

**RECYCLING TECHNICAL ASSISTANCE
PROJECT #585**

**CLEARFIELD COUNTY SOLID WASTE AUTHORITY
CLEARFIELD COUNTY**

Feasibility of Transitioning Multi-Location Drop-off Sites to a Centralized Convenience Center Clearfield County

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PROJECT CONSULTANT

Nestor Resources, Inc.
Valencia, PA 16059

www.nestorresources.com

CONTACT

Michele Nestor, President
724-898-3489

michele@nestorresources.com



Nestor Resources, Inc.

Purpose of the Project

Clearfield County is located in northcentral Pennsylvania along the Interstate 80 corridor. A few clusters of densely populated areas exist, but the remainder of the County's broad land mass is primarily rural with few homes per square mile. A network of private waste collection firms provides service throughout the County. Access to curbside collection of recyclables is limited. To fill the service void, the Clearfield County Solid Waste Authority (CCSWA) operates a countywide recycling drop-off collection program.

In past years, the program was supported almost fully through fees assessed on every ton of Clearfield County municipal waste disposed at designated facilities. Approximately ten years ago, court rulings eliminated the County's ability to use the existing framework to collect those fees. Consequently, since that time, CCSWA has relied on a combination of reserve funds, a variety of state grants, contributions, and material sales. Most recently, the CCSWA was able to secure funding through two negotiated landfill contracts. However, these new disposal agreements offer considerably less money than those in the past and are insufficient to cover the full program costs.

A review of CCSWA's budget and finances demonstrate that expenditures continue to exceed revenues. Therefore, CCSWA initiated this project to explore ways to reduce overhead wherever possible. To accomplish this, CCSWA wished to explore the potential for consolidation and relocation of the current drop-off sites. CCSWA hoped that such a transition would successfully reduce costs enough to avoid eliminating the collection service. To examine these possibilities, the Clearfield County Recycling Coordinator retained a consultant through the Recycling Technical Assistance Program.

Approach and Methodology

To initiate the project the Director of the CCSWA and Nestor Resources, Inc. discussed the current status of the program in relationship to what was at the time pending litigation challenging the negotiated landfill agreements. At that time, the consultant outlined the types of data that would be useful in evaluating the program.

Nestor Resources reviewed the financial reviews of CCSWA's overall operation and the individual sites. In addition, data from the drop-off activity reports were evaluated.

A series of additional conference calls ensued to discuss a number of operating conditions and options available for consideration. New sources of funding were explored along with the potential to introduce added materials, including municipal waste.

The findings and recommendations of these efforts were compiled to draft this final report. The conclusions were also presented to the Board of Directors of the CCSWA. The report contains the background information utilized along with explanations and justification for the suggested options.

Essential Elements

To establish the current and future potential of CCSWA's program the consultant reviewed a number of different data sets. Some of these are service related and include logistics, performance per site, materials collected, service frequency, and equipment. Others are strictly financial and concern sources and amounts of revenue along with the origin of specific expenditures. Each was viewed in relationship to how it would be affected by potential changes in the program. Following is a description of the current conditions.

COLLECTION SERVICES PROVIDED BY CCSWA

Countywide Drop-off Collection Network

Eighteen remote drop-off locations are located throughout the County. The sites operate 24 hours per day 7 days per week.

In addition to the 18 remote drop-off locations, CCSWA also operates a Collection Center for hard to manage materials. This site is located on the grounds of the Clearfield County Jail, in Clearfield, which is not only the county seat but also the heart of county life. Operating hours are more limited at this location. The site is currently open on Mondays and Wednesdays 5pm-8pm, on Fridays 1pm-3pm and 5pm-8pm, and on Saturdays 9am-3pm.

Assuming a ten-mile radius from each site as a service area, the current configuration of the drop-off collection system clearly serves most if not all of the County's population. Figure 1 shows the locations of the sites and the service areas.

Materials Accepted at Remote Sites

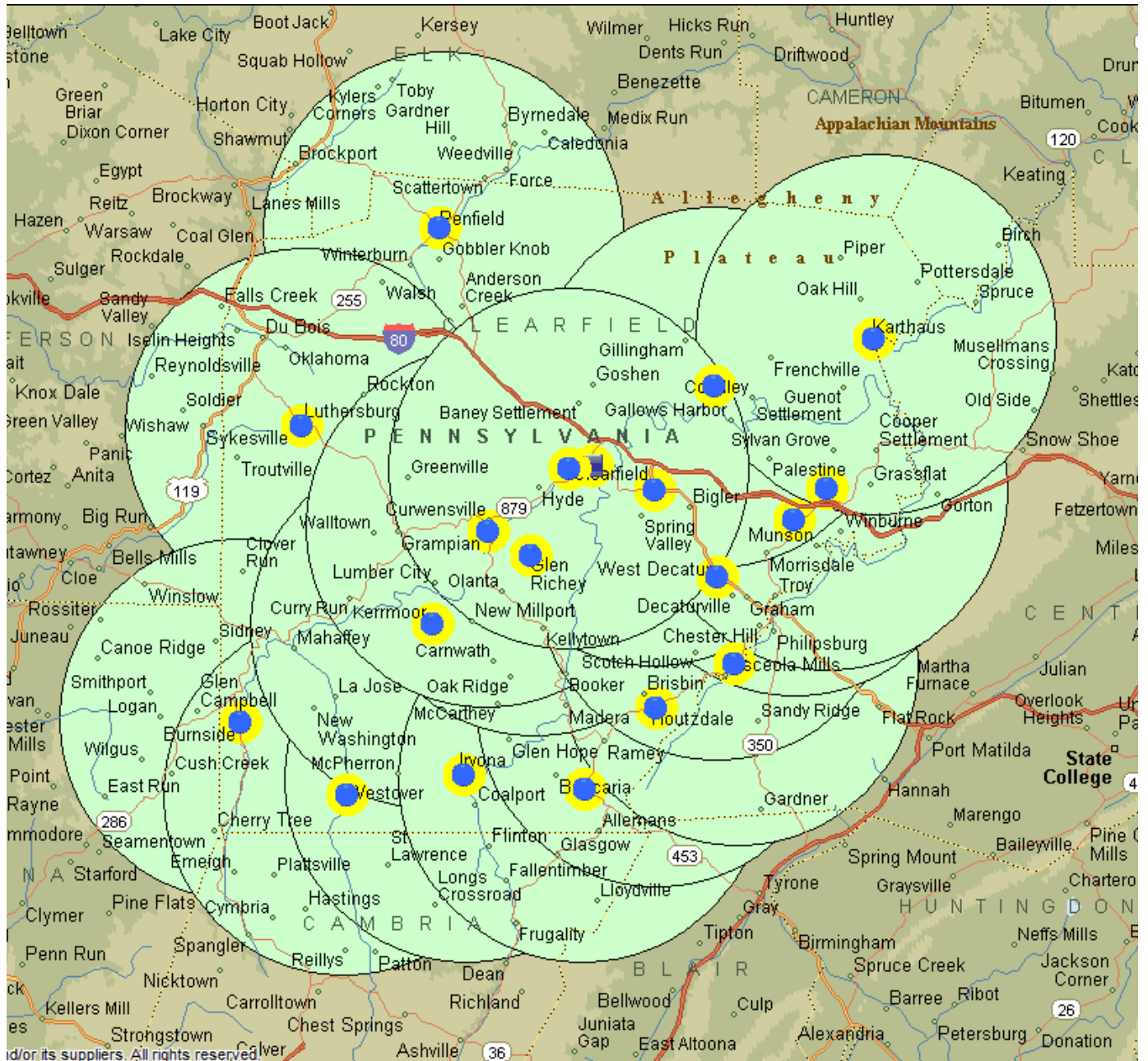
The primary materials collected are aluminum, glass and bimetal containers, as well as newspaper. These are accepted at each of the eighteen sites. In addition to the core materials, cardboard and mixed papers are accepted at Curwensville, Houtzdale, Kylertown, Luthersburg, Osceola Mills, West Decatur, and Woodland. Because Clearfield Borough has a curbside collection program, only newspaper is collected at that location.

Plastics are not collected.

Materials Accepted at the Collection Center

The Collection Center serves a different purpose than the remote recycling drop-off sites. Instead of bottles, cans and paper, the Center provides Clearfield County residents with an outlet for larger items not always collected at the curb. These include appliances, tires, and discarded electronic devices. Used motor oil, oil filters, and spent antifreeze also are accepted at the Center.

Figure 1 CCSWA Drop-off Collection Sites and Service Area



Labor

CCSWA currently contracts with a private hauler to service the drop-off collection sites. Inmates from the Clearfield County Prison are utilized as the workforce at the Central Collection Center.

Equipment

CCSWA owns the containers used at the drop-off collection sites. These were purchased using Act 101, Section 902 grant funding. It does not own vehicles to service the sites.

OTHER SERVICES PROVIDED BY CCSWA

Besides collecting materials, CCSWA is responsible for a number of other services and programs.

Clearfield County Municipal Solid Waste Management Plan

Most significant of all of the duties of the Authority, CCSWA is designated as the agent to implement the Clearfield County Municipal Solid Waste plan on behalf of the Clearfield County Commissioners. As such, CCSWA employs a Recycling Coordinator, who also functions as the County's Planning Director. The duties and associated cost for the position are shared proportionately between CCSWA and the County.

Implementation of the Plan involves a significant amount of administrative tasks, including data management, and reporting, regulatory compliance, and public outreach.

Enforcement Officer

Somewhat related to Plan implementation, but on a much broader scale, CCSWA employs an Enforcement Officer. Current funding only allows for a part-time employee; however, the demand warrants full time attention to the issues of illegal dumping and related infractions against waste management and public health and safety ordinances.

Public Education

An important and ongoing responsibility of CCSWA is public education. It has been shown that increasing public awareness improves recycling performance, reduces contamination, and deters illegal dumping. CCSWA only has the resources to maintain a small budget for this purpose. It attempts to secure grant funding to support these efforts when, periodically, it is made available from PADEP.

FUNDING

Obviously, CCSWA cannot offer these services without incurring costs. The Authority has a variety of revenue streams to offset those expenses. Following is a brief description of each source of revenue.

Grants

A significant portion of CCSWA's operating funds is derived from PADEP, Act 101, Section 900 grants. These grants are made possible by the \$2.00 per ton fees paid by landfills and deposited into the state's Recycling Fund. CCSWA benefits from four separate categories of grants

supported by this program. Section 903 provides funding for up to 50% of the Recycling Coordinator's eligible salary and expenses. Section 901 is a periodic grant that covers planning and studies. Section 902 is a competitive grant and is determined by the number and quality of applications as well as the available money in the Recycling Fund at any given time. This grant program has assisted CCSWA in purchasing equipment for the drop-off program. Finally, the Section 904 grants are calculated on tons of materials recycled. The formula has changed over time based on the availability of funds each year.

Landfill Contributions

In conjunction with disposal capacity agreements secured during the development of the Clearfield County Municipal Solid Waste Management Plan, disposal facilities provide a variety of support for local programs.

Fees

CCSWA has always relied on fees assessed on each ton of Clearfield County municipal waste disposed. The fees were collected by landfills from local haulers who delivered waste from Clearfield County to their facilities. These fees provided the bulk of the operating capital upon which the budgets for many of the current services were designed. Collection of the fees also provided the Authority with the ability to accrue reserve funds to cover emergency expenses.

Although the original mandatory method of assessment was challenged and deemed unacceptable by the courts, CCSWA was able to negotiate voluntary fees as part of its new capacity agreements. The funds generated by these fees falls considerably short of the former revenue stream.

In-kind Services

Another result of the recent negotiations for disposal capacity was an offer of in-kind services from one of the facilities. The in-kind services were specifically for the hauling and processing of materials from the drop-off collection program. Although a help in reducing CCSWA's overhead, the equivalent in-kind value is less than the amount necessary to service the current configuration of drop-off sites.

Fines

As a mechanism to deter illegal dumping in the County, CCSWA employs an Enforcement Officer who has the ability to issue citations for violations. Allowable penalties for infractions under PA County Code are small in comparison to the environmental damage and cost of clean-ups. Therefore, the fines are a very tiny portion of CCSWA's budget.

User Fees

Most of CCSWA's services have been provided at no cost to the public. Fees technically are assessed once a resident's limit on specific items like tires or white goods has been exceeded. However, the limits are set rather high and how the quantities are tracked is not necessarily easy or accurate. For residents fees apply when the 4 tire limit is exceeded and when a resident exceeds the limit for 2 Freon containing appliances. All businesses are required to pay for Freon removal and tires. A small sum is shown in CCSWA's budget for that revenue.

Municipal Contributions

Local municipalities that conduct seasonal clean-ups benefit from CCSWA's services. These communities collect tires, white goods, etc. and then deliver the materials to CCSWA's central collection center. Some of the municipalities make a token contribution of \$1 per tire. However, it is only half the actual cost charged to CCSWA to send the tires to a processor.

Material Rebates & Sales

CCSWA has no agreements in place to market the recyclable materials collected at the drop-off sites. Lack of local processors willing to handle the full spectrum of materials collected at each site and in each container is lacking. For a time, CCSWA was receiving a small rebate from an e-waste processor for handling electronic devices banned from disposal. However, the current lack of markets for CRT's has made it difficult for the Authority to find a vendor willing to handle the items even without a rebate. Moving forward rebates are not anticipated in the near future.

FINANCIAL CONCERNS

A series of tables have been included to illustrate within reasonable estimates the status of CCSWA's operations.

Table 1 shows an overview of CCSWA's budgeted and projected actual costs and revenue for 2015. Table 2 offers a detailed look at revenue sources and Table 3 shows expenditures in more detail.

Although the programs and services were originally designed with more than sufficient income to cover overhead fully, circumstances have since changed. Therefore, CCSWA has been experiencing budgetary shortfalls in recent years. The situation has caused CCSWA to draw from its emergency reserve funds for a number of years. If the Authority proceeds without change, those funds will be depleted in the immediate future. This would result in the closure of the drop-off sites along with the shutdown of all other programs.

Table 1 CCSWA Budget Overview

CLEARFIELD COUNTY SOLID WASTE AUTHORITY	2015 BUDGET	2015 BUDGET Anticipated Actuals
TOTAL YEARLY INCOME	\$ 59,985.00	\$ 36,134.49
TOTAL YEARLY EXPENSES	\$ 143,868.00	\$ 112,213.50
REMAINING BALANCE/ (DEFICIT)	\$ (83,883.00)	\$ (76,079.01)
RESERVED BALANCE		
<i>Starting Reserved Balance</i>	\$ 115,013.80	\$ 115,013.80
<i>Budget Shortfall</i>	\$ (83,883.00)	\$ (76,079.01)
<i>Ending Reserved Balance</i>	\$ 31,130.80	\$ 38,934.79

Table 2 CCSWA Revenue Detail

DETAIL OF INCOME:		
<i>Interest Income</i>	\$ 100.00	\$ 96.00
<i>Other Income</i>	\$ 27,500.00	\$
<i>(903) Coordinator Recycling Grant</i>	\$ 13,250.00	\$ 13,800.49
<i>(902) Equipment & Implementation Recycling Grant</i>	\$ 4,800.00	
<i>(904) Performance Recycling Grant</i>	\$ 5,435.00	\$ 15,000.00
<i>Voluntary Administrative Fees</i>	\$ 4,500.00	\$ 4,758.00
<i>Enforcement Fine Income</i>	\$ 50.00	
<i>Contributions from Municipalities</i>	\$ 350.00	\$ 540.00
<i>White Goods Revenue</i>	\$ 2,500.00	\$ 640.00
<i>Tire Revenue</i>	\$ 1,500.00	\$ 1,300.00
<i>Electronics Revenue</i>	\$ -	
<i>In-Kind Services Donated for Drop-off Program \$34,000 not shown</i>	\$	\$

Table 3 CCSWA Expenditure Detail

DETAIL OF EXPENSES		
Salaries and Fringes & County Overhead Charges	\$ 85,318.00	\$ 45,000.00
General Office Administration and Operation	\$ 3,500.00	\$ 2,954.63
Program Expenses (see detail below)	\$ 55,050.00	\$ 64,258.87
Capital Expense- Vehicle		
Program Expenses		
<i>Public Education</i>	\$ 4,800.00	\$ 2,645.00
<i>Recycling Drop-off Program does not include an extra 34,000 of in kind service</i>	\$ 35,000.00	\$ 49,000.00
<i>Permanent Site</i>	\$ 14,000.00	\$ 12,065.00
<i>Illegal Dump Clean-up</i>		\$ 32.75
<i>Surveillance Equipment</i>		\$ 323.76
<i>Vehicle Maintenance</i>	\$ 1,250.00	\$ 192.36
<i>HHW/Electronics Collection</i>	\$ -	

Observations and Recommendations

For CCSWA to survive, changes must be not only considered, but also implemented. Nestor Resources focused on solutions that would have the greatest impact on reducing costs while

maintaining the broadest array of services. Because the drop-off recycling program is the most visible and most costly service offered, reducing overhead there was considered the greatest priority

CONDITIONS THAT IMPACT THE BUDGET

A number of conditions contribute to the costs of a drop off recycling program. These include:

- Time
- Distance
- Labor
- Fuel
- Weight/Volume
- Storage Capacity
- Service Frequency
- Processing
- Contamination
- Market Value of the Materials

To determine to what extent each had an impact on CCSWA's program Nestor resources examined historical data from the Authority. This included the actual weight collected from each site on a material-by-material basis. Onsite storage capacity allotted for each material was provided along with the number of hauls per site.

To supplement CCSWA's data, Nestor Resources contacted the current contractor who cooperated in sharing actual performance statistics for time, distance, etc. to service each site, along with actual costs on a per haul and per site basis.

Table 4 shows the capacity available per material per container at each site. It also includes the total annual container capacity per material located throughout the system. Finally, it lists the average weight of each material as well as the volume of material hauled each month. Table 4 illustrates the impact of weight density to volume when materials share a single container. Standard conversion rates based on pounds per cubic yard were used to determine the amount of container capacity consumed by a material when each container was serviced. By comparing newspapers and steel and aluminum cans, it is easy to see how weight and volume differ.

Throughout an average month CCSWA drop-off sites collect almost five tons of newsprint. The same sites yield almost eight tons of aluminum and steel cans. One ton of newsprint is the equivalent of 4.5 cyds. On the other hand, one ton of mixed metal cans is the equivalent of approximately 16 cyds depending on the mix. The compartment size allotted to aluminum cans per each container is 6 cyds. Therefore, based on the weight collected, aluminum cans were hauled roughly twenty times per month.

This coincides rather closely with the number of hauls reported by Advanced Waste in Table 5. The extra four reported hauls per month are for the cardboard and mixed paper at select sites.

Because the newspapers are collected in the same container as the mixed cans, they were hauled at the same time whether or not the newspaper container was full. Newspapers are allotted 12 cyds per container.

The lower density of the cans means that although roughly five times the volume of cans than paper were collected, by weight there were not quite twice as many tons of cans as there was paper. Theoretically, each newspaper section of the container if full would weigh 2.66 tons. If hauled twenty times when full there should be fifty-three tons per month collected. However, since the mixed cans and newspapers were hauled together, the paper yielded less per haul than optimal. The same result is seen with glass, which is even denser than newsprint.

Table 4 Service Weight and Volume Comparison

Current Available Container Capacity per Loose Material	Colored Glass	Clear Glass	Newsprint	Steel & Aluminum Cans	Cardboard	Mixed Paper
	6cy	6cy	12cy	6cy	25cy	10cy
	Compartments = 30/35 cyds				Compartments = 35 cyds	
Total annual cyds all sites	45.64	182.76	257.18	1462.4	1112.2	375.75
Average total cyds per month all sites	3.8	15.23	21.43	121.87	92.68	31.31
Average total tons per month all sites	0.09	3.81	4.76	7.62	4.63	6.96

Advanced Disposal hauls 24 containers per month from CCSWA’s sites. Drivers logged 54 service hours completing these hauls or the average of 2.25 hours per load. Using Advanced Disposal’s haul rate of \$108 per hour, the cost to CCSWA is \$243per load. With each load less than optimally full, CCSWA is paying a higher cost for transporting materials, approximately \$209 per ton. Table 5 shows the cost breakdown per month and per year.

Table 5 Service Frequency and Associated Costs

Service	Hauls	Hours	Costs @ \$108 Per Hour
<i>Per Month</i>	24 Hauls	54 Hours	\$5,847
<i>Per Year</i>	286 Hauls	652 Hours	\$70,169

PRACTICAL IMPROVEMENTS

Time, distance, frequency of hauls and payload are important cost factors for drop-off collection programs. Decreasing the distance, time, and number of hauls, while increasing the tons per payload to the maximum allowable limit, is commonly the goal of program managers seeking to reduce costs.

This section discusses a number of common sense approaches to reducing cost, motivating participation, and increasing material recovery. Each requires minimal effort from CCSWA to attain promising results.

Current Site Configurations

Overall, when time and distance are considered from the point of service to the site and back, the differences between the sites are not significant enough to pinpoint a single site that has dramatic advantages or disadvantages over another. However, collectively, it is the number of sites that increase the hauling costs in a number of ways.

Each site is a duplication of services. A multi-compartmented container collects and stores materials between hauls. As demonstrated by the reported data, the material compartments do not fill at the same rate. Therefore, each container is hauled as soon as one of the compartments is full, regardless of the status of the other compartments. Each site is serviced at least once per year.

A solution to increasing payloads could be to segregate the materials into containers dedicated for each item. Alternatively segregate the materials with similar rates of accumulation and density into compartmentalized containers. Although this would ensure that each material was hauled only when its container was full, it presents a host of other issues.

First, space constraints exist at most locations. Therefore, multiple container placement would be a problem. In addition, more containers would require a serious capital outlay. Adding containers to every site would result in extra hauls because it would be reasonable to expect that each container would be serviced at least once per year to preserve material quality. Finally, having excess capacity at each site would be an invitation to illegal dumpers.

Consolidation of Services

In spite of the seeming drawbacks, designating containers for individual materials does have promise in the appropriate situation. CCSWA already owns enough equipment to segregate materials into separate containers, provided those containers were placed to receive materials at one centrally located collection point. This would reduce the number of containers needed in service. Each material would require one primary container and a number of boxes could be retained for switch outs. Each commodity would be hauled when full.

Table 6 shows the cost reductions that could be attained by transitioning to one central collection point. The anticipated savings are close to the equivalent value of the in-kind services provided by Advanced Disposal. This would render the collection program to be nearly cost free.

Table 6 Current vs. Proposed Service Frequency and Associated Costs

<i>Service</i>	Hauls	Hours	Costs @\$108 Per Hour
<i>Current Per Month</i>	24 Hauls	54 Hours	\$5,847
<i>Current Per Year</i>	286 Hauls	652 Hours	\$70,169
<i>Proposed Per Month</i>	10.5 Hauls	20.25 Hours	\$2,835
<i>Proposed Per Year</i>	126 Hauls	315 Hours	\$34,020

LOCATION

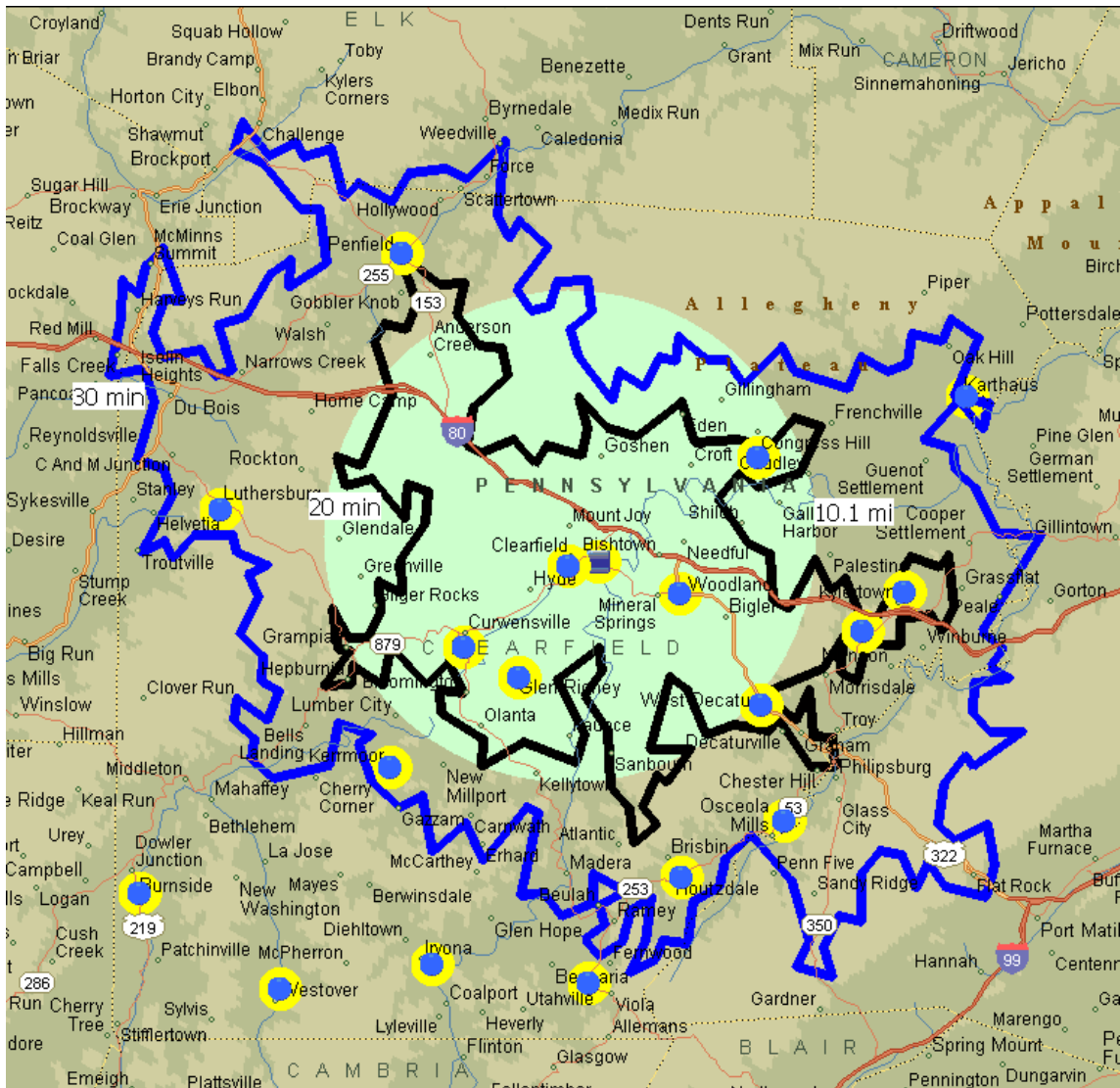
Because CCSWA already has access to a collection point for other materials, it makes sense to utilize this existing site as the drop-off program’s consolidation point. The added benefit of the existing site, which is near the County Correctional Facility, is that it comes with an affordable workforce, and one already familiar with providing services to CCSWA.

The consolidation of sites would mean that some residents would have to drive farther. However, the Correctional Facility is located in Clearfield, which is a traffic hub for shopping and other services and thus frequented by a majority of local folks.

Figure 2 shows the drive time and distance that could easily be serviced by the central collection point. Labels for the miles and or drive times are shown on the map.

- Six sites are within a ten mile radius of Clearfield
- Three sites are within a 20 minute drive to Clearfield
- Five sites are within a 30 minute drive to Clearfield
- Four sites exceed a 30 minute drive to Clearfield

Figure 2 Drive Times and Distances to CCSWA Central Collection Site



OTHER BENEFITS

Not only can a central collection point be monitored to ensure that hauls are performed only as needed, assuming that it would be supervised, it could reduce contamination. By segregating materials with reduced contamination, CCSWA may increase the quality of materials enough to realize some return on market resale value.

FEES FOR SERVICE

An important change that should coincide with the consolidation of sites is for CCSWA to charge for many of the services that in the past it had the luxury of providing free. These include collection of tires, white goods, bulky waste items, and e-waste. By working with a service provider that does not participate in a manufacturer's plan under the Covered Device Recycling Act CCSWA would be permitted to charge for all, not just some e-waste items. At the same time, CCSWA should eliminate the current allowable limits for each item and charge for every one.

FUTURE POTENTIAL

CCSWA may be able to transform the central collection center into a full-fledged convenience center in the future. To do so would mean a commitment to accepting a greater variety of recyclable materials. In addition, the center would serve as a drop-off point for bagged residential waste and potentially waste from remodeling activities. Fees of course would be in order for all services.

Because CCSWA will experience some challenges making the move from remote sites to a central point, it is recommended that all attention be given to ensuring the first move is a success. Once the central point is in operation, more consideration can be given to an expansion of services.

Conclusions and Recommendations

With the assistance of the Clearfield County Recycling Coordinator, several suggestions to evaluate costs and provide better services were offered to CCSWA. These included restructuring the drop-off site configuration, segregating materials for collection, and reducing the frequency of service. Rate adjustments including user fees were also suggested.

By implementing these changes, Nestor Resources is confident that CCSWA will be able to reduce its costs, entertain potential resale of its materials, and slow the draw down of its reserve funds. Sustain some level of recycling service to the citizens of Clearfield County.