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**Recycling Technical Assistance
Project # 478
City of Pittsburgh,
Allegheny County**

**Contract Options for
Recycling Commodity
Processing**

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Introduction

The Recycling Technical Assistance Program is sponsored in partnership by the Pennsylvania Department of Environmental Protection (DEP) through the Solid Waste Association of North America (SWANA), the Pennsylvania State Association of Township Supervisors (PSATS) and the Department of Community and Economic Development (DCED) Governor's Center for Local Government Services. Qualifying municipalities wishing to enhance their recycling, composting, and waste reduction programs are provided with professional support to assist them achieve their goals and objectives.

Nearing the expiration of its current recyclable materials processing contract, the City of Pittsburgh proactively sought Technical Assistance to develop updated terms and conditions that would protect the City from unforeseen market fluctuations. The former contract was a lucrative endeavor for the City due to a transition to single stream recycling and a positive recycling market. The impact of a downturn in the market during the current contract period raised concerns that the future contract would generate much less revenue and perhaps even result in significant net processing costs.

As the consultant selected to manage the project, Nestor Resources, Inc. is pleased to submit to the City of Pittsburgh our findings and recommendations. This report includes background data, resources and references, as well as explanations and justifications for the consultant's suggestions.

Background

People who live and work in the City of Pittsburgh have been recycling voluntarily for decades. Since the passage of Act 101 of 1988, the Municipal Waste Planning, Recycling and Waste Reduction Act, recycling in the City has been mandatory. The City meets both the population and density criteria in Act 101 that identifies those Pennsylvania municipalities required to establish, by ordinance, recycling programs. Residents that live in both single family detached or multi-family attached units are required to separate designated recyclable material from municipal waste that they generate. Pittsburgh utilizes its own equipment and personnel to collect these source separated recyclables from residents as well as from a variety of institutions such as local schools, government facilities, and civic organizations. Other commercial establishments, while mandated to recycle, are not serviced by the City and therefore must contract with the hauler of their choice for collection.

The City's program has evolved from a dual stream collection system in which participants separated their glass, metal and plastic bottles, jugs and cans from the waste stream and placed them in see-through blue and/or clear plastic bags and put their newspapers and other recyclable paper in brown paper bags or tied them with string. Today, the City promotes a single stream collection system in

which bottles, jugs, cans and mixed recyclable paper products are placed together in the blue or clear plastic bags and sorted at a mechanized facility. Blue bags are collected from the curb in twenty-five (25) cubic yard packer trucks.

Although the single stream system has presented some definite advantages to the City in terms of collection efficiencies and cost reductions, it has also limited the number of processors within a reasonable driving distance from the City that can handle the material. The City has always utilized a fixed price processing contract. The most recent contract provided the City with a profitable return. However, past experiences have not always been favorable. Some years have offered little if any return, and in many instances resulted in nothing but payments to the processor.

With current competition low, the City feared that it could fall victim to unscrupulous pricing and escalating operational costs. Therefore, it was crucial to include mechanisms for revenue sharing in its solicitation for processing to offset the actual cost of processing. The purpose of this project was to devise a mechanism that would fairly distribute revenues realized from the resale of recyclable materials between the City and the processor, and to also protect the City from poor operational practices.

Project Scope of Work

Task #1: Nestor Resources, Inc together with the City staff explored the current competitive processing options available within reasonable proximity to the City. To ensure a fair and competitive bid for the City, the consultant and City staff discussed a variety of terms and conditions that would encourage multiple bidders.

Task #2: Nestor Resources, Inc reviewed the current processing contract and compared it to alternative contractual mechanisms for materials processing. The consultant provided commentary on the pros and cons and the potential outcome of various approaches.

Task #3: Nestor Resources, Inc. reviewed historic data provided by the City including; material recovery weights to develop a composite index formula for use in the contract specifications. The consultant developed draft language for specific sections of the City's contract which were subsequently approved by the City's procurement and legal staff. The consultant provided projections of potential revenue and costs that could be expected with a certain components. Due to the proprietary nature of the contractual arrangements explored and selected by the City, much of this information was shared in dialogue and in private correspondence between the City and the consultant and thus is excluded from the report.

Task #4: The consultant presented to City staff the findings regarding the future contract potential for costs and revenue and explained the formula options. The

discussion focused on the risks and benefits of each scenario including performance issues with the contractor; manipulation of costs to the City; disincentives for recovery; and risk management.

Task # 5: Nestor Resources, Inc prepared and submitted to the Pennsylvania Department of Environmental Protection (PADEP) for review and comment, a draft project report, which summarized the consultant's findings and recommendations. Based on the PADEP's input, the consultant revised and finalized the report. Both the City and the Department were provided with the report in electronic format. In addition, a hard copy of the document was provided to the City.

Summary of Recommendations

The following is a summary of the consultant's findings and suggestions for the City of Pittsburgh:

- When municipal governments provide and/or pay for the recyclables collection services, particularly from its tax base, then sharing in the revenue makes perfect sense. The City of Pittsburgh falls into this category.
- Whichever type of revenue calculation selected, the City should be certain that all of the details are clearly defined in their agreements.
- Knowing the composition of a municipality's recyclable stream is important in single stream systems. The City of Pittsburgh has required physical sorts of random loads delivered to the MRF. In these composition sorts, calculating the volume contamination or residue is important to ensure the municipality a greater degree of cost control.
- How residue is allowed to factor into the commodity calculation can significantly impact the municipality's revenue received or payment expected. The City should establish this element in advance and ensure that residue has no monetary value in the rate calculation.
- If a fixed rate option is used, the City should build in some protection measures. Short term contracts with mutually renewable options are one way of safe guarding the jurisdiction and being fair to the contractor.
- In sliding scale agreements, the rates may be tied to published sources of market activity for the geographic region or on actual prices negotiated by the local processor. It is recommended that the City opt for published rates to ensure full disclosure and to provide an incentive to the local operator to obtain the best prices possible for the material delivered.

- A hybrid rate agreement includes components of fixed/flat rates and also the sliding scale approach. This is one of the fairest approaches to revenue sharing. It offers the MRF assurance that it can cover the cost of processing during the course of the contract. It also provides the municipality with a greater direct share of the revenues. The adjusted sliding rate is recommended for use by the City of Pittsburgh.

Sharing the Wealth

Material Recovery Facility (MRF) operators generally are responsible for finding markets for the materials which they process. In some MRF contracts, the revenues received from the sale of the recovered recyclables are kept by the MRF operator. This income supplements processing fee revenues and often helps to control costs for the MRF's customers. In other instances, the revenues received from the sale of the recovered recyclables are the sole revenue realized by the operator. Scrap dealers tend to operate under this scenario. Both public and private sector MRF's share in these practices.

Those who collect and/or transport the recyclables to the MRF may or may not receive a share of the recycling revenues realized by resale of the materials. When commercial haulers are paid for the recyclable materials delivered to MRF's, the typical result is lower collection costs to their customers. Therefore, in areas where municipalities contract for collection services, revenue sharing is often not a consideration. This is particularly true where residents are billed directly by the hauler for this service. The return to the municipality is reflected in higher collection fees paid by its residents and could effectively be considered an indirect tax. However, when municipal governments provide and/or pay for the recyclables collection services, particularly from its tax base, then sharing in the revenue makes perfect sense. The City of Pittsburgh falls into this category.

Know Your Product

When municipalities transport presorted materials to a MRF, opportunities exist to negotiate rates based on the actual weight of specific materials delivered. Today's MRF's are transitioning more and more to a single stream processing system. In these operations all materials including glass, plastic metals and paper are collected and delivered to the facility mixed together. They are then sorted mechanically at the MRF. In these programs, it is difficult to pin point the precise tonnages of each separate commodity delivered on any given day. Therefore, knowing the composition of a municipality's recyclable stream is important. This can be determined by a physical sort of random loads delivered to the MRF. Sorts should be conducted periodically during the life of a contract to provide an accurate accounting of a municipality's performance. In these composition sorts, calculating the volume of non recyclable contamination or residue is important. Establishing this figure in advance ensures the municipality a greater degree of cost control.

Available Contract Options

A variety of scenarios were explored to determine the best means for the City of Pittsburgh to potentially profit from its recycling activities and at a minimum control its costs. Contracts and agreements between MRF's and public and private sector parties were reviewed during the research. Components of these examples were evaluated for their impact on the City's program.

A few of the samples had straightforward language making it easy to calculate the outcome. Some offered formulas that on the surface appeared fair and advantageous, but had hidden marketing disincentives and risks. Others offered vague criteria and questionable sources to substantiate the market rates upon which revenues would be based.

Because many of the examples shared with the City during this project were considered proprietary in nature, they are not included in detail within this report. However, an overview of the basic types of agreements, along with comments on the pros and cons of each is provided. These range from rigid flat rate scenarios to others with complex formulas.

Fixed and Flat Rates

Too often, municipalities enter into processing contracts with an all or nothing approach. In other words, they ask for a fixed or flat rate in their processing contracts. Fixed rates offer a payback rate or processing fee based on separate commodities. Municipalities that collect material and deliver it presorted to the MRF are in a better position to negotiate such rates. Flat rates normally provide for one price regardless of the material. Municipalities that collect material commingled or single stream are typical candidates for this approach. This simple approach is easy to understand and to factor into budgetary projections. It rarely reflects the true value of the processed material at any point in time. Municipal officials have traditionally favored this scenario because the risks in this type of contract appear to be all on the processor.

The positive side of these agreements may shield some of the less than desirable aspects. Municipalities bear risk in this option also. When recyclables are purchased from the municipality for a set price or processed for a flat fee, the processor must factor in market fluctuations that are unpredictable at best in order to maintain his operation. Processing costs may be inflated to provide for a hedge in down times. Therefore, the municipality could be paying more than the operational costs would warrant. When a municipality is being paid a fixed rate, it could lose money if more favorable market conditions develop during the course of its contract. When a municipality is being paid a flat rate for all materials, it could lose money if one of the materials realizes a dramatic upturn. Alternatively, if prices plummet, the fixed or flat rate for purchasing materials or processing could be such to force a municipality's contractor into bankruptcy.

The City of Pittsburgh is no stranger to the last scenario. During the mid 1990's Prins Recycling entered into aggressive contracts with municipalities in New Jersey, New York, Massachusetts and Pennsylvania. These agreements promised big paybacks for the recyclables delivered. A rapid drop in the value of newsprint sent Prins into almost immediate financial distress. The company defaulted on its contracts. Pittsburgh, which was selling its recyclables to Prins for \$600,000 a year, was suddenly faced with an unbudgeted \$400,000 a year payment to haul the materials away.

When a fixed rate is used, municipalities should build in some protection measures. Short term contracts with mutually renewable options are one way of safe guarding the jurisdiction and being fair to the contractor.

Sliding Rates

Unlike fixed rate plans, some MRF's offer a sliding scale agreement. In this scenario, prices paid for each material increases or decreases in direct response to market fluctuations. How those rates are determined is important.

In some sliding scale agreements, the rates are tied to published sources of market activity for the geographic region. Common examples of these publications include *The Market Board: Yellow Sheet for the Chicago Market* and *The Secondary Materials Pricing by Region as published by Waste and Recycling News*. The prices shown in these publications are examples of trends in the marketplace. They do not necessarily reflect actual prices negotiated by the local processor. Nevertheless, these sources provide a benchmark and an indication of shifts in the value of certain materials. Using public indexes can in some cases serve as an incentive to the local operator to obtain the best prices possible for the material delivered.

MRF operators may offer to negotiate a sliding scale rate agreement based on the actual prices received for the materials which they process. This can be beneficial if the processor is aggressive in finding stable outlets and the best prices for all of the materials delivered by the municipality. It is not uncommon for high volume processors to command better rates than the general market index would indicate. However, processors that do not want to be bothered by certain commodities might devalue them simply by a lack of effort in finding suitable markets. This could result in both a loss of revenue to the municipality and in turn potentially higher disposal costs for processing residue. In contracts that utilize the processor's pricing, it is essential that the agreement provide for full disclosure. Municipalities should require with each payment, documentation (receipts, weigh slips, etc.) from the processor of the market outlets and revenue received for each commodity. Although the municipality may have to agree that the information is proprietary and not to be made public, reputable operators should have no issue with this request.

Many sliding scale agreements are based on a certain percentage of the rates quoted in the publications or by the processor. Others offer a change in price to the municipality when, based on these sources, the market trends upwards or downwards, by a certain predetermined percentage. Whichever the case, municipalities should be certain that these details are clearly defined in their agreements.

Adjusted Sliding Rates

A hybrid rate agreement includes components of fixed/flat rates and also the sliding scale approach. In this scenario, the MRF sets a flat processing fee for all material received. The processing fee is subsequently adjusted based on the composition and market prices for each commodity respectively. A greater percentage of the market price is allocated to the municipality and a lower percentage to the processor. When the market price results in a positive adjustment the municipality realizes a return on the sale of the recyclables. When the adjustment has a negative impact, the municipality pays the MRF for processing. This perhaps is one of the fairest approaches to revenue sharing. It offers the MRF assurance that it can cover the cost of processing during the course of the contract. It also provides the municipality with a greater direct share of the revenues.

The Residue Factor

How residue is allowed to factor into any commodity calculation can significantly impact the municipality's revenue received or payment expected. When the volume of residue is not fixed in advance in the agreement, it can provide the processor with a convenient outlet for materials that do not provide great revenue returns. This is particularly true when a monetary value is attached to residue, in other words a disposal cost. By designating these materials to be contamination, the processor can both avoid payouts on low value material and potentially profit from assessing a disposal fee on it. The City should establish its degree of contamination in its bid and contract specifications. Likewise it should assign a zero dollar value to residue in any calculation.

Establishing the Criteria

To prepare for the best revenue sharing terms for Pittsburgh, Nestor Resources, Inc. reviewed the historical recycling data provided by the City. Reported figures from the previous dual stream collection system as well as the current single stream system were compared to establish trends in growth and recovery. In addition, the reported figures were compared to national trends to determine similarities and any potential anomalies. The MRF's general assessment of the supposed composition of the City's recycling stream was compared to actual reported figures and other known single stream composition studies to see if there were

commonalities. Based on the available data, the known sources of material collected by the City, and results of previous physical sorts, the consultant determined the likely composition of the City of Pittsburgh's recycling stream.

With the composition established, the consultant applied historical and current pricing information to calculate high, medium and low cost models. The analysis was conducted on a variety of revenue sharing options. Models with and without values attached to residue were considered. Flat and fixed rates were explored. Local and regional market prices were injected into the formulas. As mentioned previously, one or more of the methods and formulas were considered proprietary by the sources willing to allow us to use them in our research. Therefore, the costing models are not shown in this report. The most favorable findings were made available to the City.

Conclusions

With few processors expressing an interest in receiving and processing the City's materials, care was taken to ensure that the City would not enter into an arrangement biased in favor of the contractor. Additionally, it was important to devise a formula that would not be viewed as prohibitive by the already limited number of contractors. Ultimately, Nestor Resources and the City staff came to the conclusion that a hybrid sliding rate system was in the best interest of the City. It was projected to offer the best possible opportunity for Pittsburgh to control processing costs while still realizing at least a portion of the recycling revenues, which it had experienced in the recent past. The formula and the language which was developed for the bid and contract specifications are shown in Appendix A.

Appendix A

CITY OF PITTSBURGH REVENUE SHARING TERMS

ADJUSTED BASE PRICE: The Contractor shall offer a fixed **BASE PRICE** which represents the fully burdened cost of processing the City of Pittsburgh’s recyclables per ton over the term of contract. The **BASE PRICE** represents a charge to the City and shall remain firm for the term of the contract.

COMPUTING THE ADJUSTED BASE PRICE:

City of Pittsburgh’s (COP) Composition Index =	
Aluminum	1.2%
Bi-Metal	9.1%
Glass	32.7%
PET	4.7%
HDPE	5.0%
Mixed Plastic #3-5	1.1%
OCC	1.3%
ONP	33.6 %
Mixed paper	2.3 %
Residue	9%

Using the COP **COMPOSITION INDEX (above)**, which is the historical material composition of an average ton of recyclables delivered by the City of Pittsburgh, a **COMPOSITE INDEX PRICE** will first be calculated for delivered recyclables on the average for each month of commodities INDEX prices using the following published indexes:

- 1.) For ONP, OCC and Mixed Paper, - *Market Board: Yellow Sheet for the Chicago Market*;
- 2.) For Glass, Aluminum, Bi-Metal, Plastics - *Secondary Materials Pricing for Region 2 New York (NE USA/Maritimes) as published by Waste and Recycling News*;
- 3.) Residue will have a fixed value of \$0

The Composite Index Price shall be computed as follows:

Composite Index Price = (Average of commodities prices each month) x Composite Index

The **ADJUSTED BASE PRICE** will be the **CITY’S SHARE** of the net price of the **COMPOSITE INDEX PRICE** minus the **BASE PRICE**. The Contractor will indicate the **CITY’S SHARE** of the net price as a fixed percentage over the term of the contract on the BID FORM. When the net is a negative number it will result in a payment of the **ADJUSTED BASE PRICE** by City to the Contractor. When the net is a positive number it will result in a payment of the **ADJUSTED BASE PRICE** by the Contractor to the City.

Adjusted Base Price = (Composite Index Price- Base Price) x (City’s percentage share)



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