



OFFICE OF THE CONTROLLER

CITY OF PHILADELPHIA PENNSYLVANIA

STREETS DEPARTMENT

**REVIEW OF
RECYCLING PROGRAM**

MAY 2005

**Jonathan A. Saidel
City Controller**



CITY OF PHILADELPHIA

OFFICE OF THE CONTROLLER

12th Floor, Municipal Services Bldg.
1401 John F. Kennedy Boulevard
Philadelphia, Pennsylvania 19102-1679
(215) 686-6680 FAX (215) 686-3832

JONATHAN A. SAIDEL

City Controller

ALBERT F. SCAPEROTTO

Deputy City Controller

May 27, 2005

Clarena I. W. Tolson, Commissioner
City of Philadelphia Department of Streets
7th Floor – Municipal Services Building
1401 John F. Kennedy Boulevard
Philadelphia, PA 19102-1676

Dear Commissioner Tolson:

The City Controller's Office, with the technical assistance of Robert S. Guzek & Associates, has reviewed the City of Philadelphia's Recycling Program pursuant to Section 6-400 (d) of the Home Rule Charter. This review was an objective and systematic examination of operations for the purpose of determining if the program is being operated: (1) in compliance with the applicable city ordinance, and (2) in an effective and efficient manner. A synopsis of the results of our work is provided in the executive summary to the report.

We discussed our findings and recommendations with your staff at an exit conference and included your written response to our comments as part of the report. Our recommendations have been numbered to facilitate tracking and follow-up in subsequent years. We believe that, if implemented by management, these recommendations would significantly enhance the compliance, effectiveness and efficiency of the Recycling Program.

We would like to express our thanks to the Department of Streets and its staff for the courtesy and cooperation displayed toward us during the conduct of our work.

Very truly yours,

JONATHAN A. SAIDEL

City Controller

cc: Honorable John F. Street, Mayor
Honorable Anna Verna, President
and Honorable Members of City Council
Members of the Mayor's Cabinet
David B. Robinson, Recycling Coordinator

Purpose

We reviewed the City of Philadelphia’s (City) Recycling Program for the purpose of determining if the program is being operated: (1) in compliance with the applicable city ordinance; and (2) in an effective and efficient manner.

Background

In 1987, City Council passed a Recycling Ordinance (Bill No. 1251-A), which set forth the legislative mandate for “... a mandatory system of source separation and recycling of all refuse and garbage collected by the City.” Philadelphia was the first major city in the nation to mandate recycling.

The City’s Recycling Ordinance stated that by 1991 at least 50 percent of the City’s total solid waste stream must be recycled. Based on the most recent Waste Composition Study conducted in 2000, the 50 percent goal was revised to a more reasonable and achievable rate of 35 percent - 40 percent.

The City is responsible for collecting solid waste at residences of six units or less and at small commercial establishments. For fiscal year 2004, the City collected 699,000 tons of solid curbside waste of which 44,000 tons were recycled reflecting a recycling diversion rate of approximately 6 percent.

A cooperative relationship has been established between the City’s Recycling Program and the Sanitation Division of the Streets Department. The City’s Recycling Program plans and coordinates the recycling effort while the Sanitation Division mans and equips recycling crews throughout the City.

Results In Brief

The City’s Recycling Program is not in compliance with numerous provisions of the City’s Recycling Ordinance. There are a number of qualitative key performance indicators, which can be used to evaluate compliance; however, the single most important indicator is the quantitative recycling diversion rate, which must increase to 35 percent - 40 percent from the current level of 6 percent.

Improving the recycling diversion rate will not only achieve compliance with the City’s Recycling Ordinance, but it will also result in significant annual economic benefit for the City. As a way of demonstrating the savings potential, we calculated (using 2004 data and assuming any increased costs would be offset by improved efficiencies and economic benefits) that for each one percent improvement the City can achieve in the diversion rate, approximately \$540,000 could be saved on an annual basis. As the diversion rate approaches 35 percent – 40 percent, the savings could potentially reach \$17,000,000 annually.

Recommendations

The achievement of these dramatic cost savings will require a number of operational changes in the City's Recycling Program. We have set forth a series of recommendations for improvement aimed at optimizing the effectiveness and efficiency of this important public service program.

- Expand the planned pilot incentive program, if it proves successful.
- Evaluate results of the pilot "Single Stream" collection program and if successful, expand it to the rest of the City.
- Continue the educational program for recycling.
- Require the City's Recycling Coordinator to make periodic progress reports to the Office of the Mayor, which needs to emphatically embrace and support the Recycling Program in Philadelphia.
- Consider the need to pursue changes in the Recycling Ordinance to make it more suitable and responsive to the current social and economic climate of Philadelphia.
- Increase the scope of materials subject to mandatory recycling as it becomes economically feasible to do so.
- Introduce a comprehensive enforcement program.
- Introduce weekly recycling collection to targeted areas of the City identified as potentially well suited to it.
- Evaluate use of additional processing sites for recycled material.
- Issue a quarterly recycling performance report.
- Prepare a detailed implementation plan for long and short term program goals and monitor performance.

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INTRODUCTION

BACKGROUND

In 1987, City Council of the City of Philadelphia (City) passed a Recycling Ordinance (Bill No. 1251-A) which set forth the legislative mandate for "... a mandatory system of source separation and recycling of all refuse and garbage collected in the City" Philadelphia was the first major city in the nation to mandate recycling.

Section (5) (a) (.3) of the Ordinance stated that by 1991, at least 50 percent of the City's total solid waste stream must be recycled. Based on the most recent Waste Composition Study conducted in 2000, the 50 percent goal was deemed unachievable and revised to a more achievable rate of 35 percent - 40 percent.

The City is responsible for collecting solid waste at residences of six units or less and at small commercial establishments. For fiscal year 2004, the City collected about 699,000 tons of solid curbside waste of which about 44,000 tons were recycled reflecting a recycling diversion rate of approximately 6 percent.

The City's Recycling Program is based within the Sanitation Division of the Streets Department. There are currently eight employees charged with the overall planning and coordination of the City's recycling effort.

In regard to that portion of the City's solid waste stream collected by City forces, a cooperative relationship has been established between the City's Recycling Program and the Sanitation Division. The City's Recycling Program plans and coordinates the recycling effort while the Sanitation Division mans and equips recycling crews throughout the City.

The Sanitation Division is organized into six geographic sanitation areas which are further broken down into sanitation districts. The sanitation areas/districts are as follows:

<u>Area / District</u>	<u>Locale</u>
1A	West Philadelphia (North)
1B	West Philadelphia (South)
2B	South Philadelphia
2D	Center City
3C	Columbia
3F	Fairhill
4G	Germantown
4M	Manayunk
5F	Frankford
5L	Logan
6A	Northeast Philadelphia (West)
6B	Northeast Philadelphia (East)
6L	Lower Tacony

Sanitation field operations including, the collection of both recycled and non-recycled materials, are under the direction of a Deputy Commissioner, a Sanitation Chief Administrator, two assistant area chiefs (one for areas 1, 2, and 3 and the other for areas 4, 5, and 6), Sanitation District Supervisors (one for each district) and crew chiefs. The collection of recycled and non-recycled materials is given equal priority by the Sanitation Division.

Recycled materials are set out at curbside by residents and small commercial establishments throughout the City. This recycled material is collected every other week except for two sections of the City where it is collected on a weekly basis.

Special recycling vehicles are used to collect recycled materials; older vehicles have open bins for various material types while newer vehicles have side bins, which are automatically hoisted and dumped within the body of the truck. There are 62 recycling vehicles in the City's fleet with material capacities of 32, 25, 23, 15 and 12 cubic yards; between 31 and 33 recycling vehicles are on the street on any given day.

Crew chiefs are responsible for defining recycling routes for individual recycling crews (a Geographic Information System is utilized to print out recycling route maps). Each recycling crew is composed of three personnel including a driver and two lifters.

Once a recycling vehicle has completed its route, it is driven to a private recycling center at 29th and Grays Ferry Avenue where its load of recycled material is dumped. A recycling vehicle collects one or two loads of recycling material each day.

At the private recycling center, there are two major recycling waste streams. Paper is processed into bails in one portion of the facility while non-paper recycled materials are processed separately.

There is an active and dynamic market for recycled materials throughout the nation. Recycled paper is so valuable that the City actually receives payment for every ton of paper it can deliver while disposing of non-paper recycled materials costs the City only a fraction of the cost of disposing of non-recycled materials.

In summary, during fiscal year 2004, the City received approximately \$1,152,000 in revenue from the private recycling center for the disposal of recycled paper and paid the private recycling center approximately \$100,000 for the disposal of recycled glass containers and metal cans. In addition, during fiscal year 2004, the City also paid approximately \$35,370,000 in landfill costs for the disposal of non-recycled material.

OBJECTIVES, SCOPE AND METHODOLOGY

The objectives of this review were to:

- (1) determine if the City's Recycling Program is operating in compliance with the applicable City Ordinance (Bill No. 1251-A); and

- (2) determine if the City's Recycling Program could be operated in a more effective and efficient manner.

In performing the review, we focused exclusively on the recycling operations that are the responsibility of City forces. We did not include recycling operations that are the responsibility of private forces (which collect solid waste at residences of more than six units and at large commercial and business establishments). Nor did this review include the collection and disposal of non-recycled materials.

To determine if the City's Recycling Program is operating in compliance with the applicable City Ordinance we completed the following tasks:

- Reviewed the provisions of 1987 City Recycling Ordinance, which defined the legal mandates for recycling in the City of Philadelphia. As part of this review we isolated specific sections of the ordinance, which called for explicit actions by the City against which we could evaluate compliance.
- Interviewed the leadership of the City's Recycling Program to review the current level of compliance with the City's Recycling Ordinance. We also conducted discussions with the Recycling Alliance of Philadelphia, an outside recycling advocacy group, in order to gain additional perspective on Philadelphia's recycling efforts.
- Identified areas where the City's Recycling Program is currently in compliance with the City's Recycling Ordinance. We also isolated specific areas where the City's Recycling Program is in partial compliance or total non-compliance with the Ordinance.

To determine if the City's Recycling Program could be operated in a more effective and efficient manner we did the following work:

- Conducted interviews with the leadership of the City's Recycling Program and officials of the Sanitation Division in order to understand the detailed organizational and operational aspects of the Recycling Program in Philadelphia. We conducted field observations at the area collection depots, and the private disposal site and, reviewed recycling collection operations in the field.
- Evaluated all aspects of the City's Recycling Program in regard to optimizing effectiveness and efficiency. We isolated current strengths and weaknesses and for all isolated weaknesses we developed a series of practical and implemental recommendations for improvement.

RESULTS OF COMPLIANCE REVIEW

RECYCLING PROGRAM IS OUT OF COMPLIANCE WITH CITY ORDINANCE

Our review has found that as of September 2004 the City’s Recycling Program was not always in compliance with the numerous provisions of the City’s 1987 Recycling Ordinance, which is codified in Section 10-717 of the Philadelphia Code entitled “Source Separation, Collection, and Disposal of Refuse.” Table 1 below, summarizes the City’s compliance status with provisions of the Ordinance. For a more detailed description and analysis of the City’s compliance with this ordinance, see Appendix I.

Table 1: Status of the City’s Compliance with the Recycling Ordinance (Bill No. 1251-A)

Ordinance Section	Focus	Full Compliance	Partial Compliance	Non-Compliance
Collection				
2(a)	Recycling of paper		√	
2(a)	Recycling of plastic			√
2(a)	Recycling of glass containers	√		
2(a)	Recycling of metal cans	√		
2(a)	Recycling of garbage			√
2(a)	Recycling of yard waste			√
2(b)	Maximum of four (4) bundles/receptacles			√
2(c)	Source separation	√		
Administration				
3(a)	Inter-Agency Task Force			√
3(d)	Recycling Advisory Committee (RAC)		√	
3(e)	Duties of RAC			√
3(g)	Chairmanship/reporting for Recycling Coordinator (RC)			√
3(g).(1)	Duties of RC/Coordination		√	
3(g).(2)	Duties of RC/R&D	√		
3(g).(3)	Duties of RC/Reporting			√
3(g).(4)	Duties of RC/Waste Composition Study	√		
Enforcement				
4	Enforcement methods		√	
Recycling Goals				
5	Diversion rate goal			√

Clearly, the first imperative is for the City’s Recycling Program to be brought into substantial compliance with the City’s Recycling Ordinance. This will require a high level of commitment on the part of the City administration and significant effort on the part of the City’s Recycling Program and the Sanitation Division. There are a number of qualitative key performance indicators that can be used to evaluate compliance, however, the single most important indicator is the quantitative recycling diversion rate, which must increase from the current level of approximately 6 percent to 35 percent - 40 percent in order to achieve compliance. Since this increase represents a six fold improvement and since it presents a truly difficult undertaking, we have provided a series of recommendations — many of which center around the above listed areas — in the next section. The recommendations are aimed at assisting the City in increasing the diversion rate of its Recycling Program.

IMPROVING DIVERSION RATE WILL RESULT IN SIGNIFICANT ANNUAL ECONOMIC BENEFITS

The City's Recycling Program initiated three major new efforts (i.e. Pilot Incentive Program, Educational Program and Pilot Single Stream Collection Program) aimed at significantly increasing and sustaining the recycling diversion rate for the City. We have reviewed the nature and scope of these initiatives and have concluded that they represent a firm foundation for the future success of the Recycling Program.

In addition to the new initiatives currently being undertaken by the City's Recycling Program, we have identified other essential components of a revised strategic vision for the recycling program. These components incorporate major organizational and operational changes which are, in our view, equally essential to the success of the program.

Taken together, the program of recommendations set forth in this report represents a comprehensive blue print for change, which offers the best hope that the City's Recycling Program will ultimately achieve the legally mandated and achievable recycling diversion rate goal of 35 percent - 40 percent within a reasonable period of time. Once the strategic diversion rate goal is achieved, then, additional organizational and operational changes of a more tactical or "fine-tuning" nature could be considered.

The timely and successful implementation of the program of recommendations set forth in this report will require significant management skill. As a result of our interactions with the senior leadership of the City's Recycling Program during the course of our review, we have concluded that this group of professionals possesses the knowledge, experience and commitment necessary to direct the implementation process.

The annual economic benefit to the City resulting from the improvement of the recycling diversion rate would be substantial and recurring. Improving the recycling diversion rate to a level of 35 percent - 40 percent will not only achieve compliance with the City's Recycling Ordinance, but it will also result in significant annual economic benefits for the City. Specifically, based on fiscal year 2004 tonnage, price and cost information, we believe that the City would save approximately \$17,000,000 on an annual basis if the recycling diversion rate increases to 35 percent - 40 percent (see how this amount was derived in the section of the report titled Computation of Economic Benefits).

Major New Efforts

Pilot Incentive Program

The City's Recycling Program has embarked on a pilot program to test whether monetary incentives could be utilized to further encourage the citizens of the City to begin and continue to recycle. If successful, this incentive program would be the first such program in the nation.

The pilot incentive program outfits recycling compactors with automated lifting devices and provides special recycling receptacles to residents. Each receptacle is automatically lifted onto a recycling collection vehicle and the weight of each load of recycled material is automatically determined and credited to the respective

residence's recycling account (note: a computer chip is embedded into each receptacle, which contains the address of the residence).

Under the pilot incentive program, the more a residence recycles, the more weight is credited to their individual account. The weight of recycled materials is converted into coupon dollars which is then redeemed by residents at a range of local merchants.

The program includes a series of conveniences for residents such as accessing their recycling account via their computer and printing out coupon dollars at their leisure. The merchants participating in the program cover a full range of products from home furnishings to food.

We were informed that the pilot incentive program has begun in two sections of the City. If successful, the intent is to make the program available city-wide. In our view, the pilot incentive program is an innovative effort by the City's Recycling Program that should be encouraged. We, therefore, recommend that the pilot continue and that it be fully and independently evaluated before a decision is made to implement the program city-wide [20505.01].

If the pilot incentive program is judged to be successful, before a decision is made to expand the program city-wide, a series of operational issues must be addressed in order to ensure its long term viability. The following are illustrative of the types of operational issues which must be resolved:

- how will the program scale up the procurement of recycling receptacles and computer chips from 2,000 required for the pilot to over 560,000 required for City-wide application?
- how will the program scale up the procurement of lifting / weighing mechanisms for recycling collection vehicles?
- how will the program handle the maintenance of receptacles, computer chips and lifting / weighing mechanisms on an on-going basis?

Additionally, as part of addressing the feasibility of scaling up the procurement of lifting / weighing mechanisms for recycling vehicles, the City should also explore the practicability of outfitting automated lifting mechanisms on compactors used to collect non-recyclable trash. Management may conclude that such an investment, over time, will improve trash collection efficiency and reduce workers compensation claims.

The process for analyzing the feasibility of outfitting other compactors with automatic lifting mechanisms should be thorough and methodical. Management should consider, for example, that as the diversion rate increases, more of its existing fleet of compactors would require being fitted with lifting devices, which also weigh the contents of each recycling receptacle and store the weight and address information for subsequent processing. Other compactors in the City's fleet that continue collecting non-recyclables could be equipped with less expensive automated lifting devices. Most importantly, any decision to go forward refitting the vehicles with lifters should be preceded with a strategic plan that phases in the change only on routes most suited to it.

Pilot “Single Stream” Collection Program

The City’s Recycling Program has also begun a test of the “single stream” concept for the collection of recycled material. Under this approach, all recycled materials except garbage and yard waste are placed in a single receptacle and are collected by the City using standard compactors.

Instead of forcing residents to separate recycled material into distinct categories, a process which is time consuming and an obvious barrier to compliance, the single stream approach permits the co-mingling of recycled materials in the interest of greater citizen participation. The single stream approach relies on new technology at the disposal site to mechanically separate the various types of recycled materials in preparation for processing and ultimate disposal.

In addition to the facilitation of citizen participation in recycling, the single stream approach provides a major operational advantage, namely, that standard compactor vehicles currently in the Sanitation’s fleet could be diverted to recycled materials. This will greatly simplify the process of scaling up the recycling program throughout the City from the current 6 percent recycling diversion rate to the target rate of 35 percent - 40 percent.

At the current recycling diversion rate level, approximately 15-20 percent of the compactors and crews are assigned to collecting recycled materials while approximately 80-85 percent of the compactors and crews are assigned to collecting non-recycled materials. As the citizen participation in the recycling program increases, the recycling diversion rate should move closer toward 35 percent - 40 percent at which point potentially about 35 percent - 40 percent of compactors / crews would be assigned to recycled materials while approximately 60 percent - 65 percent of compactors / crews would be assigned to collecting non-recycled materials.

Scheduling of compactors / crews would remain a relatively similar task under the single stream concept. As at present, crew chiefs would be responsible for periodically revising both recycling and non-recycling routes to reflect the increased diversion rate; after each revised schedule is prepared, the existing Geographic Information System would be used to generate maps of each revised recycling / non-recycling route.

From a practical perspective, we would expect that recycling routes will be reduced in size over time as the recycling diversion rate increases. At 35 percent - 40 percent, recycling routes would be at their long term optimal configuration. Correspondingly, the non-recycling routes should increase in size over time as the recycling rate increases. At the targeted diversion rate, non-recycling routes would also be at their long-term optimal configuration.

Since the recycling program utilizes fewer and more inaccessible disposal sites than the non-recycling program, there would be a larger travel component built into recycling routes. Therefore, for practical scheduling purposes, it should be potentially possible to have identical routes for both recycling and non-recycling programs such that two compactors / crews would service the same collection route.

There are two potential problems associated with the single stream concept that must be evaluated and overcome before full scale implementation can begin throughout the City. First, any form of garbage in the recycled material stream can render the recycled paper in the stream to be unusable; second, certain types of paper can cause the compactor mechanism to malfunction and jam.

In regard to the potential contamination of recycled paper from the presence of garbage, citizen education and awareness is the initial line of defense. As a further control, Sanitation Division Enforcement Officers can conduct random inspections and the private disposal site can institute an in-coming material inspection program as well. Finally, further research is obviously required in order to fully understand and counter the potential of compactor mechanism malfunction and jamming as a result of the presence of certain types of recycled paper. Hopefully the full dimension of these potential problems and their practical solutions will emerge as a result of the on-going test.

On balance, the single stream concept represents potentially the clearest path to the achievement of the targeted recycling. Since it utilizes existing compactors and crews, it is straight forward to implement and we believe potentially the most economical way of expanding the recycling program. We recommend that the Streets Department monitor the results of the “Single Stream” collections program, while at the same time work to resolve some of the problems that would impede further expanding the program to other parts of the City [20505.02].

Educational Program

The City’s Recycling Program is currently embarking on a new educational program (officially termed the City-wide Recycling Advertising, Outreach and Education Program) to support the City’s recycling effort. This educational program will include the development of a comprehensive campaign designed to encourage every resident in Philadelphia to recycle; the specific goals of the educational program are to:

- create and produce a positive “carrot” advertising approach to motivate residents to participate in the current recycling services offered by the City;
- determine the perceived obstacles to participation in the recycling services provided;
- determine if participation or non-participation is related to factors inherent within the major ethnic groups that are found in Philadelphia;
- design a positive based multi-media advertising campaign geared to continually increase the current curbside residential recycling tonnage collected by the City;
- design a major focus of the advertising campaign around encouraging significantly more recycling of mixed paper;
- incorporate into the overall advertising and educational outreach campaign an element designed to reduce street litter within the City;

- provide a mechanism for assessing the effectiveness of the marketing / advertising program; and,
- increase a sense of personal accountability for a clean neighborhood and environment in the City of Philadelphia.

We recommend that this new educational program continue since education is absolutely essential to the success of any recycling effort [20505.03]. In our view the educational program should be tailored to each geographic area / district / neighborhood of the City and to each individual language group to ensure that the recycling message is understandable and consistent for all residents and commercial establishments of the City.

Other Needed Changes

Mayor Needs To Embrace, Support And Monitor Recycling Results

Over the years since the initial establishment of the City's Recycling Program in 1987, the City's Recycling Coordinator has been relegated to lower and lower echelons of the City administration. While the original legislative intent of City Council was that this individual report directly to the Office of the Mayor, at present the Recycling Coordinator reports within the Sanitation Division.

We do not believe that it would be appropriate for the Recycling Coordinator to report directly to the Mayor as intended by original legislation. However, if the Recycling Program is to become successful in Philadelphia, the first essential step to increasing the recycling diversion rate is for the Mayor to emphatically embrace and support recycling. The Mayor must be kept informed of the progress being made. Accordingly, we recommend that the City's Recycling Coordinator make periodic progress reports to the Office of the Mayor. The Mayor's public embrace and support of the Recycling Program together with familiarity of its progress or lack of progress will demonstrate to all Philadelphians that the City places great importance on recycling, and that the City is willing to fully back the program [20505.04].

Pursue Changes In Recycling Ordinance To Reflect Current Social And Economic Climate

Since the adoption of the Recycling Ordinance in 1987, the social and economic climate of Philadelphia has changed. Neighborhoods once considered impoverished and inhabited with residents not likely to recycle are now inhabited by highly-educated people who are more environmentally conscious. Neighborhoods formerly characterized by one-predominant-type ethnic background have been re-inhabited by individuals from other ethnic settings that have different customs, different language requirements, and hold different perspectives on the importance of recycling.

Likewise, times have changed as to the economic viability of certain recyclables addressed in the original ordinance. For instance, the City used to collect garbage and sent it to pig farmers in New Jersey. Streets Department managers assert that many of the pig

farms have since then ceased operations, leaving only one major pig farmer who gets most of the garbage needed from a single large City university.

As an alternative, the Recycling Office indicates it is working with local restaurants and businesses to set up small scale local composting facilities. Managers point out that the concept is to have small groups of local business in a compact geographic location set up small scale composting facilities. If the process being tested works well, the Recycling Office envisions expanding the process across the City wherever there are restaurants or other garbage producers.

Additionally, Streets Department management has questioned the economic viability of yard waste, another recyclable specified in the 1987 Recycling Ordinance. Management asserts there are a number of factors that make the cost per ton to collect yard waste eight-to-ten times more expensive than regular curbside rubbish collections. Sanitation managers pointed to a 2001 pilot test of collecting yard waste, in which the yard waste truck and crew ran a day's route with very little tonnage to show for the effort. Managers also contend that there were problems with contamination and that there are no yard waste processing facilities nearby. The latter contention, they assert, meant hauling the yard waste to a New Jersey processor, which in turn meant lengthy trips to the processing facility, bridge tolls, and a processing fee.

Management has advised us that the Recycling Office does have an alternative to collecting yard waste. Under the alternative, they show people how to compost their own yard waste at home.

Given the social and economic changes, as well as the problems and experiences encountered in the collection of certain types of recyclables since the adoption of the original Recycling Ordinance, it may be appropriate to update the ordinance. We therefore recommend that the Streets Department consider the need to pursue changes in the Recycling Ordinance such as those involving the administration of the program and/or the types of recyclables required to be collected. Management should seek changes that will make the ordinance more suitable and responsive to the current social and economic climate of Philadelphia [20505.05].

Increase Scope Of Materials Subject To Mandatory Recycling

At present, only newspaper, office paper, glass containers and metal cans are required to be recycled in Philadelphia. Corrugated cardboard, plastic, garbage, and yard waste are not required to be recycled.

In order to increase the tonnage of recycled materials, we recommend that the City work toward increasing the scope of materials subject to mandatory recycling [20505.06]. The increase should, at a minimum include corrugated cardboard and plastic. To the extent that lawmakers still consider garbage and yard waste to be appropriate recyclables, management should continue to develop alternatives, such as composting, and other environmentally sensitive approaches.

Introduce Comprehensive Enforcement Program

At present the City does not utilize enforcement as a tool in encouraging residents to recycle. Many large cities across the nation have successfully utilized some form of enforcement to initiate and sustain their recycling program.

There are essentially three methods of enforcement available to the City to encourage recycling: (1) non-conformers could be notified personally of their nonconformance and directly requested to fully comply with the recycling program; (2) in accordance with the City's Recycling Ordinance, the Streets Commissioner is authorized to "... refrain from collecting ... any refuse set at curbside ... which is not separated as required..."; and (3) the City can impose a monetary fine for not recycling. The key to any successful recycling enforcement program is to be fair but firm in dealing with all citizens.

To this end, we recommend that the City create a multi-tiered recycling enforcement program, which is structured as follows:

- the first line of enforcement should be notification of nonconformance by notice left at the door followed up with a personal letter, as required;
- the second line of enforcement should be the refusal by the City to pick up solid waste at any residences or small business establishments that do not recycle; and
- the third line of enforcement should be the imposition of monetary fines which are directed only to the most serious offenders [20505.06].

The recycling enforcement program must have the complete support of the City administration to be successful; although it would include monetary penalties; hopefully, this extreme measure would only be required in rare situations.

Introduce Weekly Recycling Collection Throughout The City

The City currently collects recycled materials on a bi-weekly basis in all but two sections of the City. This contrasts with the collection of non-recycled materials, which is collected no less frequently than once a week throughout the City.

In order to create a recycling discipline among residents and to help them to better remember when to set out their recycled material, we recommend that the City introduce weekly collection of recycled materials to targeted areas of the City identified as potentially well suited to it. Further, we recommend that the recycled material be collected on the same day as the non-recycled material to provide an additional convenience [20505.07].

Evaluate Use of Additional Processing Sites for Recycled Material

Currently, all City recycling vehicles must travel to a private site at 29th and Grays Ferry Avenue for the processing of recycled material. While this practice may be cost justified at the current recycling diversion rate, it may become non-cost effective as the

recycling diversion rate approaches and reaches the goal of 35 percent - 40 percent and the number of recycling collection vehicles increase six fold.

In order to moderate the travel cost associated with the processing of recycled material, we recommend that the City evaluate the availability of additional processing sites within or nearby to the City [20505.08]. We believe it is important to undertake this evaluation as soon as possible so that additional sites are fully operational in advance of actual need.

Issue Quarterly Recycling Performance Report

Periodic and frequent feedback on the performance of the Recycling Program is essential to the long term success of the program. The City administration, City Council and the citizens should be informed of the progress which has been made as both a status indicator and as a spur to even greater levels of recycling achievement.

To this end, we recommend that the City's Recycling Coordinator prepare a quarterly report on the performance of the Recycling Program with particular emphasis on the diversion rates for the City as a whole and for each area and district [20505.09]. This quarterly performance report should be forwarded to the City administration and to City Council and should be posted to the City's web site for review by citizens.

Prepare Implementation Plan

Currently the City has no detailed written Implementation Plan. Such a plan should document the individual steps required for the implementation of each recommendation along with the estimated start and completion dates for each step together with the identification of the specific individual(s) who will be held responsible for the completion of each step.

To further ensure the success of the implementation, we recommend that the City's Recycling Coordinator prepare a detailed written Implementation Plan. In addition to the development of a written Implementation Plan, we also recommend that the City's Recycling Coordinator prepare periodic written Implementation Status Reports which document the progress to-date and the revised plan for the future. The Implementation Status Reports should be issued to the Office of the Mayor as an essential control on the implementation process [20505.10].

COMPUTATION OF ECONOMIC BENEFITS

Computation of Economic Benefits Associated With Increasing Diversion Rate

In assessing the annual economic benefit of improving the recycling diversion rate, we determined the total annual disposal cost under a recycling diversion rate of 6 percent (which represents the current situation) and compared it to the total annual disposal cost under a best-case scenario diversion rate of 37.5 percent (which represents the midpoint of the target range) based on actual fiscal year 2004 tonnage, price and cost information. In arriving at our economic benefit, we made the following assumptions that would have no effect on the calculations. First, the single-stream concept will ultimately be implemented by the City for the collection of recycled material. Second, there would be no difference in total annual collection cost under a 6 percent vs. 37.5 percent recycling diversion rate; hence, total annual collection costs were excluded from the calculations. Third, we assumed that the City's overhead cost would be the same under either recycling diversion rate scenario and, therefore, such overhead costs were excluded from the calculations. Finally, we assumed that initial capital costs to refit recycling compactors with automated lifters would be self-funded through a combination of sources ranging from state grant money (for compactors dedicated to recycling) through improved efficiencies, reduced workers compensation claims, and negotiated dealings with the vendor and merchants supporting the pilot incentive program.

There are three components of the total annual disposal cost that must be considered for both the 6 percent and 37.5 percent recycling diversion rate scenarios:

- the annual revenue received by the City for each ton of recycled paper delivered to the private recycling center;
- the annual cost paid by the City for each ton of other recycled material delivered to the private recycling center; and
- annual the cost paid by the City for each ton of non- recycled material delivered to a landfill.

The total annual disposal cost under each scenario represents the net effect of these three components. Table 2 below documents the annual tonnage for various categories of waste based on the actual recycling diversion rate of 6 percent.

Table 2: Annual Curbside Waste Tonnage Based on Recycling Diversion Rate of 6 Percent

Category	Annual tonnage**	
Recycled paper*	28,000	(A)
Other recycled material*	16,000	(B)
Total recycled material*	44,000	(C = A + B)
Non-recycled material	655,000	(D)
Total solid waste collected	699,000	(E = C + D)

*Source: Fiscal year 2004 data from the Streets Department.

** Excludes waste collected for disposal by the Sanitation Division's street cleaning trucks, litter basket trucks, and illegal dumping clean-up crews, and by other departments such as the Prisons, Recreation, Fairmount Park, Airport and the Philadelphia Water Department

COMPUTATION OF ECONOMIC BENEFITS

Table 3 below documents the annual tonnage for various categories of waste based on the target recycling diversion rate of 37.5 percent:

Table 3: Annual Curbside Waste Tonnage Based on Recycling Diversion Rate of 37.5 Percent

Category	Annual tonnage	
Recycled paper	169,000	(F)
Other recycled material	93,000	(G)
Total recycled material	262,000	(H = F + G)
Non-recycled material	437,000	(I)
Total solid waste collected	699,000	(J = H + I)

Obviously, the total solid waste collected under each scenario would be the same (699,000 tons). The total recycled material would reflect either 6 percent (44,000 tons) or 37.5 percent (262,000 tons) of the total solid waste collected (699,000 tons) depending on the recycling diversion rate being considered, while recycled paper represents 63.6 percent of the total recycled material and other recycled material represents 36.4 percent of the total recycled material based on actual fiscal year 2004 experience.

For the 6 percent recycling diversion rate scenario, the annual revenue received for curbside recycled paper was \$1,151,640 which reflected 28,000 tons delivered at an average revenue of \$41.13 per ton. The annual cost incurred for other recycled material was \$100,480, which reflected 16,000 tons delivered at an average cost of \$6.28 per ton. The cost incurred for the land filling of non-recycled material was \$35,370,000. This amount reflected 655,000 tons land filled at an average cost (tipping fee) of \$54.00 per ton. For the 6 percent recycling diversion rate scenario, the total annual disposal cost was \$34,318,840.

For the 37.5 percent recycling diversion rate scenario, the annual revenue received for recycled paper would be \$6,950,970 which reflects 169,000 tons delivered at an average revenue of \$41.13 per ton. The annual cost incurred for other recycled material would be \$584,040 which reflects 93,000 tons delivered at an average cost of \$6.28 per ton. The cost incurred for the land filling of non-recycled material would be \$23,598,000. This amount reflects 437,000 tons land filled at an average cost (tipping fee) of \$54.00 per ton. For the 37.5 percent recycling diversion rate scenario, the total annual disposal cost would be \$17,231,070.

The annual economic benefit for the City is represented by the difference in total annual disposal cost for the two scenarios. Therefore, the annual economic benefit associated with improving the recycling diversion rate from 6 percent to 37.5 percent would be \$17,087,770 or approximately \$17,000,000 based on fiscal year 2004 tonnage, price, and cost information.

Since the City operates within a dynamic market for recycled materials and within a volatile market for landfill space, the future annual savings resulting from recycling can be expected to change. Given current trends, it is reasonable to expect that the price paid for recycled paper will likely increase while the tipping fee paid for landfill space will also likely rise, the combined effect of which should be an even more dramatic annual savings potential for recycling in the future.

One way to appreciate the significance of the expected annual cost savings is to focus on the incremental savings resulting from each one percent point improvement in the recycling diversion rate. On this basis, the City and its citizens should be aware that each one percent improvement in the recycling diversion rate would result in approximately \$540,000 in annual savings for the City and, thus, the City and its citizens should persevere in the difficult but obviously rewarding task of achieving the diversion rate goal.

**Status of City's Compliance With Recycling Ordinance
As of September 2004**

<u>Ordinance Section</u>	<u>Required</u>	<u>Compliance Status</u>
Collection of Recyclables		
2	“...all owners or persons in control of any premises shall be required to separate from all other refuse that they set at curbside or other pick-up locations for collection by the City or any other collector, the following items:	
2(a)	PAPER (newspaper, office paper and corrugated cardboard);	The City's Recycling Program only requires the recycling of newspaper and office paper; it does not specifically require the recycling of corrugated cardboard, however, residents are encouraged to take corrugated cardboard materials to designated drop off sites.
2(a)	PLASTIC (individual bottle, carton, lid or tube composed of plastics);	The City's Recycling Program does not specifically require the recycling of plastics; however, residents are encouraged to take plastic material to twelve plastics drop off sites.
2(a)	GLASS CONTAINERS individual bottle, jar or carton composed of glass);	The City's Recycling Program does require the recycling of glass containers.
2(a)	METAL CANS (individual cans composed of metal and commonly containing beverages and food);	The City's Recycling Program does require the recycling of metal cans.
2(a)	GARBAGE (animal and vegetable wastes resulting from the handling, preparation, cooking, and consumption of food); and	The City's Recycling Program does not require the recycling of garbage.
2(a)	YARD WASTE (grass, leaves, tree and brush cuttings and similar material).	The City's Recycling Program does not require the recycling of yard waste.
2(b)	The above items shall be set out for collection in no more than four (4) separate bundles or receptacles.	The City's Recycling Program places no limit on the number of separate bundles or receptacles set out.
2(c)	“...all household, and all other premises, shall be subject to mandatory source separation within two (2) years of the effective date of this Section (1989).	The City's Recycling Program does require mandatory source separation.
Administration of the Recycling Program		
3(a)	There is hereby created in the Office of the Mayor, an Inter-Agency Task Force on recycling. The Task Force shall be composed of the	The Inter-Agency Task Force on recycling was initially established, however, it is no longer in existence.

**Status of the City of Philadelphia’s Compliance With Recycling Ordinance
As of September 2004**

<u>Ordinance Section</u>	<u>Required</u>	<u>Compliance Status</u>
	<p>following individuals each of whom may designate deputies to represent them in performing Task Force duties:</p> <ul style="list-style-type: none"> • The Managing Director; • The Commissioner of Streets; • The Commissioner of Public Property; • The Procurement Commissioner; • The Commerce Director; • The Water Commissioner; and, • The Commissioner of Licenses and Inspections. 	
3(d)	<p>“...the Recycling Advisory Committee is hereby established.”</p>	<p>A Recycling Advisory Committee does exist, however, membership on the Committee is not in compliance with the mandates of the Ordinance since it does not include the following individuals:</p> <ul style="list-style-type: none"> • one person representing the collective bargaining unit covering those workers whose primary duty is the collection of household trash; • one person who is engaged in the business of recycling trash; • one person engaged in the business of collecting and disposing of trash for private businesses; • one person who is the administrator of a non-profit intermediate processing center; • one person who is the chief administrator of a neighborhood non-profit recycling program; • one person who is a collector of residential garbage under contract with the City;

**Status of the City of Philadelphia’s Compliance With Recycling Ordinance
As of September 2004**

<u>Ordinance Section</u>	<u>Required</u>	<u>Compliance Status</u>
		<ul style="list-style-type: none"> • one person who is a representative of an environmental protection organization with an active recycling advocacy program; • one person who is a representative of a recycling advocacy coalition focusing on Philadelphia waste management; • one person representing the glass recycling business; • one person representing the aluminum recycling business; • one person representing the plastic recycling business; and, • one person representing the construction or demolition business.
3(e)	“the Advisory Committee ... shall transmit to the Task Force and release to the public, draft regulations ... and additional recommendations ... as it deems appropriate.”	The Recycling Advisory Committee has not prepared draft regulations or any additional recommendations.
3(g)	The chairperson of the Task Force shall be the Recycling Coordinator ...	The Recycling Coordinator does not serve in the role of chairperson of the Inter- Agency Task Force on recycling.
3(g)	The Recycling Coordinator shall report to and be supervised by, the Mayor or Deputy Mayor....	The Recycling Coordinator does not report to the Mayor or Deputy Mayor, rather, he reports to the Deputy Streets Commissioner for the Sanitation Division (who is also the Streets Commissioner until such time as a new Deputy Commissioner is appointed).
3(g)	The duties of the Recycling Coordinator and his or her staff shall be:	
3(g)(.1)	to oversee, coordinate, and insure implementation of the recycling duties of all Task Force and other agencies with recycling functions;	The Recycling Coordinator only oversees the recycling duties of the Streets Department.

**Status of the City of Philadelphia's Compliance With Recycling Ordinance
As of September 2004**

<u>Ordinance Section</u>	<u>Required</u>	<u>Compliance Status</u>
3(g).(2)	to perform such research and development activities as he or she may deem helpful to implementation of the City's recycling program.	The Recycling Coordinator does perform research and development activities in support of the City's Recycling Program an example of which is the new Pilot Incentive Program underway in several areas of the City.
3(g).(3)	to evaluate in detail every three months, the effectiveness of the Task Force in achieving the recycling goals ... and to promptly transmit the report of his or her findings to the Council, the Mayor and the Advisory Committee.	The Recycling Coordinator does not perform these duties.
3(g).(4)	to undertake and complete as soon as reasonably possible a Waste Composition Study for the purpose of determining that portion of the City's waste stream that is recyclable given existing and reasonably foreseeable technologies and markets ...	The Recycling Coordinator did oversee the completion of a Waste Composition Study during 2000.

Enforcement

(4)	"... the Streets Commissioner shall be authorized to refrain from collecting or disposing of, or authorizing the collection or disposal of, any refuse set at curbside or other pick-up location which is not separated as required ..."	The Streets Commissioner has the required authorization; however, this provision is not enforced.
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Recycling Goals

(5)	"... the Task Force shall maintain as its highest priority, the accomplishment of the following goal: ... the recycling of at least fifty percent (50 percent) of the City's total solid waste stream within four (4) years of the date of final enactment of this Section (1991). The goal set forth above shall be reevaluated and may be modified by the Advisory Committee ... upon review of the Waste Composition Study."	Based on the most recent Waste Composition Study in 2000, the maximum recycling diversion rate was established as 35-40 percent, therefore, the goal of the City's Recycling Program should be reset to 35-40 percent; at present, the City's Recycling Program has achieved a recycling diversion rate of less than 6 percent.
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AGENCY RESPONSE TO REVIEW



CITY OF PHILADELPHIA

STREETS DEPARTMENT
7th Floor - Municipal Services Building
1401 JFK Boulevard
Philadelphia, Pennsylvania 19102-1676

May 13, 2005

CLARENA I. W. TOLSON
Commissioner

CARLTON WILLIAMS
Deputy Commissioner

The Honorable Jonathan A. Saidel
City Controller
Office of the City Controller
12th Floor Municipal Services Building
1401 John F. Kennedy Boulevard
Philadelphia, PA 19102-1679

Dear Mr. Saidel:

As per your request, attached are the written responses to your findings and recommendations for the Office of the Controller's Streets Department Review of Recycling Program, May 2005.

If you have any questions regarding the responses please contact myself or Deputy Commissioner Carlton Williams at (215) 686 -5470. Once again, thank you for giving our department the opportunity to respond.

Sincerely,

A handwritten signature in cursive script that reads "Clarena I.W. Tolson".

Clarena I.W. Tolson
Streets Commissioner

cc: Honorable John F. Street, Mayor
Mr. Pedro A. Ramos, Managing Director
Mr. Carlton Williams, Deputy Commissioner
Mr. Albert F. Scaperotto, Deputy City Controller
Mr. David P. Robinson, Recycling Coordinator

CT/CW

CLEAN AND SAFE STREETS



CITY OF PHILADELPHIA

STREETS DEPARTMENT
7th Floor - Municipal Services Building
1401 JFK Boulevard
Philadelphia, Pennsylvania 19102-1676

CLARENA I. W. TOLSON
Commissioner

CARLTON WILLIAMS
Deputy Commissioner

May 13, 2005

Jonathan A. Saidel, City Controller
12 Floor MSB
1401 JFK Boulevard
Philadelphia, PA 19102

Honorable Jonathan A. Saidel

Thank you for the opportunity to review and respond to the City Controller's Office, *Review of the City of Philadelphia's Recycling Program*. The Department of Streets is committed to complying with all applicable state and local ordinances regarding recyclable materials and makes every effort to maximize the efficiency and effectiveness of the program. We understand the importance of environmental stewardship and the cost benefits of an effective recycling program.

The Department agrees with several of the findings in the report including the need to increase the quantity of recyclables collected through residential collections, improving reporting and program planning, and the need to update the City's Recycling Ordinance. We support many of the recommendations in the report and are dedicated to quality assurance in the referenced areas. As the report has indicated, our Department is already making great strides in developing innovative strategies for increasing recycling participation rates across the City Of Philadelphia. Attached is a summary of existing and proposed activities being undertaken by the Recycling Office concerning each of the recommendations listed in your report. Although much work remains, we believe that we are headed in the right direction in developing and managing a first class recycling program for our city.

It should also be noted that the report focuses only on curbside residential recycling collections and fails to address the importance of commercial recycling efforts. If commercial recycling efforts are included a 35% recycling rate is attainable which is the current goal mandated by Pennsylvania Department of Environmental Protection (PADEP). If commercial recycling is included as a part of the City's recycling rate, the overall recycling rate for the City is 38.7%.

The Streets Department also identified a number of factors and conditions that significantly affect the findings in the report. Many of these factors are dictated by fiscal and operational challenges that are beyond the Department's control. The sections below highlight our responses to the findings and assumptions used to estimate the future potential for recycling collections in the City of Philadelphia.

CLEAN AND SAFE STREETS

Jonathan A. Sidel,
City Controller

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HIGHLIGHTS:

The report indicates that significant economic benefits can be achieved based on the assumption of increasing the diversion rate to a "best case scenario of 37.5%" using the single stream recycling concept and external resources to accomplish this goal. The report assumes that the Department can implement the single stream concept without any increase in collection costs. Furthermore, the report assumes that the initial investment to purchase vehicles and equipment can be acquired through a range of resources including state grant dollars (for compactors dedicated to recycling) through improved efficiencies, reduced worker compensation claims, and negotiated dealings with the vendor and merchants supporting the incentive program.

There is insufficient evidence to support the assumption that single stream recycling collections can be implemented Citywide. The results of the single stream / incentive based recycling pilot will be evaluated during the Fall of 2005.

Furthermore, the Department has identified several factors that demonstrate that the suggested program changes would substantially increase the Department's costs. Collection costs will increase as recycling rates increase because more trucks and crews are required to collect the same amount of recyclables as trash. For example, under the single stream collection model, a recycling crew can collect about 7 tons per day of material while an average trash collection crew can collect nearly 16 tons per day. This is due largely to lower compaction rates for recycling collections. Additional factors include participation rates and the amount of material set out per household for collections.

Given the factors stated above, significantly increasing recycling rates will require additional personnel resulting in increased overhead costs. It is very unlikely that state grant funding would be available to purchase and install lifter devices, since the City already receives the maximum level of grant funding permitted under state law. Additionally, the Department's prior experience using lifters on trash collection trucks has shown no decrease in injury rates and there is no evidence that the use of lifters for recycling collections would improve efficiencies. In fact the use of lifters increases collection times. To install lifters on a fleet of 60 recycling vehicles (which would also have to be purchased) it would cost \$1.2 million and take substantial time for Fleet Management to perform.

The findings of the report suggest that the City of Philadelphia would be able to achieve an economic benefit of \$17 million based on the increased diversion rate of 37.5% and revenues from the recycled products. The Department believes that the economic benefit to the City may be somewhat overstated. Increased operational costs were not considered and we believe that the amount of recoverable recyclable material is less than anticipated in the findings for the following reasons:

1. Table 3 of the reports assumes that 100% of the available recyclable materials can be recovered for collections. A more realistic approach would be to use data from USEPA's 2003 waste characterization study prepared by Franklin Associates. This reports estimates that the average national recovery rate for paper is 45%, aluminum and metal containers 35%, glass containers 20%, and plastics 5%. This reduces the amount of recyclable materials available for collection to about 100,000 tons per year or about 15%.

Jonathan A. Sidel,
City Controller

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2. Revenue savings projected on page 14 of the report assumes that recovered paper prices will remain at the present historic high of \$41 per ton. The paper market has historically fluctuated greatly. Also, recycling revenue would be lower if single stream recycling collection is used because more processing of materials is required and the quality of sorted material from single stream collections is typically lower than collecting paper separately from commingled bottles and cans. Waste News (an Industry publication) reports that the price for mixed residential paper in the Northeast region has been as low as negative \$40 per ton in 1997 and did not reach \$0 until 2000. Prices dropped again during 2002 and 2003 to about negative \$18 per ton. During 2003 and 2004 rates were at \$0 per ton and during 2004 rates increased to a positive level at \$20 per ton.
3. The projected cost savings shown on page 14 assumes that the avoided disposal costs are included as a savings. USEPA's standard practices for calculating recycling programs cost permit this approach only if total system costs are used for both trash and recycling collection (refer to Full Cost Accounting for Municipal Solid Waste Management: A Handbook, pages 52-55, USEPA document 530-R-95-041). The simple example provided below demonstrates the difficulty and complexity of balancing operational costs with the potential economic benefits of increased recycling:
 - If 1,000 tons per day of recyclable material is collected and 2,000 tons per day of trash is collected, about 143 recycling crews and trucks and 125 trash crews and trucks are required for a total of 268 crews and trucks.
 - Or if 200 tons per day of recyclable material is collected and 2,800 tons per day of trash is collected, about 29 recycling crews and trucks and 175 trash crews and trucks are required for a total of 204 crews and trucks.
 - The net increase in trucks and crew required to collect 1,000 tons per day of recyclable material is 64. The cost of additional trucks alone would be about \$9.6 million plus the cost of lifters at about \$1.2 million. Equipment costs would be \$10.8 million or \$1.08 million if amortized over a 10 year period.
 - The annual operating costs for additional equipment is \$2.2 million, and the additional labor and fringe costs is \$11.5 million per year for total of \$13.7 million.
 - In this case the avoided cost would be \$14 million per year which is off-set by increased labor and equipment costs which would equal \$14.78 million. The net result would increase the City's costs by at least \$780,000 and require a significant capital investment of \$10.8 million in new equipment.
4. The cost of educating residents about the collections of additional recyclables (cardboard and plastics) is not included in the analysis provided on page 14. This cost should exceed \$1 million.

Jonathan A. Sidel,
City Controller

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SUMMARY

The Department will continue to investigate new opportunities for increasing recycling collections, and improving education and outreach. A key element of this strategy is to improve recycling rates in areas of the City where rates have been historically low. This is one of the focus areas of the Recycling Office's new education program. The results of the single stream / incentive based recycling pilot will be completed during the Fall of 2005. At that time the Department will assess this pilot to determine if this approach can be implemented in a cost effective manner. The Recycling Office is also investigating the availability of recycling processing facilities in order to increase competition for the City's materials.

We would like to thank your office for your support and leadership in the examination and analysis of the Recycling Program. We believe the findings and recommendations will help us achieve our goal of improving the quality of life in our great City.

Sincerely,



Clarena I.W. Tolson
Streets Commissioner

Cc: The Honorable John F. Street, Mayor
Pedro A. Ramos, Managing Director
Anthony Radwanski, Deputy City Controller
Gerald Micciulla, Audit Administrator
Francis Dougherty, Assistant Managing Director
Michelle Lai, Assistance Finance Director
Michael Zaccagni, Deputy Commissioner
David B. Robinson, Recycling Coordinator
Carlton Williams, Deputy Commissioner

05/13/05

Responses to Controller's Office Report on Recycling

Controller's Recommendations in Italics.

- *Expand the planned pilot incentive program, if it proves successful.*
- *Evaluate results of the pilot "Single Stream" collection program and if successful, expand it to the rest of the City.*

The Recycling unit launched a two-phase pilot in October 2004 affecting about 5,500 homes in parts of Chestnut Hill and Germantown/West Oak Lane. These areas were selected because of the array of demographic and collection related conditions both communities offer. For example, Chestnut Hill has a high number of homes with driveways as well as wide streets with minimal on-street parking. Homes are also spaced farther apart from one another than on a typical Philadelphia route, which has an impact on collection times and on route sizing. West Oak Lane/Germantown, on the other hand, has homes that are much closer together, few of which have driveways for easy container storage, and most of the streets are narrow with numerous parked cars contributing to more difficult collection circumstances. The unit is studying the impact each of the differing conditions will have on route size, household setout characteristics and time and motion.

In Phase one, the city asked residents to include plastics and cardboard in their recycling mix to determine the impact these additions would have on tonnage in each area. The department also introduced compaction trucks to test "single stream" recycling. This part of the pilot was designed to test the efficiency of using packer trucks to collect recyclables rather than the traditional compartmentalized non-compacting collection vehicles. (Processing technology has improved to the point that mixed loads no longer pose the same material quality problems they once did, thereby allowing more efficient collection). The assumption is that packer trucks will fill up at 8 tons per day while for the traditional recycling trucks the average daily work load is around 6 tons per day. The hypothesis here is that if the Department can collect more material per one vehicle/day. While the initial numbers are promising, with increases in tonnage in both service areas, it remains unclear whether or not there are on-street efficiencies using a packer truck.

In Phase two of the pilot, the RecycleBank incentive program was introduced. The city has conducted research to determine that a combination of enforcement and incentives would have the greatest motivating influence on residents. The RecycleBank program features 36-gallon carts with embedded radio frequency identification chips. Each cart is matched to a residence and every time the cart is filled, it is weighed by an on-truck scale and the household is credited with the total weight in the container. For every 10 pounds of recyclables setout, the resident is awarded \$5.00 in valuable retail coupons up to a monthly limit of \$25.00. The resident then may redeem the coupons at a participating retailer of which there are over fifty.

Controller's Report

This phase of the program began in early February in the Chestnut Hill community. Early data suggests that residents are participating at a higher percentage and are setting out more material than ever before. Despite the good news, however, the trucks have had chronic maintenance problems and we have run into excessive overtime on several of the collection days. We are still making adjustments to determine the optimum configuration.

The program will be introduced into West Oak Lane/Germantown in the beginning of May. A mid-term report on our findings in both areas will be completed at the end of June and a final report with recommendations will be completed during the Fall 2005. The final report will detail the findings of the pilot and as will include a section on the projected requirements for expanding the program. Topics to be covered in this section will include recommendations on financing an expanded operation.

RecycleBank and Blue Mountain are currently financing the pilot. They have paid for the retrofit of the trucks, the purchase and delivery of containers, the handling of single stream loads, and much of the public outreach. If the city were to consider expanding the pilot, the cost of purchasing new vehicles, new containers and the cost/revenue formula for processing materials must be included in the analysis. The city must also consider what criteria will be used to select the communities for expansion. The final report will include recommendations on each of these issues.

- ***Continue the educational program for recycling.***

Numerous national studies have repeatedly stated that a continuous, comprehensive education and outreach campaign is necessary to maintain high levels of public participation in recycling programs. Philadelphia has developed and implemented effective, award winning advertising campaigns (Governor's Excellence Award, 2003) since 2001 that have helped increase participation and tonnage collected in the recycling program. The Recycling Office will continue to advertise for as long as is fiscally possible. Budget cuts at the state level, coupled with an increasing amount of grant requests from across the commonwealth have reduced the city's education grants by 75% over the last three grant cycles (since 2001). The Recycling Office has forged creative public/private partnerships that have helped stretch grant dollars, but if the grant money continues to shrink, the city must find alternative funding to continue the recycling education programs which average about \$2 million annually.

Controller's Report

- ***Require the City's Recycling Coordinator to make periodic progress reports to the Office of the Mayor, which needs to emphatically embrace and support the Recycling Program in Philadelphia.***

We support the Mayor's involvement in the program and will continue to solicit his guidance and leadership in support of future recycling. Existing systems are in-place to provide the Mayor's Office with information on the progress of recycling efforts. For example, the Streets Department presently provides monthly reports to ***the Office of Budget and Program Evaluation Budget Bureau*** to evaluate the recycling program's performance measures. The monthly report is a part of the overall Sanitation Division report and highlights performance indicators that include: the total tonnage of recycled materials, the recycled material diversion rates, and the percentage of recycled tons collected on time. The report also features enforcement measures from the Street, Walkway, Education and Enforcement Program (SWEEP) including: the number of commercial recycling citations issued, the number of commercial recycling contacts and warnings issued and the number of commercial recycling inspections.

- ***Increase the scope of materials subject to mandatory recycling as it becomes economically feasible to do so.***

The city currently collects glass, steel, aluminum and tin containers along with a number of paper products at the curb. We have introduced plastic and cardboard collection in the two pilot areas (Chestnut Hill and West Oak Lane/Germantown). We also provide thirteen volunteer drop-off locations through the Plastics Partnership program. The city attempted to collect plastics and cardboard from the curb over a decade ago. Because plastic is high volume and low weight and cardboard is bulky, the trucks would fill up quickly without reaching an optimum load weight, thereby driving the cost to collect the material up by over 70%. By experimenting with packer trucks for recycling collection, which crush plastic and cardboard, the city may be able to add these materials in the future. Identifying funds to purchase new vehicles will be chief among the challenges facing the city if we pursue this course.

- ***Introduce a comprehensive enforcement program.***

The strategic use of enforcement is a proven method to increase and maintain high levels of recycling participation, in addition to discouraging improper handling of other waste related materials. The city relies on about 35 Sidewalk Education and Enforcement Program (SWEEP) personnel to cover the entire city. We do not have the resources to increase the number of officers to provide maximum coverage in all sanitation-related areas.

Controller's Report

The SWEEP officers are the personnel in the Streets Department authorized to address all trash and recycling violations including but not limited to; illegal dumping, early trash day set-outs, as well as recycled material violations. To maximize the Department's efforts to address these issues, the Streets Department Sanitation Division will evaluate the possibility of authorizing Area Sanitation Supervisors to enforce code violation notices. This will increase the number of authorized personnel that will be able to site violators for non-compliance of the city's recycling law and would be a cost effective strategy to increase our coverage ability.

- ***Introduce weekly recycling collection to targeted areas of the City identified as potentially well suited to it.***

Weekly recycling was introduced into the Northwest section and parts of Center City in 1994. Since the start of this level of service, the Department has learned that while it is certainly more convenient for residents, weekly recycling collection does not necessarily equate to greater participation or tonnage. And, if tonnages and participation are not at their highest levels, it costs considerably more to provide weekly service to residents than once every other week collection as is the case in 3/5 of the city. The Recycling Office is experimenting with single stream recycling as stated earlier in this document. If using a packer truck (as called for in a single stream system) can optimize route and crew efficiency, the Department will review the practicality of providing weekly service in areas where recycling rates are already high. By selecting already high performing areas, we can keep crew costs down while providing a higher frequency service to residents.

- ***Evaluate use of additional processing sites for recycled material.***

The Philadelphia Recycling Office (PRO) is attempting to acquire a list of city properties from Public Property to determine if those properties are suitable for use as processing or drop-off location. The Department has begun preliminary discussions with several private sector companies who may have an interest in using the property for this purpose.

- ***Issue quarterly recycling performance reports.***

The Streets Department presently provides monthly reports to the Office of Budget and Program Evaluation to evaluate the recycling program's performance measures. An independent quarterly report can be expanded to include a year to date summary of the information currently reported to the Budget Bureau. In addition the report could include sections on the types of materials collected, the total revenue collected, the total costs to collect recyclable materials, the compliance rates of area neighborhoods, the number of recycling educational programs that have been performed and updates on the pilot programs and new initiatives to increase recycling diversion rates.

Controller's Report

- ***Prepare a detailed implementation plan***

The Streets Department will begin the process of drafting a strategic action master plan to identify the mission, goals and objectives of the City of Philadelphia Recycling Program and to develop action steps in meeting program goals. The Department will survey the department's existing staff resources to determine if the present staff has the capability to develop a comprehensive strategic action master plan. If present staff resources are unable to develop the master plan, the Department will need to search for an outside firm to perform these services. The challenge will then be to find the financial resources to cover the costs associated with this plan. Nevertheless, the Department will thoroughly analyze all the possible alternatives to developing a comprehensive master plan to meet the goals of the recycling program.

CONTROLLER'S EVALUATION OF STREETS DEPARTMENT'S RESPONSE

In commenting on this report, the Streets Department agreed with several of the findings, and supported many of the recommendations. However, the Department took exception to the fact that the report focuses only on curbside residential recycling collections and has asserted that the report failed to address the importance of commercial recycling efforts. The Department also took exception with assumptions we used to project the potential cost savings to the City if it pursues a higher recycling diversion rate.

Focus On Curbside Residential Recycling

We do not believe that including the private-sector commercial recycling efforts in the computation of the City's diversion rate is relevant. The City's Recycling Ordinance and the subsequent Waste Composition Study that amended it, served as our criteria. These documents deal only with residential recycling efforts of the Streets Department. The Waste Composition Study concluded that Philadelphia's curbside residential recycling program has the potential to achieve a diversion rate of 35 percent - 40 percent. Therefore, inclusion of the commercial diversion rate is not appropriate for measuring compliance with the Recycling Ordinance.

Controller's Assumptions In Projecting Potential Savings

As to the assumptions used in our projected savings, we stand by these assumptions and believe they are valid based on the facts provided during the review. We want to first emphasize that the report does not favor any specific recommendation over another, such as the "Single Stream" pilot concept. This recommendation is one of many that we encourage the Department to pursue and implement over time only after evaluating whether or not the concept has proved successful.

We believe the Streets Department's assertion that a huge capital investment in new equipment and increase in annual operating costs is necessary to achieve a diversion rate of 35 percent – 40 percent is overstated. It is overstated because the Streets Department already has many of the resources needed to eventually reach this goal. For example, according to City asset records and discussions held with responsible employees in both the Streets Department and the City's Office of Fleet Management the department's current fleet size of compactors is 265 – 275. On average, the department utilizes about 166 compactors to collect non-recyclable trash daily; leaving it with nearly 100 or so compactors at its disposal for any additional units that it believes might be needed for recycling.

In terms of crews required, if the Streets Department moves toward equipping many of its compactors with lifters, truck crew sizes on these vehicles can be reduced from three to two. This reduction should free-up enough employees to retrain some as drivers, staff any additional recycling trucks that may be necessary, and reassign others to assist with enforcement.

As to the Department's assertion that our report assumes 100% of the available recyclable materials can be recovered for collections, we made no such assumption. We merely based the projected increase of recyclable materials on the diversion goal set by the City's Waste Composition Study.

Finally, the Department takes issue with the paper price used in our estimate of potential savings. There is no question that prices for recyclables fluctuate, however our projection is only an estimate based on the most recent data available at the time of our fieldwork.