park and Rec, UAJA, a municipality or other entity could possibly all host the equipment and the group could develop a shared cost method, schedule, etc. This could be applicable for other type of equipment used by Public Works too, such as storm drain vacuums.

4.3 LONG-TERM

From a long-term perspective, the COG could look to a third party provider for brush collection reducing the brush collection inventory and capital cost and possibly making the brush collection system for the region more cost effective. The COGs Park and Rec, UAJA, a single municipality or other entity such as the Centre County Recycling & Refuse Authority could provide a standardized collection to the region.

APPENDIX A
BACKGROUND DATA AND INFORMATION
REQUEST

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CRCOG for the Brush Recycling Technical Assistance Study

Background Data and Information Request

1. Provide a summary, for each of the five municipalities (note where equipment, staff and/or facilities are shared), of:
 - a. Provide a copy of current brush set-out and drop-off allowances and a copy of each municipal ordinances/regulations
 - b. The type, number, processing capacity and approximate age of brush collection and processing equipment
 - c. The number of staff assigned to brush collection, the percent of their time dedicated to brush collection and processing, and the weeks per year where brush collection and/or processing is conducted
 - d. A summary list of the approximate number and types of injuries that have occurred with brush handling over the past several years and workman's compensation expenses related to brush collection
 - e. An approximate annual cost of staff, and of equipment maintenance/operations/repairs dedicated to brush
 - f. An approximate route map of brush collections and frequency
 - g. The location (map and address) showing the drop-off sites and staging areas for brush, and brush drop-off acceptance rules
 - h. Confirmation of the processing site(s) and location(s) for brush
 - i. Details on how the final processed brush (e.g. mulch, compost, etc.) is used or distributed
 - j. A summary of how the public and businesses are educated in brush set-out rules, dropoff sites and allowances, and final product pickup, and in any fees charged for brush service or for final product distribution.
 - k. Provide an estimate of annual cubic yards of brush collected (or tonnage) for each participating municipality
 - l. An estimate of the approximate quantity (or percentage) of annual brush that comes from commercial trimming service companies, if brush drop-off is allowed from trimming companies, how origin of the brush is confirmed to be from the municipality (or if is not restricted to municipality clients) , and if any fees are charged
 - m. How the brush programs are funded and paid for (including intermunicipal cooperation or payments) currently
2. Any initial thoughts or preferences in how CRCOG municipalities (incl. SCB) would like to see a regional brush program develop

APPENDIX B

MUNICIPAL BRUSH AND LEAF TONNAGE

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Appendix B Municipal Brush and Leaf Tonnages from 2006 – 2014

Year	College Township		Ferguson Township		Harris Township		Patton Township		State College Borough	
	Leaf	Brush	Leaf	Brush	Leaf	Brush	Leaf	Brush	Leaf	Brush
2006	578	261	1455	504	398.5	132.25	2751	365		
2007	540	210	1130	328	417	98	2126	168		
2008	263	219	1282	426	518	118	2728	225	2880	590.69
2009	853	468	1461	1166	698	244	3338	1836	2810.4	920.25
2010	657	346	1325	663	638	114	2831	677	3176.7	434.25
2011	752	239	1522	618	558	119	2521	715	2735.93	374.75
2012	884	270	1580	660	577	97	2550	585	2678.13	373.26
2013	725	231	1082	735	553	162	2427	463	1056	491.25
2014	859	271	795	421	724	132	1253	428		279
Annual Average	679	279	1,292	613	565	135	2,503	607	2,556	495
Avg Annual	442.49	182.11	359.26	170.52	568.88	136.16	1,044.78	253.35	1,296.90	251.03

Appendix B Program Cost per Household

	College Township	Ferguson Township	Harris Township	Patton Township	State College Borough	Total
Number of Households	3,069	7,195	1,985	4,791	3,942	20,982
Program Cost	\$ 43,955	\$ 65,577	\$ 10,000	\$ 173,737	\$ 132,500	\$ 425,769
Annual Tonnage Collected	279	613	135	607	495	2,130
Cost per Household	\$ 14.32	\$ 9.11	\$ 5.04	\$ 36.26	\$ 33.61	\$ 20.29
Avg Cost per Ton	\$ 157.29	\$ 106.90	\$ 74.00	\$ 286.27	\$ 267.80	\$ 199.92

Number of Households Serviced

	Township	Township	Township	Patton Township	Borough	Total
Number of Households	3069	7195	1985	4791	3942	20982
Number of Service Days per Year	45	14	15	112	60	246
Number of Operating Hours per Year	360	112	120	896	480	1968
Avg Cost per hour	\$ 122.10	\$ 585.51	\$ 83.33	\$ 193.90	\$ 276.04	\$ 216.35

45 days based on 9 months (1 week/month)
 14 days based on 1x/month and 1 extra day in April & Oct
 15 days based on estimated 3 weeks of brush collection annually
 112 days based on 1x/month and enhanced Spring and fall collection, assuming pickup occurs every work day during enhanced collection
 1-3 service days, based on call-in, up to 50 wks per year

Appendix C
 Educational Programs

Type of Outreach	College Township	Ferguson Township	Harris Township	Patton Township	State College Borough
Website	x	x	x	X	x
Municipal Newsletter (electronic/print)	x	x	x	X	x
CCRRA Newsletter					x
Social Media			x		x
Door Hanger	x		x		x
CDT ad/other newspaper ad	x	x	x		
UAJA Literature		x			
GOH Literature		x			

Report
 Year and Cost (if available) per Municipality

	Year(s)	Number of Injuries	Cost	Number of Employee Hours
College Township	2008, 2010, 2014 (2)	4		
Ferguson Township	2011-2015	6	\$70,000 (1 injury)	
Harris Township	No injuries reported			
Patton Township	No injuries reported			
State College Borough	2012-2015	11	\$59,300 (8 injuries)	

Appendix D
Available Equipment

Equipment	Year	Purchase Cost	Municipality
Bandit 250 Chipper (12" diameter)	2008	\$39,300	College Township
Bandit 250 Chipper (12" diameter)	2010	\$33,800	College Township
2 - 10 cu. yd. chip boxes		\$6,270	College Township
Freightliner w/chip box	2006	\$109,400	College Township
International Dump Truck	2006	\$103,800	College Township
Fort T-tag Dump Truck	2008	\$53,300	College Township
Fort T-tag Dump Truck	2009	\$55,500	College Township
Bandit 250			Patton Township
Bandit 255XP			Patton Township
Bob Cat E35 (Mini Excavator)			Patton Township
Ford F550	2015		Patton Township
International 7400	2008		Patton Township
International 7400	2008		Patton Township
John Deere	2012		Patton Township
Brush Bandit 250XP (pull behind chipper)	2000		Ferguson Township
Brush Bandit 1590XP (pull behind chipper)	2010		Ferguson Township
Vermeer BCA1800A (pull behind chipper)	2004		Ferguson Township
Ford F550 Truck	2011		Ferguson Township
Ford F550 Super Duty Dump Truck			Ferguson Township
Ford F550 Super Duty Dump Truck - Terra Star			Ferguson Township
International Single Axle Dump Truck			Ferguson Township

Project #576
 Centre Region COG
 Tonnage Data

International Single Axle Dump Truck			Ferguson Township
International Single Axle Dump Truck			Ferguson Township
Peterson Rear Steer Freightliner Grappler Truck	2015		Ferguson Township
Woodchuck WC/ 17 Brush Chipper	1997		Harris Township
Woodchuck Hyroller 1200 Brush Chipper	2005		Harris Township
Ford F550 w/mounted 12 cu yd box	1996		Harris Township
Freightliner w/25 cu yd box	2009		Harris Township
Woodchuck Chipper	1996		State College Borough
Brush Bandit Chipper	2006		State College Borough
International Forestry Truck	2012		State College Borough

Report

Regional CCRRA Brush Collection Routes Estimates

Collection Type	Total HH served	Est Setout Rate	Est Service Time (min) (1)	Est Monthly Service Hours	Est Days per Month (2)	Number of Routes
Chipper	20982	18%	3.2	201.43	33.57	1.68
Grapple	20982	3%	11.9	124.84	20.81	1.04
Total						2.72

(1) Estimated based on field observations and includes travel time from stop to stop.

(2) Estimated based on 6 hours per day for service time and 3 hours per day for pre, post, and dump time

Regional CCRRA Brush Collection Route Cost

Type	Routes	Cost	(10 Mos)	Maintenance	Cost (10Mos)	Cost (3)	Total Cost
Est Cost		\$ 50.00	\$ 32.00			35%	
Chipper	2	\$ 52,000	\$ 13,760	\$ 18,260	\$ 5,511	\$ 31,336	\$ 120,867
Grapple	1	\$ 26,000	\$ 6,880	\$ 9,130	\$ 2,756	\$ 15,668	\$ 60,434
Dump	2	\$ 52,000	\$ 13,760	\$ 18,260	\$ 5,511	\$ 31,336	\$ 120,867
Total	3	\$ 78,000	\$ 34,400	\$ 45,650	\$ 13,778	\$ 78,340	\$ 302,168

(1) Annual Maintenance based on industry avg: Chipper = \$11,000; Grapple = \$24,000; Dump = \$8,000

(2) Annual Tire Cost based on industry avg of \$3,320 for 6 wheel truck

(3) Overhead Cost based on industry standard of 30% of Operating Cost

APPENDIX C

AVAILABLE BRUSH COLLECTION EQUIPMENT

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Appendix C Available Brush Collection Equipment

Equipment	Year	Purchase Cost	Municipality
Bandit 250 Chipper (12" diameter)	2008	\$39,300	College Township
Bandit 250 Chipper (12" diameter)	2010	\$33,800	College Township
2 - 10 cu. yd. chip boxes		\$6,270	College Township
Freightliner w/chip box	2006	\$109,400	College Township
International Dump Truck	2006	\$103,800	College Township
Fort T-tag Dump Truck	2008	\$53,300	College Township
Fort T-tag Dump Truck	2009	\$55,500	College Township
Bandit 250			Patton Township
Bandit 255XP			Patton Township
Bob Cat E35 (Mini Excavator)			Patton Township
Ford F550	2015		Patton Township
International 7400	2008		Patton Township
International 7400	2008		Patton Township
John Deere	2012		Patton Township
Brush Bandit 250XP (pull behind chipper)	2000		Ferguson Township
Brush Bandit 1590XP (pull behind chipper)	2010		Ferguson Township
Vermeer BCA1800A (pull behind chipper)	2004		Ferguson Township
Ford F550 Truck	2011		Ferguson Township
Ford F550 Super Duty Dump Truck			Ferguson Township
Ford F550 Super Duty Dump Truck - Terra Star			Ferguson Township
International Single Axle Dump Truck			Ferguson Township
International Single Axle Dump Truck			Ferguson Township
International Single Axle Dump Truck			Ferguson Township
Peterson Rear Steer Freightliner Grappler Truck	2015		Ferguson Township
Woodchuck WC/ 17 Brush Chipper	1997		Harris Township
Woodchuck Hyroller 1200 Brush Chipper	2005		Harris Township
Ford F550 w/mounted 12 cu yd box	1996		Harris Township
Freightliner w/25 cu yd box	2009		Harris Township
Woodchuck Chipper	1996		State College Borough
Brush Bandit Chipper	2006		State College Borough
International Forestry Truck	2012		State College Borough

Green shading indicates Chipper Equipment
Blue shading indicates Grapple Truck

APPENDIX D

MUNICIPAL RESPONSES

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Project #576
 Centre Region COG
 Municipal Responses

Questions	College Township	Harris Township	Patton Township	State College Borough	Ferguson Township	
	Number of Households	4054	2110	6763	13957	7704
1 a	Ordinance	Yes	Yes	Yes	Yes	Yes
b	Number of Trucks	4	2	3	1	6
	Number of Chippers	2	2	2	2	3
	Number of Grapple Trucks	0	0	1	0	1
	Avg Age of Trucks	2007.25	2002.5	2010.33	2012	
	Avg Age of Chippers	2009	2001		2002.5	2004.666667
	Avg Age of Grapple Trucks	0	0	2013	0	2015
c	Number of Crews	2	2		1	Varies 3-4
	Number of Staff	6	4		2	Varies 8-10
d	Number of WC Injuries	4	0	1	11	6
	Brush Collection Operating Cost	\$43,955.00	\$10,000 (staff costs)		1.2013: a.Hours – 2070 b.Equipment – \$39,500 2.2014: a.Hours – 1950 b.Equipment – \$35,000	Operations Labor: \$57,000 Operations Equipment: \$43,000 Maintenance Parts and Mechanic Labor for Repairs \$ 6,000 Maintenance Crew Labor: \$23,000 Fuel Estimate \$ 9,300 Brush Collection Equipment Operation & Maintenance Cost 2011-\$14,666.84 2012-\$12,195.10 2013-\$14,677.20 Total average annual O&M: \$13,846.38
	Brush Collection Capital Cost	\$401,370.00				
f	Collection frequency	Monthly	Twice per Year	Monthly	Weekly, call-in basis	Monthly
	Number of Collection Days per Month	5	15	1st Monday of each month with increased Spring and Fall collections	1-3 service days, based on call-in	1 except 2 days per month in April and October
	Number of Months per year	9		12	Up to 50 weeks per year	12
g	Are Drop-off Sites available	No	No		No	
h	Processing Site	Hawbaker or UAJA	Dumped in Nittany View Park and UAJA collects		GOH Recycling Center 110 Hawbaker Industrial Drive State College, PA 16803	GOH 2145 N Atherton St, State College, PA 16803
i	How is processed brush used	Mulch Chips	UAJA uses chip s for compost program		Single-ground mulch material. Borough sells in bulk or delivered to residents upon pre-payment; Hawbaker manages retail sales from their location.	Final processed brush is used by State College Borough, GOH or an end user picking the end product up. Wood chips are also staged at the municipal building located at 3147 Research Drive, State College, PA 16801 for processing, pick up and use by UAJA for compost.

Project #576
 Centre Region COG
 Municipal Responses

Questions		College Township	Harris Township	Patton Township	State College Borough	Ferguson Township
j	Educational Program	Web Site	Website	website	CCRRA and borough newsletters	Township web site
		Township newsletter	E-newsletter	Collection Schedule Sheet	Website	Electronic newsletters & print newsletters,
		Doorhangers	Social Media (Facebook)		Social Media	UAJA literature
		CDT ad	Doorhangers		Hang Tags	GOH literature
			CDT ad			Past advertisements in the newspaper.
k	Cubic Yards or tons collected Avg	279.44				Provided to Pam Adams annually
	2006	261				
	2007	210				
	2008	219				
	2009	468		4,710 cu yd brush chips		
	2010	346		2,632 cu yd unchipped brush, 117 cu yd, 2,592 cu yd brush chips		
	2011	239				
	2012	270		2,340 cu yd		
	2013	231	162	1,467 cu yd, 252 cu yd unchipped		
	2014	271		428.12 tons	Residential: 223 tons, Commercial: 56 tons, Tree Crew: 279 tons	420 tons of wood chips
		The above numbers are in tons	The above numbers are in tons	The above numbers are in tons	The above numbers are in tons	The above numbers are in tons
l	Commercial Generation of Brush	0	n/a		Contractors are responsible for disposal of the material; may dispose at Hawbaker's site for a charge	
m	How is Brush Collection funded	General fund	General fund		Refuse Collection Fund operating budget of the State College Borough	General Fund. Equipment is purchased with 90% grant funding.
		Road Machinery Fund				
		DEP Grants				
2	Ideas for regional Brush Collection	Brush collection will increase over time	Uniform Education			Consider impacts other than costs: fees, staff cuts, differences between current programs and regional program offerings
		Have a backlog of other PW projects	Regional Drop-off locations			
		Very Dangerous job				

APPENDIX E
PENNSYLVANIA'S ACT 101 LEAF WASTE
REQUIREMENTS

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PENNSYLVANIA'S ACT 101 LEAF WASTE COLLECTION REQUIREMENTS

Pennsylvania's Act 101 of 1988, the Municipal Waste Planning, Recycling and Waste Reduction Act, Section 1501(c)(1)(ii) and (iii), requires persons in mandated municipalities to separate leaf waste from other municipal waste generated at residential, commercial, municipal and institutional establishments. "Leaf waste" is defined in the Act and its regulations as "Leaves, garden residues, shrubbery and tree trimmings, and similar material, but not including grass clippings."

"Brush," while not specifically defined by Act 101 or its regulations, may be considered to be included in the Leaf waste definition under "shrubbery, tree trimmings and similar materials" with the discretion of the local municipality. Land clearing debris, however, is not considered to fall under the definition of Leaf waste.

Source separated leaf waste, as with other recyclable materials designated by municipal ordinances, is to be collected at least once per month as set forth in Act 101 Section 1501(c)(2) and (3). Leaf waste must be processed at PA DEP-approved composting facilities. Act 101 mandated municipalities with traditional leaf collection programs operating only on a fall and winter schedule are not in compliance with monthly collection required by the Act.

To ensure that persons in Act 101 mandated municipalities have leaf waste collection or access to approved leaf waste composting facilities each month of the year, PA DEP established the following standards. Municipalities in Centre County required to meet the standards include the Boroughs of Bellefonte and State College and the Townships of College, Ferguson, and Patton.

Act 101 mandated municipalities desiring to establish leaf waste collection programs in compliance with the Act must, as a minimum:

1. Require by ordinance that leaf waste defined as "leaves, garden residues, shrubbery and tree trimmings, and other similar material" are specified for collection from residences and commercial, municipal and institutional establishments; and
2. Establish a scheduled day, at least once per month, when leaf waste is collected from residences; or, as an alternate:
 - a. Establish a scheduled day, not less than twice per year and preferably in the spring and fall, when leaf waste is collected from residences; and,
 - b. Facilitate a drop-off location or other collection alternative approved by PA DEP that allows persons in the municipality to deposit leaf waste at least once per month for the purposes of composting or mulching. The leaf waste drop-off may be located within the municipality, or in a neighboring municipality or a private sector establishment provided that, 1) an agreement is in place to utilize that location; and, 2) the municipality keeps residents and commercial, municipal and institutional establishments informed of the option at least once every six months.
3. Ensure that commercial, institutional and municipal establishments generating leaf waste have collection service.

Municipalities are encouraged to manage source separated Christmas trees as leaf waste for processing at PA DEP-approved composting facilities.