
Thinking about Solid Waste Management in the District of Columbia

*A Report to
District of Columbia City Councilmember Harry Thomas
Chair, Committee on Public Works and the Environment*

February 1998

INSTITUTE FOR LOCAL SELF-RELIANCE
Environmentally Sound Economic Development

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Written by
Neil Seldman, Ph.D.

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The Institute for Local Self-Reliance

The Institute for Local Self-Reliance (ILSR) is a nonprofit research and educational organization, providing technical information and assistance to city and state governments, citizen and neighborhood organizations, and industry.

Since 1974, ILSR has been fostering self-reliant communities by investigating examples of closed-loop manufacturing, materials policy, materials recovery, energy efficiency, and small-scale production. It teaches cities to consider solid waste and its by-products as feedstock for saleable materials. ILSR stresses a formula that stimulates local employment, provides skills training and adds to the local tax base.

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Acknowledgments

This report is the product of the ideas and efforts of solid waste workers, civil servants, elected officials, neighborhood activists, environmental activists, haulers, union officials, corporate and trade association executives, and recycling company executives in the District of Columbia. The report was prepared by Neil Seldman, Director of Waste Utilization, ILSR.

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Table of contents

Executive summary	iv
Preface	viii
I. Introduction	1
II. ILSR's recommendations	3
III. Overview of the solid waste system in the District of Columbia	5
Background on the solid waste management system in the District.....	5
Solid Waste Management Administration staff.....	9
IV. Recycling	10
Introduction.....	10
Third attempt at recycling in the District.....	10
Providing efficient city services through recycling.....	11
Sound economic development: jobs.....	13
Planning for the future: landfill space.....	14
Support for recycling by District residents.....	14
Support for recycling within the business community.....	16
Support for recycling by collection workers.....	16
Recycling's impact on transfer stations.....	17
Increasing the District's recycling diversion rate.....	17
Service District Manager Program.....	18
Public-awareness and in-school education campaign.....	19
Compliance with, and enforcement of, private sector recycling regulations.....	20
V. Trash collection	22
Background.....	22
Reconfiguring collection routes and fleet composition.....	22
Fleet redesign and capital investment.....	22
Conversion of second-day solid waste collection into recycling collection.....	23
Strains on the trash collection system.....	24
VI. Transfer stations	25
Background and findings.....	25
Regulating transfer stations.....	25
Siting transfer stations.....	28
Economic impact of transfer stations.....	30
The washboard effect.....	30
Economic impact of maximizing use of Fort Totten and Benning Road, or developing new facilities.....	31
VII. Privatization	33
Background.....	33
Fact-based decision-making.....	34
VIII. Potential economic and social benefits of ILSR's recommendations	36
Introduction.....	36
Solid waste infrastructure.....	36
Recycling.....	37
Summary.....	37

List of tables

Table 1.	Potential savings by implementing ILSR's recycling recommendations.....	12
Table 2.	Potential recycling-related jobs in the District of Columbia	14
Table 3.	U.S. cities with 35% or greater solid waste diversion rates.....	18
Table 4.	Leave benefits: private sector vs. public sector.....	34

List of figures

Figure 1.	The solid waste stream in the District of Columbia.....	7
Figure 2.	Alternative solid waste stream in the District of Columbia	8
Figure 3.	Locations of private transfer stations in the District of Columbia.....	27

Appendices

Appendix A.	Testimony of D.C. Department of Human Services, Commission of Public Health, to D.C. Zoning Commission	38
Appendix B.	Proposed scope of work for Technical Consultant.....	43
Appendix C.	ILSR Advisory Team.....	44
Appendix D.	Organizational chart of the Solid Waste Management Administration	45
Appendix E.	Press release dated September 3, 1997 from Friends of the Earth	46
Appendix F.	Recent innovations in municipal recycling and solid waste management applicable to Washington, D.C.	47
Appendix G.	Waste Reduction Record-Setters.....	50

Executive summary

D.C.'s solid waste management system, which now faces major challenges that threaten the ability of the city to provide basic services, can be revitalized and save the city \$7.6 million annually (see table below). This can only be accomplished by taking a general view of the city's solid waste system, as opposed to focusing simply on component parts of the system, e.g., recycling, transfer stations, privatization.

Potential costs, savings, and earnings compared to the DC proposed FY1998 solid waste budget as a result of implementing ILSR's recommendations, assuming 35% recycling and composting rate and renovation of city transfer stations
(figures expressed in million dollars per year)

Savings from avoided trash collection costs	4.0
Savings from avoided trash disposal costs	3.7
Increased costs for recycling & composting	1.8
Subtotal	5.9
Earnings from Fort Totten/Benning Road improvements	1.7
TOTAL	7.6

The warning signs for residents and government officials are clear:

- Budget cuts from FY92 to FY98 have left the system vulnerable, as workers and machines have been pushed to their limits. Workers' wages have been cut, and their routes have been extended. Trucks break down so often that basic services (alley clean up, street cleaning) cannot be provided.
- D.C.'s private transfer stations receive half their waste from outside the city making the city a dumping ground for 3 million suburbanites. The city has had a regulatory vacuum that invited improperly sited and operated facilities. The city's basic public nuisance laws have not been enforced to protect residents and businesses.
- D.C.'s public solid waste transfer stations have deteriorated to the point where they have only 40% of their original capacity; thus, they can no longer allow small D.C.-owned hauling companies to use the facilities. As a result, 60 firms have gone out of business, and 350 jobs for District residents have been lost.
- Recycling efforts, which could *save* the District millions of dollars in avoided waste disposal costs, have been abandoned twice by the Department of Public Works (DPW) leading to additional costs to District taxpayers—despite the

passage of a mandatory recycling law by the City Council in 1988 (D.C. Law 7-226) which requires both households and businesses to recycle.

Consultants of the District of Columbia Financial Responsibility and Management Assistance Authority (the Control Board) have confirmed the shortcomings of the Solid Waste Management Administration (SWMA). They propose measures to restructure and retrain SWMA management staff. With regard to operations, they propose (i) staggering workshifts to reduce overtime pay by \$1 million annually, (ii) a 3-year, \$15 million phased-in investment in new fleets, and (iii) privatization of the city's transfer stations in order to save \$700,000 annually.

However, the Control Board's consultants do not address recycling. Without a core recycling program, savings anticipated by the Control Board's consultants may not be realized. With recycling programs at the core of the city's solid waste management system, savings and earnings for the city can be increased beyond those anticipated by the Control Board's consultants. Recycling will reduce the number and size of new trucks needed and reduce the capital needs of a new transfer station. The system needs to be "right-sized" and "down-sized" at the same time. Because the Control Board's consultant's report does not consider recycling, the wrong configuration of equipment is called for.

Citizens and workers, while discouraged and often angry at SWMA's shortcomings, are enthusiastic about the opportunities for change and want to participate in solutions to these problems.

ILSR has undertaken a broad review of city and private sector practices, and talked to a wide spectrum of industry, government, worker, environmental, and community representatives in the preparation of this report on how the city could approach its solid waste management system.

Among the key recommendations of this report are:

administration

- Elevate the existing SWMA to an independently operated and financed department with cabinet level status.

recycling

- Reintroduce recycling and yard debris collection programs (composting) along or in conjunction with a comprehensive public awareness and in-school education program.
- Reintroduce regulation of the private sector mandatory recycling law which requires all businesses and apartment houses to recycle.

fleet revitalization

- Invest immediately in new fleets for solid waste, recycling, and street cleaning operations. Draw funds from the general budget (federal payment) or a special bond issue to accelerate productivity improvements.

transfer stations

- Establish solid waste transfer station zones for private and public transfer stations.
- Adopt state-of-the-art siting and licensing ordinances, based on reviews of ordinances from other jurisdictions, as detailed in the testimony and written submission of D.C. Commission of Public Health, Department of Human Services, to the Zoning Commission (see Appendix A).
- Modernize existing city-owned solid waste transfer stations or build new transfer station(s) at different sites.

privatization

- Provide cost data to union officials so they can bid on all Requests For Proposals (RFPs) as in other cities (e.g., Indianapolis, Philadelphia, and Austin, Texas)

The findings and recommendations in this report are based upon a preliminary review of the solid waste management system in the District, and should be regarded as a compendium of issues deserving further and more serious consideration. In many cases, ILSR did not have access to important data that would have assisted in the preparation of this report. Nevertheless, ILSR is confident that its findings and recommendations point the city in the proper direction for solving pressing economic, environmental, and social issues related to solid waste management; and we are convinced that the District of Columbia can improve its performance standards and operational efficiencies in solid waste management.

ILSR is circulating this report in cooperation with Friends of the Earth, which will be conducting a series of meetings at ANCs throughout the city with ANC Commissioners and members of the City Council to discuss solid waste problems and potential solutions with District residents and business leaders.

The DPW took an important step forward by issuing an Invitation for Bids (IFB) to the private sector for curbside recycling in August 1997; however, implementation of this contract has been delayed. Recycling is a viable and cost-effective service in many cities across the country. For example, Worcester, Massachusetts (a city which serves 50,000 households, as compared to Washington, D.C.'s 100,000 households), reached a recycling rate of 52% in 1996 with no increased solid waste management

costs per household. Further, Worcester reached this diversion level less than two years after program implementation.

ILSR finds that only by making recycling and composting core SWMA programs could the city achieve savings on a sustainable basis. As a direct result of recycling and composting efforts, ILSR concludes that the city can save \$5.9 million annually at a 35% recycling level.

Preface

In 1991, ILSR produced its first report on recycling in the District of Columbia (*Recycling and Economic Development in Washington, D.C.*). In 1995, ILSR reported again on the District's recycling efforts (*Recycling Means Business in Baltimore, D.C., and Richmond*).

Thinking about Solid Waste Management in the District of Columbia offers a broad overview of the major solid waste issues facing the Nation's Capital today. ILSR hopes that, regardless of whether or not our specific recommendations are adopted, the report will help focus the attention of District residents, businesses, and government officials on the need for community building, civic participation, and long-term entrepreneurialism in the effort to find permanent solutions to the city's difficult solid waste management situation.

In a larger sense, we find that—in addition to the economics of solid waste management disclosed in our report—there are lasting considerations that go beyond "the bottom line." First, for example, recycling is popular among residents and the city's collection workers. Both groups feel good about themselves and their community when they recycle, which contributes to the quality of life in the Nation's Capital. Participation in recycling can also be a springboard to other civic participation.

Second, the success of locally owned, independent hauling companies contributes to the long-term economic health of the District; prudent municipal policy should encourage the jobs and tax revenues that these small firms bring to our city. However, policies that steer solid waste services to a few national corporations—with fewer roots in the community—bring less benefit to the District, and provide stiff competition to local entrepreneurs.

Third, grassroots citizen participation should be a part of the decision-making process. When government agencies and large corporations make decisions without citizen involvement, they often opt for the "simple solution" (i.e., a large incinerator or a mega landfill). Citizen groups, however, are rooted to their community, and want what works best: inexpensive and efficient city services, the promotion of local businesses and environmental sustainability.

This report challenges decisionmakers to find economically viable solutions that nurture community building, ecological soundness and entrepreneurialism; we believe these are critical factors that help bring sustainable development to the District and its residents.

I. Introduction

This study, undertaken at the request of Mr. Harry Thomas, Chair of the Committee on Public Works and the Environment, Council of the District of Columbia, examines the current situation of the solid waste management system in the District of Columbia, and offers recommendations for making substantial improvements in operational efficiencies and standards.

To assist in carrying out this study, ILSR formed an advisory team (see Appendix C) comprised of solid waste workers, civil servants, elected officials, neighborhood activists, environmental activists, haulers, union officials, and recycling company and trade association executives. ILSR, a research and technical assistance organization based in the District of Columbia, has been analyzing the District's municipal and commercial waste since 1991, with support from local corporations, foundations and the U.S. Environmental Protection Agency.

In recent years, the District of Columbia has suffered from serious failures in its solid waste services. For example:

- Recycling efforts, which could *save* the District millions of dollars in avoided waste disposal costs, have been abandoned twice by the DPW leading to additional costs to District taxpayers—despite the passage of a mandatory recycling law by the City Council in 1988 (D.C. Law 7-226).
- The Benning Road waste incinerator has fallen into disrepair, and was officially closed in 1995.
- The Fort Totten waste transfer station, designed to handle up to 2,500 tons per day, can currently process only 700 tons per day.
- The community of small haulers, so-called "mom and pop" operations, which were mostly family-owned companies with 1-3 compactor trucks and 5-10 employees, has suffered greatly as a result of the decline of the Fort Totten and Benning Road transfer stations. As a result of the closing of Fort Totten to these companies in the mid-1980s, virtually all these haulers—an estimated 60 companies—have gone out of business. These companies were owned by District residents and employed approximately 350 workers. They could not compete with larger companies that own transfer semi-trailers and use them to haul solid waste 70 miles to and from the Lorton landfill and incinerator complex.
- The failure to articulate and enforce regulations regarding transfer stations has led to serious abuse of the District by waste disposal service providers; each day, hundreds of heavy solid waste trucks travel through residential and business

neighborhoods causing structural damage to streets, homes, and offices and creating offensive noise, inconvenience, and odors for District residents and workers.

- The District's fiscal crisis has given rise to cost-cutting efforts rather than efficiency improvements. Thus, short-term savings have led to long-term increases in costs.
- A lack of internal fiscal controls within the DPW over the SWMA budget has led to the diversion of funds from the SWMA to other DPW divisions (over \$12 million was diverted from the Recycling Trust Fund to other DPW divisions from 1989 to May 1995).¹
- SWMA's proposal to privatize the Fort Totten and Benning Road transfer stations, coupled with recent wage cuts, furloughs and route extensions, have created a crisis of confidence between management and workers and have threatened the *esprit de corps* of the District's waste collection and disposal workers.
- DPW has had significant problems with awarding contracts, ultimately contributing to the cancellation of recycling in January 1997.² The city was recently ordered to pay over \$1 million to a company that bid on the recycling contract due to improper procedures.³
- Enforcement of the District's commercial recycling ordinance has not been effective. With proper programming and enforcement, District businesses could recycle a greater portion of their waste.

These events reflect the urgency of the solid waste disposal situation in the District and the need to find immediate and long-term solutions. This report, though only preliminary in nature, offers tangible ideas on how to fulfill the District's potential in implementing an efficient, state-of-the-art solid waste management system. A major foundation of that effort rests on the remarkable efforts and common-sense ideas of the District's solid waste workers, haulers, materials processors, civic activists, and environmentalists. This report builds on their ideas.

¹ *Audit of the District of Columbia's Recycling Program, September 29, 1995* (Office of the District of Columbia Auditor) pp. i, ii, 12, 14 and 28.

² See "D.C. Official to Urge Ban on Recycler," David A. Vise, *Washington Post*, January 27, 1997.

³ See *Washington City Paper*, November 28, 1997, page 10.

II. ILSR's recommendations

The District's operational inefficiencies are serious; however, solutions can be found and realized. ILSR makes the following recommendations:

administration

1. Establish budgetary autonomy for the SWMA within the DPW, or elevate the existing SWMA to an independently operated and financed department with cabinet level status.
2. Expand the union-management team problem-solving effort begun in Fleet Maintenance. Involve workers in essential decisions such as the type and configuration of trucks purchased and used.
3. Engage a technical consultant to assist SWMA staff in undertaking data gathering and analytical tasks (see Appendix B).

recycling

4. Reintroduce recycling and yard debris collection programs (composting) along or in conjunction with a comprehensive public awareness and in-school education program.

collection routes and fleet

5. Redesign the collection routes to enable the use of larger, more efficient collection trucks in outer-city streets and larger inner-city arteries, while continuing the use of smaller capacity trucks for narrower streets and alleys.
6. Make the ward-based service team concept permanent and applicable to each ward.
7. Convert second-day solid waste collection in the inner-city routes to a recycling collection day.

transfer stations

8. Establish a solid waste transfer station zone for private and public transfer stations.
9. Immediately and strictly enforce public nuisance laws.
10. Adopt state-of-the-art siting and licensing ordinances, based on reviews of ordinances from other jurisdictions, as detailed in the testimony and written submission of D.C. Department of Human Services, Commission of Public Health, to the Zoning Commission (see Appendix A).
11. Engage an independent real estate committee to identify professionally articulated standards for siting of public and private transfer stations in the District, based on testimony presented by D.C. Department of Human Services, Commission of Public Health, to the D.C. Zoning Commission on October 3, 1996 (see Appendix A).

12. Allow small, private hauling companies to use the city's modern transfer stations to unload their trucks.

privatization

13. Halt all privatization efforts until adequate comparisons can be made between the private sector costs and public operating costs using revitalized city facilities.
14. Issue an RFP for disposal capacity to determine the least-cost disposal site for the District's solid waste.
15. Undertake the study called for in the 1994 Solid Waste Management Plan to determine the economic feasibility of privatization. The study must compare the costs of private collection, transfer, and disposal with the costs of city workers performing these same tasks with a revitalized fleet and rehabilitated transfer stations.
16. Provide cost data to union officials so they can bid on all privatization RFP's as they have in other cities such as Indianapolis, Philadelphia, and Austin, Texas.
17. Reserve some recycling routes for city workers so comparisons of costs with privatized recycling services can be made.
18. Establish a management-union team to discuss the goals of privatization and how these goals may be accomplished.

III. Overview of the solid waste system in the District of Columbia

Background on the solid waste management system in the District

The District's current solid waste management system operates under the authority of the Department of Public Works (DPW)—Solid Waste Management Administration. The DPW carries out several vital functions of the District Government, for example, maintenance and repair of the city's streets and water and sewer systems, and snow removal. The Solid Waste Management Administration (SWMA) performs three main functions: (i) cleaning the city's streets and alleys, (ii) collection of solid waste, and (iii) disposal of solid waste (see Appendix D for an organizational chart of the SWMA).

The SWMA collects waste solely from single-family homes and apartment buildings of three units or fewer, representing only 26% (or about 224,000 tons) of the municipal solid waste generated annually in the District. Private companies collect and dispose or recycle waste from federal agencies, businesses, institutions (e.g., hospitals), construction sites, and apartment buildings with more than three units, representing about 74% (or about 635,000 tons) of the District's solid waste stream. Total solid waste generated annually in the city is about 859,000 tons.

The SWMA divides waste collection into two districts: the Brentwood district (Wards 3, 4 and 5) and the South Capitol Street district (Wards 1, 2, 6, 7 and 8). Waste is collected twice a week in inner-city areas (30,000 households) and once a week in other areas (70,000 households).

The city's collection trucks unload at either the Fort Totten or Benning Road transfer stations. The private sector's collection trucks unload at any of the following four transfer station locations: (i) 2160 Queens Chapel Road, NE (*Waste Management, Inc.*), (ii) 1220 W St., NE (*Browning-Ferris Inc.*), (iii) Uline Arena at 1140 3rd St., NE (*USA Waste*), and (iv) 1315 1st St., SE (*Eastern Trans-Waste*). The four private sector transfer stations handle waste generated not only in the District, but also handle waste collected in the immediate region. Approximately 50% of the waste handled by private transfer stations comes from *outside* the District.⁴

Combined, public *and* private transfer stations now handle almost all the solid waste generated in the District, due to the cancellation of curbside recycling by the District government on January 31, 1997. *It should be noted, however, that the District law still requires the private sector to recycle.* When the District had a recycling program, about 14% of the District's publicly collected residential waste and

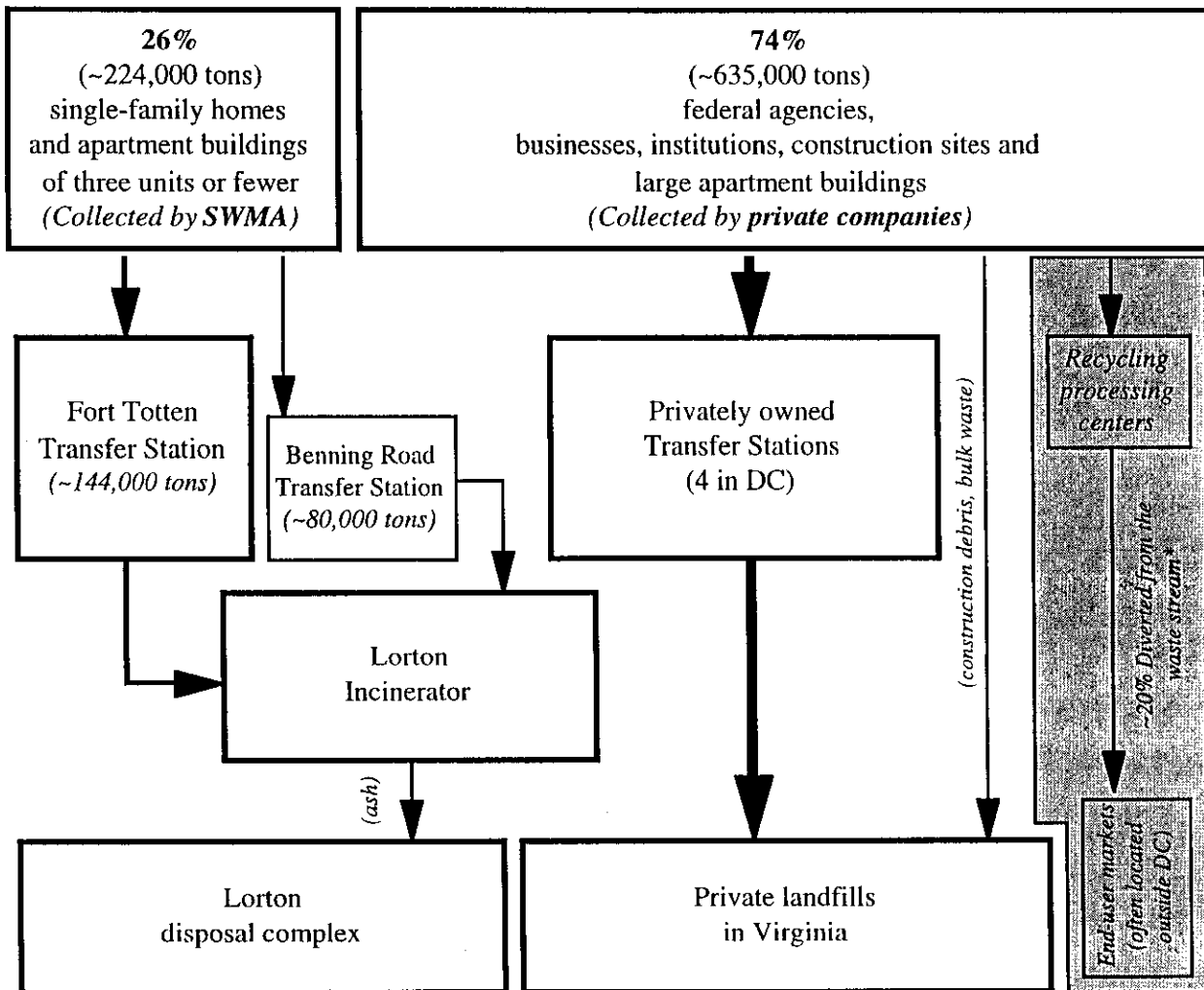
⁴ According to testimony presented by waste management firms located in the District of Columbia in trial of *American Environmental Services v. the District of Columbia*, as reported by Arrington Dixon to the National Capital Planning Commission at a hearing held on September 4, 1997.

20% of its private-sector waste was diverted from the waste stream. Today, the percentage of waste diverted by private companies is unknown.

From the District-operated transfer stations (Fort Totten and Benning Road), solid waste is transported 35 miles to the Lorton incinerator, where it is burned to recover its heating value. The ash is then landfilled at an adjacent site. The District does not have a contract requiring it to deliver its waste to this site. As a result, the District's recently issued Invitation for Bids (IFB) for hauling waste from Fort Totten and Benning Road would allow the bidder to take the waste wherever it desires. This is good for the District as it can now take advantage of lower disposal costs at other landfills, and it could also reduce pollution if less solid waste is burned.

Haulers generally take solid waste from the private transfer stations to private landfills in Virginia. Figure 1 on the following page provides an overview of the current solid waste stream generated by the District (tonnages are based on latest available data, i.e., FY1992 and FY1994).

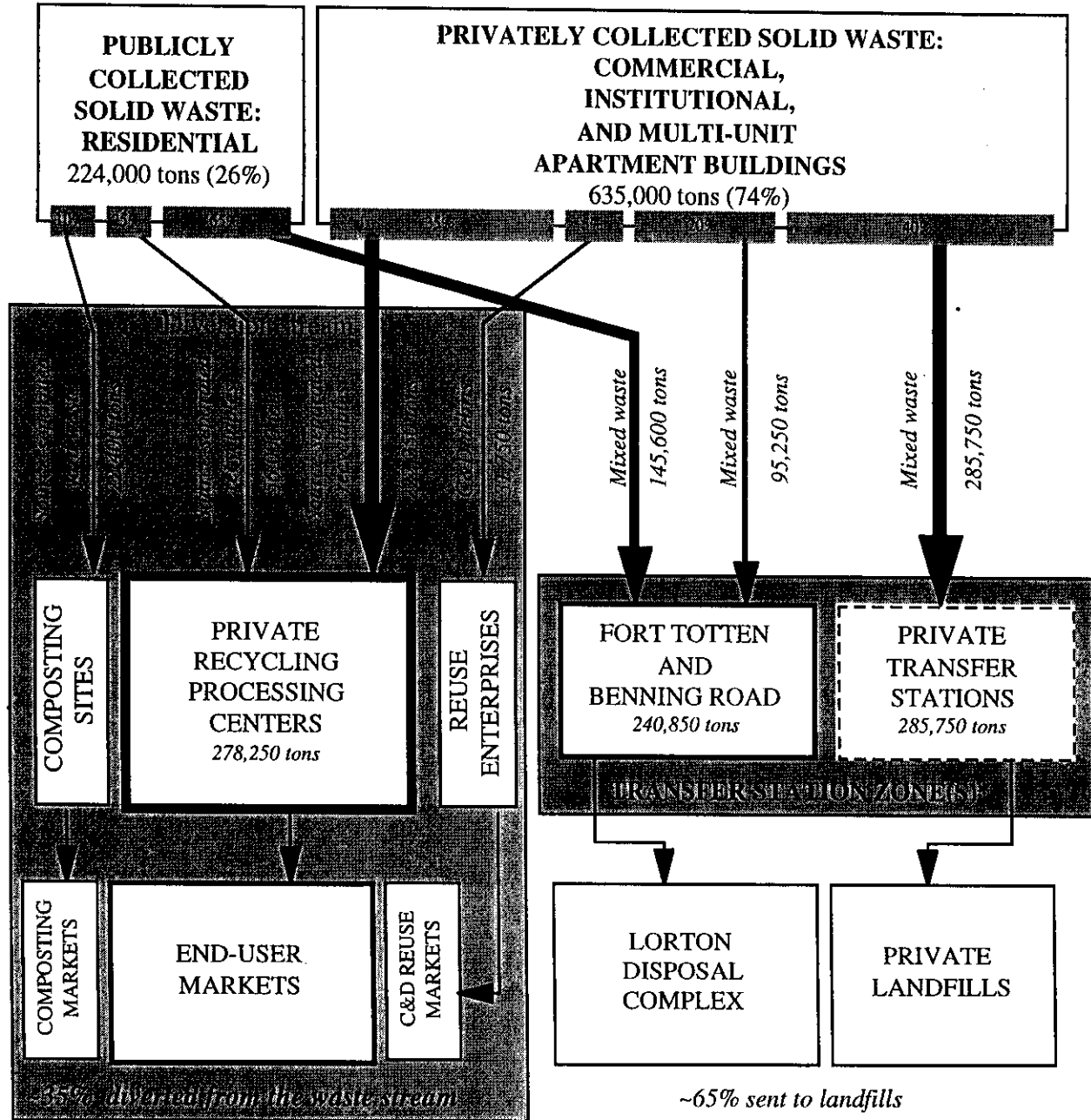
Figure 1. The solid waste stream in the District of Columbia
(~859,000 tons of total waste are generated each year)



* Estimated

An alternative solid waste stream, as envisioned by ILSR, might look like Figure 2 below.

Figure 2. Alternative solid waste stream in the District of Columbia



* The DC Zoning Commission currently is considering zoning requirements for transfer stations. ILSR recommends that the Zoning Commission require state-of-the-art standards for transfer stations which are already in place in municipalities across the nation.

Solid Waste Management Administration staff

The managerial staff of the Solid Waste Management Administration are working under difficult circumstances. As with the collection crews, the managerial staff is overburdened and must deal with crises on a daily basis. In addition, they do not have sufficient time to develop long-term plans. In particular, data gathering has been a problem, which inhibits the planning process. The Administration needs access to a technical consultant and additional staff assignments. In 1994, the city hired a consultant to prepare its Solid Waste Management Plan, but, despite an expenditure of an estimated \$500,000 to \$1,000,000, the report provided little practical assistance.

The SWMA does not have full control over its budget, equipment and/or labor allocation, which are subject to be reassigned to other divisions within the DPW. For example, funds collected from surcharges at the Lorton solid waste facility which were supposed to support recycling were redirected to other programs.⁵ If the SWMA is expected to undertake major organizational and programmatic reforms, it must be able to control its budget. Unless this autonomy can be established within the DPW, the SWMA should be established as an independent, cabinet level, agency.

⁵ *Audit of the District of Columbia's Recycling Program, September 29, 1995* (Office of the District of Columbia Auditor) pp. i, ii, 12, 14 and 28.

IV. Recycling

Introduction

Recycling is an integral component to sound civic management. In order to best serve the needs of its citizens, local government should (i) provide efficient services to its residents, (ii) promote sound economic development, and (iii) plan for the future. Recycling is an important component of this equation. It enables a cost-effective approach to solid waste management, promotes jobs in the community, and cuts down on the need to provide for future landfill space. It makes sense.

Third attempt at recycling in the District

The Department of Public Works (DPW) implicitly recognized the benefits of recycling on August 25, 1997, when it issued an Invitation for Bids (IFB) for the reintroduction of curbside recycling in the District of Columbia (see Appendix E for a press release reviewing the RFP, issued by Friends of the Earth). The IFB represents the city's third attempt at recycling (recycling was twice implemented only to be suspended each time, once in May 1995 and again in January 1997).

The anticipated start-up date for the reintroduction of curbside recycling in the District is April 1998. Recycling proponents are disappointed in the delay in restarting recycling which was originally supposed to start in October 1997, and fear that funds for recycling will once again be spent on other programs.

According to the IFB, the winning contractor will "provide weekly curbside collection of residentially generated recyclables including newspapers, corrugated containers, magazines, telephone books, glass food and beverage containers (clear, green and brown), metal food and beverage containers, and plastic containers with the codes #1 and #2."⁶ This is an improvement over the previous recycling program as more materials will be accepted from households. The IFB calls for a series of one-year contracts, subject to the District's option to extend the contract for up to four one-year periods.

Under the terms of the third addendum to the IFB, the "contractor shall deliver collected recyclable materials to a materials recycling processing facility(ies) (MRPF) or end market(s) of the contractors choice *once that MRPF or end market has been approved by the District.*"⁷ There is no provision that would require the winning contractor to process recyclable materials in the District of Columbia; however, the third addendum gave the District the authority to do so. Estimates on the number of jobs at MRPFs generated from the reintroduction of recycling in the District range from 40 to 50. For purposes of economic development and strengthening the

⁶ Invitation for Bid No. OMS-7052-AA-NJ, issued by the DPW on August 25, 1997, p. 5 (as amended by Addendum No. 2 and Addendum No. 3).

⁷ Addendum No. 3 to IFB OMS-7052-AA-NJ, p. 17R (italics added).

District's tax base, ILSR supports actions requiring the winning contractor to use MRPFs located in the District.

According to a spokesperson from the DPW, the city has budgeted \$2.4 million for recycling; however, this funding could be threatened by a recent settlement of a lawsuit filed against the city whereby the plaintiff, Recycling Solutions, Inc., will receive over \$1 million. Although DPW favors "managed competition,"⁸ the city's deficient cost-accounting system made it impossible to provide sufficient cost data to the union which would have allowed it to bid on the IFB. The city, therefore, is not in a position to know whether its workers could offer a least-cost recycling system, as has been achieved in other municipalities (e.g., Indianapolis). The city is in the process of modernizing its cost-accounting system; the system needs to be in place before the city decides whether or not it should exercise its option on recycling services next year.

ILSR suggests that the DPW contract out only part of the recycling collection routes to keep a sufficient number of routes in-house so as to be able to have comparative cost data. This calculated division of responsibilities would not be unprecedented. The city of San Diego has some recycling routes operated by its DPW and others are contracted out to the private sector.

Providing efficient city services through recycling

Despite DPW's recent issuance of the IFB, DPW's past performance and statements suggest that the Department has a perfunctory commitment to implementing a successful recycling program, and that it remains unconvinced about the benefits recycling would bring to the District. As recently as last May, it argued that savings and efficiencies gained by recycling are overstated and that "reinstatement of curbside recycling would require expenditures not provided for in the FY1998 budget."⁹

Not surprisingly, recycling is not even mentioned in SWMA's mission statement, vision or strategy.¹⁰ This is not a good sign for recycling. A successful program that maximizes recycling and reduces disposal must have committed program managers—public servants who think in terms of recycling in order to identify inefficiencies in the system and opportunities for cost-saving improvements. For example, the city currently collects leaves and yard waste separately in the fall

⁸ "Managed competition" invites bids on city services from city workers, in addition to bids from the private sector.

⁹ Letter from the Department of Public Works dated May 29, 1997, to Harry Thomas, DC City Council Chairperson, Committee on Public Works and the Environment.

¹⁰ See *Final Report for Task 1 Organizational and Program Assessment for the District of Columbia Department of Public Works Management Reform Project* (DCFRA#97-R-031). Submitted by Managing Total Performance, Inc. in association with TransManagement, Inc., David M. Griffith & Associates, Ltd. (October 1, 1997), Appendix 1.

months; however, because the city does not have bag breaking capacity at its composting site on Children's Island—equipment that costs approximately \$100,000—most bags of yard waste are burned at the Lorton incinerator where the tip fee is \$39 per ton and transfer and hauling costs are estimated at \$12 per ton. ILSR estimates the proper investment could save up to \$1 million annually.

ILSR's preliminary estimates suggest that the District could save approximately \$5.91 million annually by implementing a recycling and composting program with a diversion rate of 35%. By reducing the amount of solid waste through recycling and composting programs, the city requires less capacity and operating costs to collect, transfer, and dispose of waste.

ILSR assumes that a citywide recycling and composting program will cost \$4.2 million (recycling, \$2.4 million; composting, \$1.5 million; education, public awareness, and tech-assist/enforcement, \$0.3 million annually). In combination with recycling and composting, new routing could account for the special needs of inner-city routes (where small trucks are necessary) and outer-ring routes (where larger trucks could lead to significant reductions in costs). Solid waste costs would also be reduced through the elimination of the second weekly solid waste pickup from 30,000 inner-city households. The second pickup would not be needed as residents will reduce their solid waste through recycling. In addition, the system would reduce solid waste collection costs, transfer and hauling costs, and tip fees at the Lorton incinerator.

Table 1. Potential savings by implementing ILSR's recycling recommendations*
(Figures expressed in million dollars)

Budget item	FY1998 Proposed**	FY1998 ILSR's Proposed Budget	Potential Savings (35% diversion)
Solid Waste Collection	8.20	4.20	4.00
Recycling & Composting	2.40	4.20	(1.80)
Solid Waste Disposal	12.31	8.60	3.71
Total	22.91	17.00	5.91

* ILSR calculations are based on the limited data made available at the time of writing. A detailed analysis of full data is required. We do not include potential revenues gained from the sale of recovered materials. Under the proposed recycling contract with private haulers, the city will share revenues from sale of materials depending on market prices. Recycling is a solid waste service that saves money by cutting down on solid waste disposal costs.

** Based on estimates from the Department of Public Works prior to the DPW's release of its RFP for recycling on September 1, 1997.

Potential savings in solid waste collection would come largely from improved collection vehicles (for a discussion of savings from improved collection fleets, see "*Fleet redesign and capital investment*").

Sound economic development: jobs

Recycling and other waste reduction efforts will not only benefit the city budget, but also the local economy. Just sorting and processing recyclables sustains ten times more jobs on a per ton basis than landfilling or incineration. Recycled paper brokers and processors as well as secondary plastics grinders and pelletizers could create additional jobs. Composting leaves, grass clippings, and other yard trimmings employs four times the number of people as disposal options, and reuse of products (such as appliances, computers, textiles, wood pallets, and miscellaneous durables goods) sustains 17 jobs for every job at a landfill. Reuse enterprises, composting facilities, and recyclables processing operations can all be established within the city's borders. These businesses could handle public as well as private sector generated materials and potentially create more than 400 jobs for the District. (See Table 2 on the following page.)

Making new products from the old offers the largest economic pay-off for the region. New recycling-based manufacturers employ even more people and at higher wages than processing operations. But manufacturers need guaranteed supplies of high-quality recyclable materials. The metropolitan areas that have attracted new recycling enterprises have done so because of their cities' aggressive recycling programs. Since Philadelphia implemented curbside recycling in 1986, the number of recycling-based jobs in the Philadelphia region has more than doubled to 1,420. Numerous studies have confirmed the economic development benefits recycling provides. For example, in the State of Washington, recycling has created 16,700 new jobs in recycling by year-end 1994, including 13,000 jobs in the high-wage manufacturing sector. The Commonwealth of Massachusetts estimates that secondary-materials manufacturers directly employ nearly 12,000 people, ranging from small companies to large-scale manufacturers. These manufacturers create an additional 50,000 associated jobs and contribute \$600 million to the Massachusetts economy annually.¹¹

The District of Columbia and its surrounding region could likewise create hundreds more recycling-based jobs and businesses if comprehensive recycling programs were implemented in the public and private sectors. In 1995, ILSR conducted a study that showed more than 6,600 jobs could be created in the DC region should the region

¹¹ *Washington State "Future of Recycling Study," Final Report to the Governor of the State of Washington, Executive Summary*, (submitted by The Future of Recycling Task Force, November 1996), p. 5; and *Massachusetts Solid Waste Master Plan, 1997 Update: Draft* (Commonwealth of Massachusetts, Executive Office of Environmental Affairs, July 1997), p. 1.

reduce its waste, achieve high recycling rates and utilize a large percentage of its recovered materials locally.¹²

Table 2. Potential recycling-related jobs in the District of Columbia

		Jobs
Public sector		
Yard waste: composting		9
Recyclables: processing		61
Subtotal		70
Private sector		
Recyclables: processing		241
C&D: processors		8
Paper processors		61
Plastics processors		34
Subtotal		344
Total		414

"C&D" is construction and demolition debris.
 Source: Institute for Local Self-Reliance

Planning for the future: landfill space

In many communities across the county, landfill shortages have made recycling imperative because it cuts down on the amount of waste going to landfills. Washington, D.C., however, currently enjoys relatively plentiful landfill space in its vicinity. As a result, the economic merits of recycling do not rest upon landfill shortages for the District. Recycling would, however, delay the need to find additional landfill space in the future, thereby preserving open land and natural resources and postponing the onset of additional transportation costs incurred by traveling to more distant landfills.

Support for recycling by District residents

Recycling has widespread support in the District, though District residents are frustrated by the District government's recycling performance.¹³ District residents

¹² *Recycling Means Business in Baltimore, D.C., and Richmond*, Brenda Platt, Henry Jeanes and Anne Kaufmann (Washington, DC: Institute for Local Self-Reliance, 1995), pp. 11-14.

have played a key role in promoting recycling in the city. Citizen support was instrumental in the City Council's passage of the mandatory recycling law in 1988. When confronted by recent setbacks, District residents have responded energetically. When the District government canceled recycling in 1995, citizen action compelled the SWMA to reinstate recycling just six weeks after it had been canceled. When recycling was canceled again in 1997, the voice of District residents was heard through the City Council, which passed a unanimous resolution to reinstate the program. The SWMA recently responded by issuing a RFP for recycling services. (See Appendix E for a press release reviewing the RFP, issued by Friends of the Earth.)

Residents in the District have expressed concern, a willingness to get involved and optimism that the District's problems of solid waste management can be resolved. In 1996, citizens concerned about trash piled up on city streets formed the League of 8,000 (the League). The League conducted research, presented findings showing that District's emergency vehicles could no longer use some streets due to illegally dumped trash, and won major victories with the passage of:

- (i) the Litter Bill (a new fine structure with an escalating schedule),
- (ii) the Clean Hands Bill (giving the city authority to deny city permits, including driver's licenses, if sanitation fees are unpaid), and
- (iii) the Illegal Dumping Act (a \$25,000 fine for 5 years and/or 5 years in prison for illegal dumping).

The League also was instrumental in the city's authorization of 24 additional sanitation inspectors and the reinstatement of bulk-waste collection in June 1997.

Community and small entrepreneurial recycling services also appeared throughout the District shortly after the District discontinued recycling in January 1997. High schools and teams started drop-off centers to earn money for their programs. One organization, *Thumbs Up*, based in the Adams Morgan neighborhood, has earned \$10,000 from residents supporting their network of week-end drop-off sites. These funds were paid directly to young people in the neighborhood who operated the sites. Eagle Recycling, Inc. supported the effort by donating trucks and drivers experienced in hauling materials to Eagle's processing facility. Browning-Ferris Inc. now intermittently provides this community service.¹⁴

Local environmental and civic groups have compiled data and prepared fact sheets which are distributed regularly through ANC, community, and church networks. A

¹³ See the report submitted to the D.C. Financial Control Board by Belden & Russonello, "Washington, D.C. Residents Study: Research Findings of a Citywide Survey" (June 1997). The report states nearly six in ten D.C. residents rate the District's recycling programs as poor or very poor.

¹⁴ See "Thumbs Down: Local Recycler Gets Dumped After Contract Possibilities Evaporate," Elissa Silverman, *Washington City Paper*, February 6, 1998, pp. 12, 13.

national environmental organization, *Friends of the Earth*, has initiated a community outreach program which is meeting with every ANC in the District, explaining the facts and options the city faces with regard to recycling and overall solid waste management. Friends of the Earth also coordinates the monthly "Bring Back Recycling" demonstration in front of the Mayor's office. Citizens pile their recyclables on the curb of The Mayor's Office Building on 4th Street, NW. The materials are taken to a local processing center for recycling. A coalition of grassroots recyclers has been formed around the monthly "Bring Back Recycling" demonstration, the Campaign to Restore Recycling in the District. Throughout this period the D.C. Chapter of the Sierra Club filed law suits to force the city to resume recycling. These law suits helped keep the issue alive in the press and in the public eye.

Support for recycling within the business community

The business community in the District supports recycling, as expressed by the National Soft Drink Association, Coca-Cola Enterprises, and the D.C. Association of Beverage Alcohol Wholesalers in a recent meeting with the Grassroots Campaign to Restore Recycling. These businesses agreed to seek support for curbside recycling from the District Chamber of Commerce, the Washington Board of Trade, and newspaper editors. On July 18, 1997, the District Chamber of Commerce wrote a letter of support for recycling. In a letter dated August 5, 1997, the Board of Trade stated its support for recycling. Further, the National Soft Drink Association has indicated its interest in exploring corporate support for a network of modern drop-off centers, new recycling bins, and public awareness and in-school recycling education programs, all in an effort to help build a sustainable recycling program for the District of Columbia.

Support for recycling by collection workers

Though ILSR has not conducted a comprehensive survey of the District's collection workers, our involvement and discussions with collection crews and union representatives convinces us that SWMA's collection work force supports recycling. Workers have told ILSR that although some distrusted recycling at first because it would add time to their routes, they soon realized that recycling is (i) cleaner and easier work (recyclable materials are organized and contained, whereas solid waste is ungainly and sloppy and takes more time to handle), and (ii) residents support it, making their jobs more rewarding. In fact, when recycling was canceled again in 1997, workers pointed out that the city extended collection routes making their work day longer than when recycling was in place. On the other hand, SWMA's assessment of post-recycling collection routes shows that while loads were heavier after the cancellation of recycling, the length of collection routes stayed the same.

Recycling's impact on transfer stations

Comprehensive recycling reduces the District's overall waste stream and cuts down on the amount of solid waste flowing to transfer stations. As a result, recycling decreases the District's dependence upon transfer station capacity, thereby making it easier to eliminate, reduce, or relocate the existing transfer stations in the District.

Increasing the District's recycling diversion rate

According to the SWMA, before the cancellation of recycling, the diversion rate was 13% for public-sector collected waste. ILSR attributes the District's weak performance to at least three major factors: (i) public awareness programs were not comprehensive, (ii) school-based recycling education was virtually non-existent, and (iii) the indecision of the District government to execute a committed effort to recycling (as shown by its discontinuation of recycling in 1995 and 1997) resonated throughout the community creating confusion and poor diversion rates.

Model recycling programs from cities across the U.S. suggest that in many cases, *the threshold amount for recycling to lower overall costs is the diversion of 25-35% (recyclables and compostables combined).*¹⁵ Further, communities with mandatory recycling legislation, as in the District, that have implemented comprehensive recycling and composting programs have reached 35% recycling within the first year of program startup. Appendices F and G provide a review of recent innovations in cities across the nation that might be used in the District to improve its diversion rate. Table 3 shows jurisdictions (with populations of 100,000 or greater) that have reached 35% diversion rates. For more information on these record-setting waste reduction programs, see Appendix G.

¹⁵ Brenda Platt, et al, *Beyond 40 Percent: Record-setting Recycling and Composting Programs* (Washington, DC: The Institute for Local Self-Reliance, 1991), and Peter Anderson, et al, "Debunking the Two Fleet Myth," *Waste Age*, October 1995.

**Table 3. U.S. jurisdictions with 35% or greater solid waste diversion rates
(with populations equal to or greater than 100,000)***

Jurisdiction	Population	Diversion rate
<i>East</i>		
Monroe County (incl. Rochester), NY	713,968	68%
Onondaga County (incl. Syracuse), NY	463,000	64%
Worcester, MA**	165,387	52%***
Paterson, NJ	138,290	47%
Allentown, PA	105,339	45%
<i>Southeast</i>		
Hillsborough County (incl. Tampa), FL	892,874	41%
Pinellas County (incl. St. Petersburg), FL	876,200	45%
Duval County (incl. Jacksonville), FL	718,355	38%
<i>Midwest</i>		
Hennepin County (incl. Minneapolis), MN**	1,053,467	50%
Ramsey County (incl. St. Paul), MN**	482,115	47%
Madison, WI**	200,814	49%***
Ann Arbor, MI**	112,000	52%***
<i>West</i>		
San Jose, CA**	849,363	43%
Seattle, WA**	534,700	44%
Portland, OR**	497,600	50%
Tacoma, WA	183,060	40%
Bellevue, WA**	103,700	60%***

* This table is not exhaustive. Recovery rates were not obtained for more than 100 communities with populations greater than 100,000.

** ILSR performed due diligence in confirming the diversion rates in these jurisdictions. All other rates were reported by respective communities.

*** Applies to residential solid waste stream only. All other diversion rates apply to total solid waste stream (including commercial waste).

Service District Manager Program

Reaching a 25-35% rate or even higher is likely, should the District adopt a comprehensive recycling and composting campaign. Collection workers are sure that residents would do more to cooperate, and that this cooperation would be enhanced by the extension of a ward-based pilot program currently underway within the SWMA (called the "Service District Manager Program"). In this

program, collection workers, street cleaning crews, and bulk waste collection crews would be formed as a team to serve only assigned wards. Much like the "beat-cop" system, the ward-based team concept would improve the delivery of city services by familiarizing the work force with neighborhoods and vice versa. The ward-based team would be more sensitive to households and businesses where compliance with city programs is poor, and it would be in a better position to assist and educate District residents and businesses on compliance.

Public-awareness and in-school education campaign

A critical element to any successful recycling program is "recycling literacy," the informed and educated participation of the population. In order to motivate residents to participate in source-separation programs and instruct them how to comply with collection requirements, many communities—such as nearby Falls Church, Virginia—undertake comprehensive educational and promotional programs. To target as wide an audience as possible, communities utilize techniques such as recycling information sheets, newsletters, posters, utility bill inserts, and especially print and broadcast media, with their ability to reach the broadest segment of the population. Some communities promote recycling through in-person education (e.g., door-to-door visits, recycling booths at county fairs, or "block leader" programs), which can be particularly effective.

Block leader programs actively promote recycling through neighbor-to-neighbor communication. Boulder, Colorado, successfully initiated a block leader program, which is run by a community-based recycling company. During the first year of the program, a study revealed that participation rates were over two times those without such programs. Falls Church, Virginia encourages citizens to participate in its Recycling Block Captain program. The Falls Church block captains quarterly distribute recycling information in their neighborhoods, and serve as liaisons between the city and other residents.

Education programs directed at school-age children play a vital role in the long-term success of a recycling program. Many communities utilize formal or informal recycling curricula to teach recycling concepts. For example, Newark, New Jersey created the Recycling Rangers to encourage students to spread the word about recycling to their parents. In the District, ward-based teams (under the Service District Manager Program) should also be integrated into an in-school environmental and education program in the public schools in their respective wards.

Further, school-to-work and school-to-career programs are critical for high school students. In the Washington D.C.-Baltimore area, Waste Management, Inc. and Browning-Ferris, Inc. have undertaken significant steps to train, educate and employ public high school students (e.g., academic, scholarship, internship, and mentoring programs). Their actions have been voluntary, and need to be expanded with the full cooperation from the public school system.

The IFB also calls for the winning contractor to "develop and distribute public education materials to inform District residents eligible to receive recycling services under this contract..." and it states that "public education material ... shall be reviewed and approved by the technical representative before being printed and distributed."¹⁶ The IFB further states that the District will "assist in the development of promotional materials (public education) to inform residents of the changes in the curbside recycling program and have final approval of all projects."¹⁷ According to a spokesperson from the Solid Waste Management Administration, the DPW is currently drafting a public-awareness program. However, ILSR does not believe the District has budgeted for adequate in-school education and public awareness programs. We estimate these programs to cost \$300,000.

Compliance with, and enforcement of, private sector recycling regulations

The District Government is not directly responsible for waste generated by the private sector, businesses, apartment houses, and government buildings; however, these entities are required by D.C. law to recycle.

In order to encourage private sector participation in solid waste reduction programs, municipalities have adopted some of the following strategies:

- Mandate that businesses and institutions recover a wide range of recyclable and compostable materials
- Prohibit disposal of specific materials such as yard trimmings in landfills and incinerators
- Require businesses to submit reports on the amount of materials recovered
- Inspect businesses to see if they are meeting requirements
- Institute economic incentives targeted at businesses (e.g., reduced or no tipping fees at recycling drop-off sites, and lower franchise fees and tax relief for haulers who recycle private sector solid waste)
- Require haulers to provide a minimal level of recycling service for a wide range of materials and/or volume-based trash fees
- Provide technical assistance (e.g., conduct waste audits, disseminate lists of drop-off sites and private recycling services, assist businesses and haulers with marketing recovered materials)
- Provide municipal pickup of a wide range of commercial/institutional recyclables and/or convenient drop-off depots that accept materials generated by the commercial and institutional sector.

¹⁶ Invitation for Bid No. OMS-7052-AA-NJ, issued by the DPW on August 25, 1997, p. 15.

¹⁷ Ibid., p. 26.

In the District, public education and technical assistance programs should be implemented to inform and assist the private sector. Enforcement should be a last step in the process of expanding recycling in the private sector.

V. Trash collection

Background

The District of Columbia of the 1990s is still largely the product of 18th-century urban design; with regard to the collection of solid waste, trucks in the District must cope with narrow alleys and turns that were not designed for modern heavy equipment. In contrast to suburban jurisdictions where large trucks of 33-cubic-yard capacity can swiftly navigate wide streets, the District has been forced to use smaller capacity trucks of 16- and 20-cubic-yards. As a result, collection trucks in the District fill up faster and have to be tipped at a transfer station several times during each route, adding time to solid waste collection and creating costly inefficiencies. Collection trucks in the District routinely make three trips to a transfer station during one route. On inner-city routes, trucks may go to a transfer station as many as five times per route.

Mobile transfer stations in various locations (e.g., the RFK Stadium parking lot and the Carter Barron parking lot) have been suggested as a possible solution to the problem. Mobile transfer stations would allow collection trucks to tip their loads closer to their routes and thereby save fuel, and travel and crew time. The technology and equipment for efficient mobile transfer is state of the art; however, it appears likely that significant opposition from parking lot managers and nearby residents would create major obstacles to the implementation of this suggestion.

Reconfiguring collection routes and fleet composition

Another possible strategy for alleviating the District's predicament may lie in reconfiguring the District's collection routes to allow use of larger, more efficient trucks. With sufficient data and route-planning techniques, routes could be developed in outer-city areas, or along larger inner-city arteries, where it would be possible to accommodate 33-cubic-yard vehicles. These routes would then be complemented by routes for smaller trucks serving the inner-city routes. Complex calculations of optimal fleet size and composition would be necessary before proceeding with this plan, and detailed data would be needed on (i) waste generation throughout the District, (ii) number of people per household, (iii) truck volumes, (iv) packing ratios, (v) average daily working hours of trucks and crews, (vi) locations of transfer stations, and (vii) the time involved in unloading collection trucks at transfer stations (among other factors).

Fleet redesign and capital investment

ILSR estimates the city could save \$4.0 million per year by revitalizing its fleet, when recycling and new routes for inner-city and outer-ring areas of the city are implemented.

A report issued by consultants to the D.C. Financial Responsibility and Management Assistance Authority (the Control Board) concluded that \$3.2 million could be saved by renovating the vehicle fleet over a 3-year period (at a total cost of \$15 million). (The consultants' report also found that the city could save \$1.1 million annually in overtime costs by staggering the starting time of crews; however, the report did not address the potential impact of recycling on the collection and disposal system.)

ILSR's preliminary estimates show that capital investment for a revitalized fleet would total \$11.25 million.¹⁸ This investment would bring in a new fleet of 45 compactor trucks, 20 recycling vehicles, plus a number of dump trucks and small-service trucks. ILSR believes that \$4 million could be saved annually through this investment, based on efficiency improvements such as (i) the proper number of vehicles available, (ii) proper configuration of vehicles, (iii) vastly improved reliability of vehicles, (iv) curbside and drop-off recycling, (v) elimination of second-day solid waste collection for 30,000 households, (vi) reduced overtime pay, and (vii) revised routes for inner-city and outer-city areas allowing for optimally sized vehicles for routes. It should be noted that these estimates are preliminary, and may differ from the findings of the Technical Consultant (see Appendix B) with the necessary time and resources to undertake a formal analysis.

Whatever fleet revitalization program is adopted, it is essential that the investment be protected by a preventive maintenance program that is in place when new vehicles are obtained and put into service. Otherwise, new vehicles will quickly become inoperative, as has recently occurred.

Conversion of second-day solid waste collection into recycling collection

ILSR estimates that the District's second-day solid waste collection meets roughly one quarter of the city's collection needs for 30,000 inner-city households.¹⁹ Therefore, if the city were to divert one quarter of its solid waste into recyclable materials, it could convert its second-day solid waste collection to a recycling-collection day for these households at virtually no cost.

Elimination of second-day collection has offered real savings to taxpayers in other communities. For example, Montgomery County, Maryland recently eliminated

18 45 compactors at an average cost of \$150,000 = \$6.75 million
20 recycling trucks at an average cost of \$125,000 = \$2.5 million
Dump and pickup trucks = \$2 million.

19 Workers on the District's conventional collection routes estimate that, on the first collection day, full loads are hauled to a transfer station at least 3 times per route and often as many as 5 times. On the second collection day, only 1 or 2 full loads are hauled to a transfer station. These figures indicate first-day to second-day load ratios of 3:1 (the low-case) or 5:2 (the high-case); translated into percentages, the second-day collection would comprise just 25% of total collections in the low-case estimate or 28% in the high-case estimate.

second-day collection for 38,000 households, (in addition to the 44,000 households in Silver Spring, Wheaton, Chevy Chase and Bethesda that already had solid waste collection once per week). As a result, the fee for weekly service is \$55.61, compared with \$102.02 for two pickups per week. The new pickup schedule in Montgomery County reflects the changing world of waste disposal where expensive collection routes are eliminated through the diversion of materials into recycling.²⁰

In the District of Columbia, canceling second-day collection (in concert with recycling and composting) could save the District approximately \$276,000 in collection costs per year.

Strains on the trash collection system

Over the past several years, the District government has significantly cut its budget for solid waste services. The staff within the Solid Waste Management Administration should be commended for providing the District with fine service, given the declining resources with which they have had to work (SWMA's overall expenditures have fallen from \$35.1 million in 1992 to \$32.3 million in 1998). A recent poll of District residents shows that 44% of those surveyed believe that trash collection in the District is excellent or good, while 28% believe it is fair. Few other city services were rated higher. For example, metro-rail, bus service, libraries, and fire protection were rated higher but crime protection; services for low income, unemployed, and homeless residents; public schools; and street repair and maintenance were rated much lower.²¹

Despite the ingenuity of solid waste staff and workers to make due with less, the solid waste system in the District is drained of resources. Here are some warning signs:

- (i) out of the forty trucks needed to collect trash in the District, quite often only about thirty are available on a daily basis;
- (ii) only 2 of the 34 street-sweeping machines still function;²²
- (iii) compactor trucks have faulty hydraulic systems;
- (iv) fleet maintenance crews have been dramatically reduced;
- (v) collection crews' *esprit de corps* has declined due to fleet breakdowns;
- (vi) workers have not received raises since 1994;²³ and
- (vii) insufficient training may be increasing the chance for accidents among collection workers.

²⁰ See "Garbage Collection Reduced: Once-a-Week Pickup Means Lower Fees," Susan Levine, *Washington Post*, 13 February 1997.

²¹ See the report submitted to the D.C. Financial Control Board by Belden & Russonello, "Washington, D.C. Residents Study: Research Findings of a Citywide Survey," written in June, 1997.

²² See "D.C. Equipment Woes Delay Trash Pickup, Street Cleaning," Hamil Harris, *Washington Post*, August 22, 1997.

²³ Conversation with Morris Tolson, President, AFSCME Local 2091 (July 23, 1997). In 1996, the combined impacts of pay cuts and furloughs cost workers 18% of their income.

VI. Transfer stations

Background and findings

Transfer stations are an integral part of many solid waste management systems because they provide an efficient means to dispose of waste. By allowing compactor trucks to transfer their loads to larger transfer trucks at a location close to collection routes, they (i) enable compactor trucks to spend more time collecting waste and (ii) reduce the cost of transporting waste to distant landfills or incinerators.

Though often necessary and beneficial, transfer stations also create special problems to municipalities due to the severe impact they have on their surroundings. Transfer stations pose many problems due to foul odors, fugitive dust, diesel fuel emissions, noise, and pounding of city streets from heavy compactor trucks and transfer trucks. A transfer station, sited and operated properly, need not pose any threat to its neighbors; however, when sited or operated *improperly*, it could have a devastating impact on the economy and quality of life of neighbors.

For many years, citizen groups and businesses have been complaining about transfer stations in commercial and residential neighborhoods. Recently, the National Capital Planning Commission confirmed that the District has failed to properly and adequately regulate and site transfer stations in the District.²⁴ Currently, there are two District-owned transfer stations (Fort Totten and Benning Road) and four private transfer stations. See Figure 3 for the locations of each transfer station.

Regulating transfer stations

Privately owned transfer stations are a recent development in the District of Columbia. When the first private transfer station opened approximately five years ago, the District government was unprepared and had no clear regulations governing its operations. Soon thereafter, when a more controversial second private transfer station opened, the District government tried to close it down by enforcing the city's illegal dumping law and the law giving the Mayor the power to control the flow of garbage generated in the District; however, D.C. Superior Court

²⁴ On September 4, 1997, the National Capital Planning Commission (the NCPC) held a hearing on zoning requirements for solid waste transfer stations in the District of Columbia. The NCPC approved a motion advising the DC Zoning Commission that the NCPC "strongly believes that the potential aesthetic and environmental and health effect of existing waste handling facilities on the beauty and image of the Nation's Capital and the health of its citizens are so severe that any solid waste handling facility should be prohibited from locating within the boundaries of the city unless and until the regulations for handling solid waste in the District of Columbia are strengthened to state-of-the-art specifications and applied to all facilities..."

Judge Mitchell-Rankin, ruled that the city's attempt was illegal, citing the *Carbone* ruling of the United States Supreme Court, among others.²⁵

The City Council then attempted to clarify matters in December 1995, when it adopted the final version of the Solid Waste Facility Permit Temporary Act (the Permit Act). This legislation, however, has been an ill-fated effort to resolve a difficult problem. It has allowed existing private transfer stations to operate with only an interim operating permit, provided that they apply for a Certificate of Occupancy. An interim operating permit is a license, not an occupancy permit. Therefore, the District's zoning law requiring an occupancy permit is not being met.

The Permit Act further directed the D.C. Consumer and Regulatory Affairs Department and the D.C. Zoning Commission to draw up regulations and siting requirements for transfer stations. However, clear regulations remain to be written, siting requirements still remain unclear and four transfer stations are now in the District. Private transfer stations located in residential neighborhoods now act with near impunity due to the lack of regulatory oversight and enforcement.

The Permit Act has resulted in prolonged delay in resolving the situation, and it has forced the Zoning Commission to determine policy that should have been determined by the City Council. Throughout this delay, the District Government has not enforced existing general public nuisance laws against transfer stations.

District residents have delivered technical information to the city's Planning Office and the D.C. Zoning Commission (see Appendix A); however, to date, no resolution has been reached. The failure of the District government to properly address the situation has deepened residents' concerns about the quality of their government. As one citizen commented to the City Council Committee of the Whole during hearings on the Comprehensive Plan, a beauty parlor could not operate without a Certificate of Occupancy, but a solid waste transfer station can.²⁶

Recently, however, the City Council passed, and the Mayor signed, legislation that would require a five hundred foot buffer zone from any portion of a transfer station facility to any property line.

²⁵ 1994 ruling which declared unconstitutional local laws that require solid waste to be delivered to a specific -facility (whether a landfill or a transfer station).

²⁶ Testimony of Marilyn Groves, League of 8,000, 7 July 1997, referring to the Solid Waste Facility Permit Licensure Law December 1995.

Figure 3. Locations of private transfer stations in the District of Columbia

The four privately owned transfer stations currently in the District of Columbia are operated by: Waste Management, Inc. (2160 Queens Chapel Road, NE), Browning-Ferris Inc. (1220 W St., NE), USA Waste (Uline Arena: 1140 3rd St., NE), and Eastern Trans-Waste (1315 1st St., SE).

Siting transfer stations

All four private transfer stations in the District are located in Wards 5 and 6. The city's Fort Totten transfer station is located in Ward 5 and the city's Benning Road transfer station is in Ward 7. Each is located along a rail line or major thoroughfare that make the District a natural staging area for the regional flow of solid waste to landfills and incinerators in the outer suburban and rural areas surrounding the District.

The Zoning Commission has proposed rules that would allow the Board of Zoning Adjustment to consider applications for transfer stations on a case-by-case basis, subject to criteria adopted by the Zoning Commission. Ruling on such a basis will provide transfer station operators with a great advantage (given their superior legal and corporate resources) over small communities adjacent to transfer stations. Private transfer station operators (whose facilities are already located in C-M zones) argue that their facilities are allowed to operate in C-M zones because "light processing" is already allowed in such zones. Further, they insist that their processing of mixed waste, which contains hazardous components (e.g., batteries, thermometers, solvents, oil, etc.), is no worse than other businesses operating in C-M zones, particularly, those using hazardous components for processing, repairing, and manufacturing (e.g., auto repair, autobody repair, painting, bus repairs, meat packing, and dry cleaning). The merits of this argument are persuasive; however, they may hold only on limited grounds. The impact of an auto body shop or metrobus facility on its neighbors is less severe than a transfer station's in three significant ways: (i) noxious odors, (ii) fly-away trash, and (iii) vermin.

Potential Zoning Commission actions that would allow for transfer stations in any M or C-M zone in the city would not only make the current sites permanent, but would open the floodgates to similar facilities in the District. The Nation's Capital would become a dumping ground.²⁷ Already, solid waste companies are using District land for transfer stations to accept solid waste from surrounding communities. As much as fifty percent of the solid waste handled by the busiest transfer stations in the District may be coming from outside the city.

In order to determine the propriety of transfer stations in the District, the Zoning Commission must rely upon successful practices and techniques used in model jurisdictions. When the Zoning Commission has determined how other communities have successfully mitigated the effects of transfer stations, it can apply those lessons to the District.

²⁷ See "Waste Firms Are Turning Trash Into Cash," Jackie Spinner, *Washington Post*, 30 September 1996.

The current situation in the District is unacceptable. The disturbing noise, repugnant odors, unfiltered air, and unprocessed liquids from transfer stations are a constant reminder to nearby residents and businesses of their predicament and lack of protection by the District government, a protection that is afforded citizens of many other jurisdictions in the country.

Citizens who live and work near private and city-owned waste transfer facilities are frustrated by the indecision of the Mayor and the City Council which has allowed improperly sited and regulated transfer stations to overrun working class neighborhoods. The result has been incalculable damage to the quality of life for residents surrounding these facilities, devaluation of residential and commercial real estate, and increased cynicism towards city officials who proclaim their support for communities, but appear to disregard basic protections from public nuisances and unsanitary conditions that are common in many U.S. cities.²⁸

The national hauling companies that operate transfer stations in the District have expressed a willingness to make any necessary improvements, even relocation or establishment of buffer zones at existing sites, as required by the city. One facility has already allocated nearly \$1 million for these improvements and submitted its permit requests in February 1997. On September 16, 1997, it received its permits from the city for renovations. Construction began September 19, 1997. Another facility has already invested in recycling equipment and would be willing to make further capital improvements if the city were to make clear what regulations will be in place and whether they will be applied consistently and fairly. Many people interviewed are skeptical that the rules are now enforced against private transfer stations fairly and equitably.

Should transfer stations be banned from the District entirely, private transfer station operators point out that it would result in more trucks on the streets as additional routes would have to be created in order to compensate for lost collection route time as trucks go farther distances to transfer points. This would add significant costs to their operations, which would have to be passed on to their private sector clients. Presumably, the city owned and operated transfer stations would also be banned, increasing the public sector costs.

ILSR urges that the Zoning Commission base any judgment it makes on the examples of those municipalities and counties where state-of-the-art transfer stations have been successfully sited and operated in congested urban areas. Sites exist in the city that appear to be amenable to transfer stations (e.g., Capital Commerce Center, Bolling Air Force Base, Alabama Village, and Blue Plain Treatment Plant). ILSR recommends that the Zoning Commission engage an

²⁸ See "District Struggles to Clear the Air About Waste Transfer Businesses," Hamil Harris, *Washington Post*, February 10, 1997.

independent real estate committee to pinpoint sites that would accommodate professionally articulated standards for siting transfer stations in the District. We also urge that all regulations applicable to transfer stations be applied equally to public and private transfer stations.

Economic impact of transfer stations

The District's privately operated transfer stations have had a severe economic impact on their neighbors. Hearings on tax assessments of some businesses located near one transfer station revealed that property tax assessments in the area declined by 30% as a result of the public nuisance caused by the transfer station.

Residents are bothered by truck and equipment noise and traffic beginning between 4:00 a.m. and 5:00 a.m. During the course of one day, roughly 100 collection trucks and 40 transfer semi-trailers travel to and from each facility. In some locations, trucks pass through surrounding neighborhoods once every four minutes. This activity blocks traffic and attacks the foundations and ceilings of homes. Needless to say, the real estate market for these areas is depressed. These residents are some of the hardest working residents in the District whose home values represent their single most significant economic asset; yet, they are captives of the situation and may not be able to sell their homes at prices resembling their original values. Businesses that can find buyers have the option of moving to nearby Prince Georges County where they are assured of not having a transfer station as a neighbor.

The washboard effect

Moving solid waste is a heavy industrial process. Collection trucks weigh almost 10 tons with no load, and can carry 5-7 tons of solid waste with a full load. When a loaded truck brakes, it pushes down on asphalt creating ridges in the road, causing a "washboard effect." When vehicles pass over these ridges, vibrations from the vehicles' weight pass through the road and their effect is felt on adjacent buildings and on the road bed beneath the road surface. As a result, foundations of adjacent buildings weaken and the buildings themselves can eventually tilt. Further, gas and water lines below the road bed can rupture requiring expensive and inconvenient repair by utility companies and the city.

All these costs—to the building owners, the utility infrastructure, and the city's roads—are external to the solid waste companies, who pay only an annual fee of \$97 per truck for their operating permits. It should be noted, however, that transfer stations must pay a \$10,000 fee to the District for their operating permits (valid for three years). Also, the major hauling firms voluntarily pay the city \$4 per ton of solid waste handled from the city's waste stream. This per ton fee amounts to at least \$2 million annually. According to the Department of Public Works, the revenues from this surcharge are currently being held in an escrow account.

Similar problems could be caused by the District's bus system; however, the District has protected streets and buildings next to bus stops by installing reinforced concrete in front of bus stops instead of asphalt.

Operators of some private transfer stations argue that the industrial areas surrounding their facilities already have reinforced cement that diminishes the washboard effect. However, this has not been confirmed by DPW.

Economic impact of maximizing use of Fort Totten and Benning Road, or developing new facilities

The economic impact of the underutilized Fort Totten and Benning Road transfer stations has been dramatically negative. Revitalization of these facilities and the collection vehicle fleet would lead to a turnaround of this situation. If the District's transfer stations (or other state-of-the-art transfer stations) were to be open to small haulers, 20 businesses could be re-established, each creating 6 to 8 jobs. Capitalizing on the energies of moderately sized haulers operating in the city, upgraded city-owned transfer stations could capture at least 25% of the District's 2,000-ton daily private sector solid waste stream. (The Solid Waste Management Administration collects an estimated 800 tons per day from District households. The private sector collects 2,000 tons per day from apartment houses, businesses, office buildings and government agencies.) By charging \$55 per ton as a tip fee, the District could earn \$1.7 million per year.²⁹

The community of small haulers, so-called "mom and pop" operations, which were mostly family-owned companies with 1-3 compactor trucks and 5-10 employees, has suffered greatly as a result of the decline of Fort Totten and Benning Road. As a result of the 1985 closing of Fort Totten to these companies, virtually all of these haulers—an estimated 60 companies—have gone out of business. These companies were owned by District residents and employed some 350 workers. They could not

²⁹ The \$1.7 million figure is calculated as follows:
Revenues: (i) 2,000 tons x .25 = 500 tons. (ii) 500 tons x \$55 (per ton tip fee) = \$27,500. (iii) \$27,500 x 260 (annual operational days) = \$7,150,000.

Operating costs: (i) \$17 (increased operating costs per ton) x 500 tons per day = \$8,500. (ii) \$8,500 x 260 (annual operational days) = \$2,210,000.

Disposal costs: (i) \$25 (per ton) x 500 tons (per day) = \$12,500. (ii) \$12,500 x 260 operational days = \$3,250,000.

Total cost of servicing private haulers: \$2,210,000 + \$3,250,000 = \$5,460,000.

Net annual return to the District: \$7,150,000 - \$5,460,000 = \$1,690,000.

The benefits discussed in this paragraph are contingent upon raising capital for the renovation of the present transfer stations or development of modern facilities at other sites. Potential sources of capital are: (i) direct appropriations, (ii) the Federal Government, (iii) union trust funds, (iv) environmental bonds sold to District residents, and (v) loans from independent hauling firms in exchange for reserved capacity at the city's facilities.

compete with larger companies that own transfer semi-trailers and use them to haul solid waste 70 miles to and from the Lorton landfill and incinerator complex.

Charles Wilburn, Sr., the late president of the United Haulers of the District of Columbia, commented in 1995, "The city's economic development people understand the devastating impact the loss of Fort Totten has on the city's economy, but they cannot penetrate the thinking of the DPW which refuses to even give the small haulers a chance to point the economic returns to the city if Fort Totten were put back in shape. They say over and over again, 'We're responsible for garbage not economic development.'"

Properly run District facilities would enable smaller companies and their jobs to return to operation. Further, the long-term overall costs of solid waste transfer and disposal in the District could be stabilized and possibly be reduced by having a modern city facility available to small "mom and pop" haulers.

Consensus exists between the Solid Waste Management Administration and AFSCME, D.C. Local 2091 that the District's transfer stations need to be rehabilitated, or that a new facility needs to be developed. If properly designed (using gravity feed instead of the double-hydraulic feed now in place), the facilities could not only handle the city's solid waste more efficiently, saving crew time, but could also earn money while revitalizing the small private hauler sector for the city's economy. To alleviate negative impacts on the surrounding area, the rehabilitation of Fort Totten and Benning Road could include (i) repairing roads that lead to the facilities, (ii) installing high barriers to prevent illegal dumping, (iii) installing a noise wall at the back of the facilities to cut noise and odor, (iv) installing complete air and leachate filtration systems, and (v) providing tax abatements to neighbors in the immediate vicinity of the facilities.

VII. Privatization

Background

In 1997, the Solid Waste Management Administration issued an Invitation for Bids (IFB) for private companies to haul and dispose of solid waste from the Fort Totten and Benning Road transfer stations. The Administration plans to issue another IFB for companies to take over operations at the two city transfer stations. The 1994 Solid Waste Management Plan (the Plan) recommends the privatization of transfer operations; however, no data indicating the economic impact were provided. In fact, the Plan calls for a privatization analysis to be undertaken. As of September 1997, this analysis has not been undertaken.

It cannot be assumed that privatization is the least-cost approach for the city. In Indianapolis, Philadelphia, and Austin, Texas, unions bid against private companies when privatization RFP's were issued. In each city, the union won the bid. The bid process in these cities required a detailed analysis of the costs, improved routing, better trucks and compactors, new work rules, and better cooperation with management, which have led to higher worker productivity in solid waste and recycling programs.

No evidence exists at this time that privatization will provide the least-cost system for the District. The union states that it is prepared to bid on any privatization RFP, but needs cost data from the Solid Waste Management Administration in order to prepare a professional response.

Some private sector firms, on the other hand, argue that privatization is the best and fastest way to invest the capital (i.e., modern equipment) needed to handle the District's public sector solid waste stream. They argue:

- (i) the city has no access to capital—certainly not low-cost capital—given the city's current bond rating and financial status;
- (ii) prior history shows that the city has not efficiently operated and maintained an industrial facility over time due to lack of consistent funding for structural improvements;
- (iii) the city has not been able to get accurate data on their costs due to an antiquated financial accounting system; and
- (iv) the city cannot purchase new equipment due to procurement policies that discourage innovation (e.g., low bids are favored over most efficient collection equipment, and there is a lack of coordination between procurement officers and the operating agency).

Some private haulers conclude, therefore, that the city should not be in the business of operating any transfer stations. ILSR feels that with proper capitalization the city could operate facilities efficiently. A modern city-owned facility could provide efficient service for solid waste hauled by SWMA as well as for solid waste hauled by private haulers—if the facility were operated on a real-cost basis, including depreciation funds reserved for equipment replacement. A public facility will help stabilize and possibly reduce solid waste disposal costs for local haulers and their local commercial customers.

Fact-based decision-making

The city is making privatization the fundamental element of its solid waste management policy. Recycling collection and processing has been privatized, and the transfer stations are being privatized. However, until a privatization study is undertaken, it is impossible to know whether privatization is economically attractive for the city. In other cities, unionized workers provide services at lower costs than the private sector. The District needs an analysis of the current system and the potential impact of capital improvement and system redesign on city operations so that baseline costs with private companies can be meaningful.

Economic studies in the 1970s and 1980s indicated that where privatization does lead to lower costs and higher productivity it is not due to lower wages or less expensive fringe benefits in the private sector. Rather, the studies found that the private sector provided significantly fewer paid holidays, sick days and vacations than the public sector.³⁰ This disparity in paid leave continues in the 1990s. Comparisons are shown in Table 4.

Table 4. Leave benefits: private sector vs. public sector

	holidays	Average days of paid:	
		sick leave	annual leave
Private sector	8	2-5	7 (>1 year) 21 (>3 years)
Public sector	11	15 (new hires) 20	13 (≤ 3 years) 19.5 (4-15 years) 26 (>15 years)

Sources: (i) Margaret Hilton, Memorandum "The Waste Industry—Structure and Employment Conditions," January 1995 and (ii) Morris Tolson, President, AFSCME Local 2091.

³⁰ Margaret Hilton, Memorandum "The Waste Industry—Structure and Employment Conditions," January 1995.

Given the many safety hazards and stressful conditions of solid waste collection and the unpleasant nature of the work, the private sector's provision of fewer paid leave days may be particularly hard on workers. It should be noted that some private sector solid waste collection jobs are less hazardous because they include more fully automated tasks and less manual lifting.

A sustainable work force requires adequate leave provisions for difficult and all-weather jobs. As the District's fleet becomes modernized and more automated, management and union officials need to determine the optimal level of paid leave.

VIII. Potential economic and social benefits of ILSR's recommendations

Introduction

The recommendations listed in this report provide a comprehensive, albeit preliminary, outline for reform that could substantially improve the efficiency of city and private sector services, the economy, and quality of life in the District of Columbia. The possibility for improvement rests upon two basic foundations: improving the solid waste infrastructure, and introducing a successful recycling and composting program.

Solid waste infrastructure

With the benefit of the Technical Consultant's findings and advice (see Appendix B), the District would be able to develop a state-of-the-art waste management system, yielding the highest operational efficiencies and standards. ILSR preliminary estimates show that the potential savings from introduction of a new collection fleet, combined with a diversion rate of 35% and new routes for inner-city and outer-ring areas of the city, to be \$5.9 million.

Revitalization of Fort Totten and Benning Road (or development of modern facilities on other sites) would add to a resurgence of city services in solid waste management. By charging \$55 per ton as a tip fee to private haulers at Fort Totten and Benning Road, ILSR estimates the District could earn \$1.7 million annually. These net revenues—generated from tip fees—would help pay off the debt incurred by modernizing the city's transfer station services. In contrast, the consultant's report to the Control Board recommends privatization of Fort Totten in order to realize \$700,000 in annual savings.

The modernization and increased capacity of the city's transfer services would also open them up to private haulers. Approximately 60 locally owned hauling firms went out of business when Fort Totten and Benning Road became inaccessible to them; approximately 350 direct and indirect jobs disappeared, amounting to a loss to the District of roughly \$7 million in wages and \$9 million in business revenues. Should Fort Totten and Benning Road be opened to small, private hauling companies, a resurgence of small, "mom and pop" enterprises could appear in the District.

Finally, by establishing a solid waste transfer zone for transfer stations—with the strictest, state-of-the-art zoning requirements—the city would mitigate the negative economic impacts resulting from transfer stations damaging the quality of life of nearby residents and businesses.

Recycling

Recycling makes economic sense. It is cost-effective and it provides jobs to the community. Should the District achieve a diversion rate of 35%, ILSR estimates a savings of \$5.9 million per year; with a diversion rate of 50%, \$7.5 million per year could be saved.

The savings realized by the city through recycling would be accompanied by the creation of jobs by small local entrepreneurs who process and market the recovered materials that the city has diverted from its waste stream. ILSR estimates that over 400 jobs could be created in the District should the Nation's Capital achieve high recycling, composting, and reuse rates.

Summary

All together, the District of Columbia could realize savings of \$5.9 million per year and earnings of \$1.7 million per year, for a total gain of \$7.6 million. Improved operational efficiencies and regulatory standards would eliminate detrimental business practices from the nation's capital and add to the quality of life for District residents. Finally, jobs would be created through the appearance of a recycling industry. ILSR urges all parties interested in the future of Washington, D.C. to explore the potential benefits of a least-cost, maximum-economic-development solid waste system.

Testimony of Commission of Public Health to D.C. Zoning Commission, as
presented by Madeleine Fletcher, Ph.D., M.P.H

COMMISSION OF PUBLIC HEALTH

October 3, 1996

The District of Columbia Zoning Commission
441 4th Street, N.W.
Washington, DC 20001

**Re: Case No. 96-5 (Text Amendments - Solid Waste Handling and Disposal
Facilities) - Written Testimony**

Dear Commissioners,

The Commission of Public Health (CPH) strongly supports the regulation of garbage transfer stations to ensure that they are sited, designed, constructed, maintained, and operated in a way that does not endanger the health of the public.

Personnel at the Commission of Public Health (CPH) have been involved since March 1995 in monitoring public health hazards and nuisance conditions associated with a number of garbage transfer stations operating in the District, at the request of enforcement staff of the Department of Consumer and Regulatory Affairs (DCRA). Recently CPH staff have testified at an injunction hearing about the public health hazards generated by one such site. These experiences have made CPH staff aware of the fact that several garbage transfer stations located in the District have been operating in a manner which grossly violates basic standards of public health and have exposed surrounding businesses and residential communities to intolerable conditions, including the proliferation of disease vectors such as rats, flies, cockroaches, and mosquitoes; dust, strong and objectionable odors, noise, and diesel truck emissions; and this on a constant basis throughout the day.

Unregulated accumulations of garbage in large volumes provide food and shelter for such disease vectors as rats, flies, cockroaches, and mosquitoes, and encourage their proliferation. Rats are vectors of diseases such as rat bite fever, murine typhus, and salmonellosis. Flies and cockroaches freely move from garbage and sewage to places where food is stored and prepared, and thus contaminate food with pathogenic organisms such as Salmonella and Shigella. Mosquitoes breed in rain water which accumulates in tires and other debris, and serve as vectors of diseases such as arboviral encephalitis and dengue fever.

Garbage in large volumes also are a source of objectionable odors. Odors can cause nausea, vomiting, and malaise through the stimulation of the sympathetic nervous system, and in addition can lead to considerable mental distress, thus affecting the health of people who may be exposed to objectionable odors on a frequent basis in their working or living environment. Odors can disperse far from their original source, and tuy [sic]

Construction debris, if stored in the open air and without proper dust abatement measures, can be a major source of inhalable particulate matter and thus constitute a major health hazard. There are extensive published data that document the health effects of exposure to increased levels of particulate matter in the air (summarized in Review of the National Ambient Air Quality Standards for Particulate Matter: Policy Assessment of Scientific and Technical Information, 1996, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency). These health effects include: 1) increased risk of illness or death from heart disease, pneumonia, or influenza, particularly in people over 65 years of age; 2) aggravation of pre-existing respiratory conditions, including asthma, emphysema, and chronic bronchitis; 3) decreased lung function and increased respiratory symptoms in children.

In addition to this, the dust generated by construction debris is contaminated with highly toxic or hazardous substances, such as lead from piping and paint, and asbestos from fireproofing and soundproofing materials, roof shingles, and insulation.

The importance of the role the Zoning Regulations play in protecting the public health is apparent from 11 DCMR 101.1, which states that the provisions of Zoning Regulations "shall be the minimum requirements adopted for the promotion of the public health...". It is with the above considerations in mind that CPH submits the following comments and recommendations on the proposed amendments to the D.C. Zoning Code on the permitting of solid waste handling and disposal facilities.

1. CPH is greatly concerned about the permitting of **solid waste disposal facilities** (see proposed 822.3), because there do not appear to be any regulations currently in place to enforce their proper maintenance and operation. The proposed amendments not only permit solid waste disposal facilities in M zones, but also specify, in the proposed 822.3 (g), that a solid waste disposal facility may not be fully enclosed in a building.

The open-air disposal in large volumes of such materials as garbage, trash, and construction debris, needs to be carefully regulated, and the siting of these facilities needs to be away as far as possible from population centers.

Thus, there is nothing in the proposed amendments to prohibit the open-air accumulations of trash and construction debris which currently exist at several sites in the District of Columbia.

In conclusion of this section, CPH recommends that solid waste disposal facilities should not be permitted in any zone in the District.

2. CPH is concerned about the absence of any specification of buffer zones between solid waste handling facilities and neighboring business. Businesses which are allowed as a matter of right in M or C-M zones include hotels (11 DCMR 801.6 and 821.2), food establishments (801.2, 801.10, and 821.2), and other businesses which typically employ a sizable work force and depend on a large clientele willing to patronize their establishments. Employees in particular spend a substantial portion of their lifetime at work, which means that any adverse conditions in their working environment could have a substantial impact on their health. They need to be protected from the adverse health effects posed by the large volumes of solid waste handled by solid waste facilities, to the same extent that residents need to be.

Certain categories of residences are allowed a matter of right in M or C-M zones (11 DCMR 801.3 - 801.5 and 821.2). Thus, CPH is also concerned about the lack of a requirement (see proposed 802.4 a) for buffer zones to protect residences in M or C-M zones.

In conjunction with other important features of a properly designed solid waste facility, buffer zones help to protect people living and/or working in the vicinity from odors, dust, noise, diesel truck emissions, and heavy truck traffic.

Thus, the same rationale which led to the proposed establishment of a 300-foot buffer zone to protect residential zones ought to be applied to the protection of any residence or business, irrespective of zoning. In the same way, the requirement of landscaping and of an opaque screen, fence, or wall to protect residential zones (see proposed 802.4 e) should also be extended to protect residences irrespective of zoning, as well as business, their workers, and customers.

Thus, CPH recommends that the proposed 802.4 (a) be amended to specify:

" (a) No portion of the facility...shall be located within three hundred (300) feet of **the lot line of any property** [delete remainder of sentence]".

and that proposed 802.4 (e) be amended to:

" (e) The facility shall be landscaped and enclosed on all sides by an **opaque** fence or wall at least ten(10) feet in height. [delete next sentence]. The facility shall be secured from unauthorized entry..."

In addition, CPH recommends that a fifty (50) foot buffer zone from any property line be required for all entry and exits into the site.

3. CPH is concerned that the requirement that all solid waste handling activities must be within a fully enclosed building is not sufficiently specific. It would allow for example for the processing of solid waste within a fully enclosed building, whose large vehicle doors would however remain open during the operation of the facility to facilitate the entry and exit of solid waste transfer vehicles. In such a situation, odors, dust, noise, and diesel truck emissions could freely escape to the outside environment, and vectors of disease such as rats, flies, and cockroaches, would have free access to the facility. Such a facility currently exists at 2160 Queen Chapel Road N.E., and has been the object of numerous complaints and lawsuits by neighboring businesses.

A study of commercially-collected waste in the District of Columbia conducted in Fiscal Year 1992 (source: 1994 draft of the District of Columbia's Comprehensive Solid Waste Management Plan) shows that its composition includes 10.3% of food waste and 2.1% of soiled diapers. A facility allowed to process 2,000 tons daily (which is within the range allowed by interim operating permits recently issued in the District of Columbia) can therefore be expected to handle daily about 200 tons of food waste and 20 tons of solid diapers. Thus, the potential for the proliferation of disease vectors, such as rates, flies, and cockroaches attracted to these large volumes of food waste and for the dissemination by these vectors of pathogenic organisms which can proliferate in food and fecal waste, such a Salmonella and Shigella, is high.

Therefore, CPH recommends that proposed 822.3 (g) be amended as follows:

"(g) All solid waste handling activities... must be within a fully enclosed building designed in such a way that the solid waste being processed is kept fully enclosed at all times."

The proposed 802.4 (h) states that "Nothing in this section shall preclude the Board from imposing additional or more strict conditions pertaining to design ... or any matter necessary to protect adjacent property". In keeping with this, CPH recommends the requirement of design features currently used in modern solid waste handling facilities that will substantially alleviate the public health hazards of large accumulations of solid waste:

- (1) an air lock design for entry and exit ways, with a vestibule and two sets of doors opening alternately, which ensures that the solid waste in the building remains fully enclosed, even when trucks enter or exit the facility.
- (2) a two-level floor design allowing the deposit of solid waste from arriving trucks stationed on the upper level directly into departing trucks stationed on the

lower level. This would circumvent the need for dumping the solid waste on a tipping floor, thus minimizing the stockpiling of solid waste and facilitating cleaning operations.

(3) an odor control design that is not limited to the spraying or spreading of masking agents, but also employs a forced ventilation system, with exhaust fans equipped with air scrubbers, and whose effectiveness is monitored regularly by an independent agency paid by the facility.

(4) a design allowing for the control of airborne dust and soot from diesel engines by exhaust fans equipped with dust filters, baghouses, or electrostatic air cleaners, and whose intakes are located over the area where waste tipping operations are carried out, whose effectiveness is regularly monitored by an independent agency paid for by the facility.

(5) a design preventing the leaking of effluent from solid waste or cleaning operations from spilling onto open or unpaved ground or onto public space, adversely affecting groundwater, or contaminating a water supply system.

(6) a rodent-proof structure, with regular monitoring for rats by an independent agency paid for by the facility.

(7) impermeable floors.

(8) concrete and masonry materials rather than metal for noise control.

Proposed scope of work for Technical Consultant

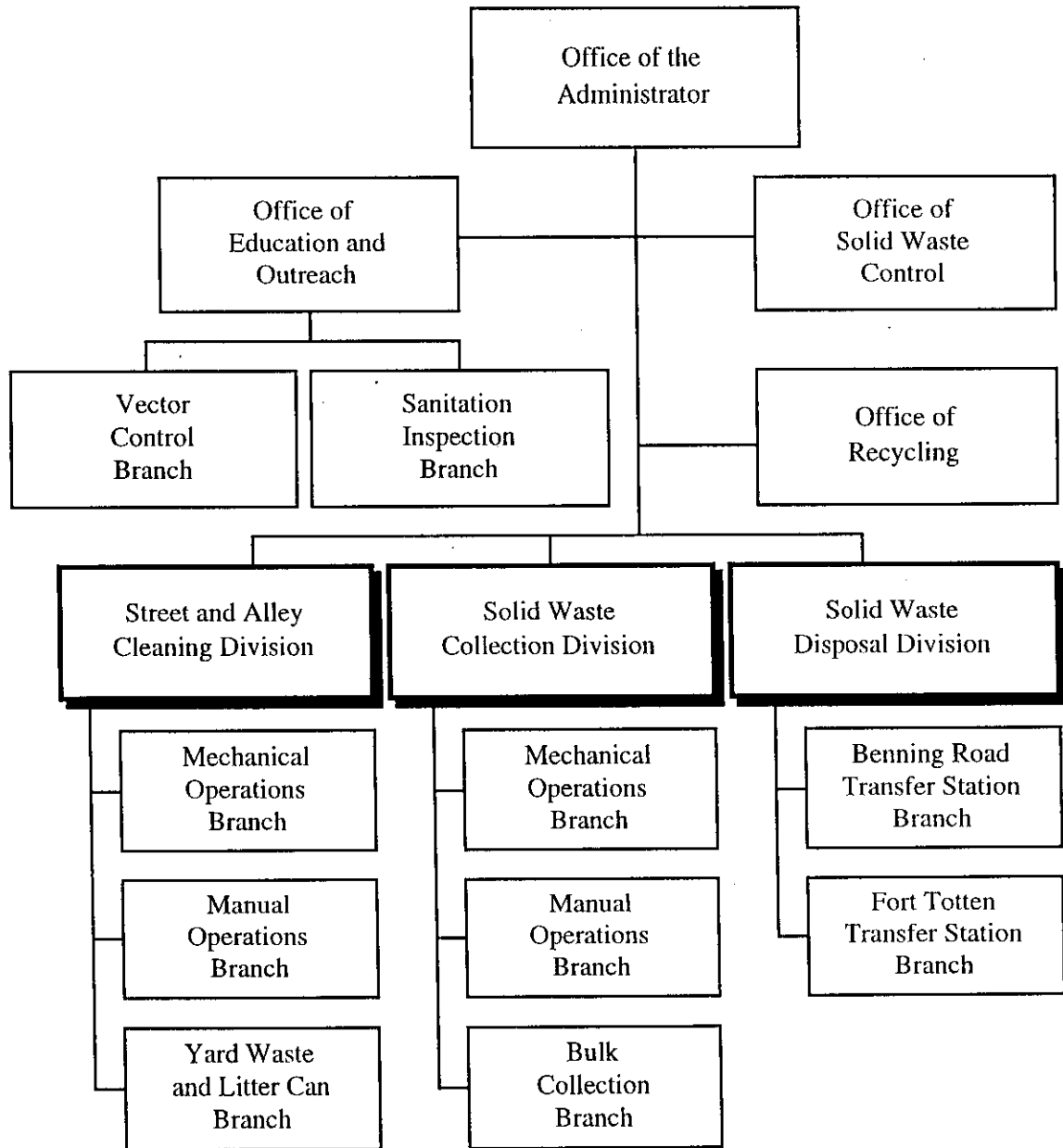
ILSR recommends that a technical consultant develop a comprehensive solid waste management analysis including:

1. a detailed cost analysis of SWMA services;
2. a detailed budget of SWMA services; and
3. a proposed implementation plan incorporating the following major features:
 - (a) a curbside recycling and yard debris program that is integrated with solid waste collection;
 - (b) household, neighborhood, and citywide food and yard-debris programs comprised of:
 - (i) backyard composting, vermi-composting, and mulching;
 - (ii) a neighborhood yard debris shredding program that delivers mulch to community gardens; and
 - (iii) a municipal composting facility;
 - (c) a permanent drop-off system serving concentrated apartment building areas and shopping centers, and mobile drop-off units for special large-scale events;
 - (d) a permanent construction and demolition reuse and processing center;
 - (e) used commodity depots for appliances, computers, building materials, furniture, clothing, office equipment, and other reusable items; and
 - (f) a solid waste sector school-to-job and school-to-career program, and in-school education curricula and public awareness campaign.

ILSR Advisory Team

Larry Bohlen	Friends of the Earth
Hallie Clemm	Solid Waste Management Administration, District of Columbia Department of Public Works
Marylin Groves	Citizens League of 8,000, District of Columbia
Adam Maier	District of Columbia City Council Staff (Councilmember Harry Thomas)
Norris McDonald	African-American Environmentalist Association
Jim Schulman	Commissioner, ANC 6A04; Near Northeast Neighborhood Task Force
Gifford Stack	National Soft Drink Association
Judy Tiger	Garden Resources of Washington
Morris Tolson	AFSCME, D.C. Local 2091
Dick Tynes	Eagle Recycling, Inc.
Les Ulanow	ABC Salvage, Inc.

Organizational Chart of the Solid Waste Management Administration



Source: *Audit of the District of Columbia's Recycling Program, September 29, 1995*
(Office of the District of Columbia Auditor)

Text of Press Release Issued by Friends of the Earth on September 3, 1997

**RECYCLING TO BE RESTORED TO THE DISTRICT OF COLUMBIA: NEWS MET
WITH CAUTIOUS OPTIMISM**

Friends of the Earth applauded the release by the District of Columbia of an Invitation for Bid (IFB) to contractors to provide recycling services to the city. At the same time, the organization noted that the IFB does not go far enough and may result in a mediocre recycling program that cannot be sustained.

"I'm surprised that schools and government offices are not included in the recycling program. That's where the city can bring in a lot of money," said Larry Bohlen, a spokesperson for Friends of the Earth. A D.C. City Council report noted in April 1997 that as much as \$3.8 million in recyclable materials is currently being thrown away in the city's schools and offices.

Friends of the Earth sent a letter to the Financial Control Board, the Department of Public Works and the D.C. Council Committee on Public Works and the Environment outlining a set of recommendations to improve the IFB through amendment for the benefit of the District. The letter recommended that the program:

1. Recycle in schools and government offices to recover highly valuable paper.
2. Establish targets and timetables for material recovery levels.
3. Conduct a city-wide publicity campaign to inform the public of the restart of the program.
4. Require the contractor to hire D.C. residents.
5. Include a program to collect and compost yard waste.
6. Locate recycling bins in public places like parks and Metro stations.

In addition to the changes to the IFB, Friends of the Earth recommended that the Financial Control Board re-establish the Recycling Trust Fund once set up to smooth out the volatility experienced in the city's budget, but raided under Mayor Barry's administration for use as general funds. The fund would take the rebate contractors must provide when materials markets are paying high prices and provide money to the city toward operation of the program in the future. "When the city receives a rebate in good times, then it should be earmarked to reduce program costs in future years," said Bohlen.

Recent Innovations in Municipal Recycling and Solid Waste Management
Applicable to Washington, DC

LOS ANGELES

1. \$1 Million Development Fund in Los Angeles

A coalition of eleven citizen and environmental organizations, working with the Los Angeles Public Works Commission, changed contracting procedures to favor companies that have working relationships with community-based organizations. As a result, BFI won a bid to operate two transfer stations under city contracts. BFI contributed \$1 million to a revolving loan fund to support community recycling enterprise development.

Waste Management Inc. has also developed joint ventures with community development recycling groups in several S.F. Bay Area jurisdictions.

2. Closed Loop Recycling in Los Angeles

The city of Los Angeles recruited PlastoPlan, Inc. to locate on industrial land in the city. The company receives recycled plastics from the city's recycling program and manufactures solid waste containers and recycling bins that are used by the city.

BALTIMORE

3. Introduction of Recycling at No Extra Cost/Expansion of Paper Recycling in Baltimore

Baltimore introduced curbside recycling (paper one week/glass and metals one week) using existing vehicles at no extra cost to the solid waste management system.

The city expanded its recycling program to include all waste papers from households. The city takes advantage of three paper mills operating in the city which buy the materials. These markets are available to D.C. as well.

4. Solid Waste Sector Intervention for School-to-Jobs and Careers Program

Working with the Office of the Mayor of Baltimore and Southern High School, BFI has developed a program to recruit academically and vocationally-oriented students into jobs and careers in the solid waste sector. The company provides two

scholarships annually to local colleges. It also has set up a mentoring program in which students become paid interns working under the direction of senior people in the plant (welders, mechanics, office managers). Students not only earn and learn, but develop important contacts for jobs upon graduation. BFI is interested in similar projects in Washington, DC.

5. Economic Development from Automobile Recycling

Comprehensive Automobile Recycling Services, Inc. (CARS), a Baltimore firm, disassembles old and new (but damaged) cars, and resells working parts and materials recovered. The Baltimore plant has 100 employees who are paid industrial wages with benefits. The company is looking for new sites to locate up to 40 more plants in the next 10 years. *Washington, D.C. would be an ideal site and the city should recruit this firm because of the potential economic impact that CARS offers.* Further, the plant design of CARS is environmentally sound; for example, it requires the proper collection and resale of all fluids.

PENNSYLVANIA

6. Reducing the Cost of Recycling in Philadelphia; Reducing Solid Waste Costs for Businesses in Philadelphia

From 1991 through 1996, Philadelphia reduced its per ton cost of curbside recycling to \$17 to \$21 per ton less than the cost of solid waste collection and disposal. The city is saving over \$500,000 per year as a result.

The recycling program is tied to an economic development program which has resulted in over 1,000 new jobs in the processing and manufacturing sector since 1991.

The Office of Recycling estimates that since the mandatory commercial recycling was implemented in 1994, businesses have saved \$60-\$70 million in avoided disposal costs.

7. Economic Development from Plastics Recycling

St. Jude Polymer, Inc. is a specialty plastics manufacturing company with over 100 employees in Pennsylvania. The company manufactures sophisticated products that blend recycled plastic resins with virgin resins for the automobile and trucking industries. *The company would locate a new plant in Washington, D.C. if the city could provide 20,000 tons per year of HDPE (milk jugs) and PET (soda bottles) annually.*

SOUTHEASTERN U.S.

8. Inner-city Composting and School-to-Job Programs

Landmark Environmental, Inc., a firm based in the Southeast, operates inner-city composting plants, managing yard debris and other organic waste streams. They are sensitive to all environmental issues and are community oriented. The company develops working relationships with local high schools and technical colleges to develop school-to-job and school-to-career opportunities. The company is interested in joint ventures with local businesses and government agencies.

GENERAL

9. Reuse Enterprises

In the past five years, over 100 reuse enterprises have developed, mostly as non-profit businesses. Companies specialize in a variety of commodity groups: appliances, computers, textiles, wood pallets, building materials, art supplies, furniture and lighting fixtures. Commodities are recovered at their highest value. A typical enterprise has 10 employees, grosses \$1 million annually and saves low-income residents in the community \$250,000 in reduced expenditures. Case studies of these enterprises and guidelines for replication are available.³¹

³¹ See ILSR publications: *Plug into Electronics Reuse*, 1997; *Sustaining Businesses & Jobs through Pallet Repair & Reuse*, 1997; *Creating Wealth from Everyday Items*, 1997; *Community Development Corporations and Reuse Operations: Four Case Studies of Working Relationships*, 1996; *Reuse Operations: Community Development through Redistribution of Used Goods*, 1995.

Waste Reduction Record-Setters

Many communities are achieving waste reduction levels above 35%. The Institute for Local Self-Reliance, under a grant from the U.S. Environmental Protection Agency, has researched and documented communities achieving waste reduction levels of 40%, 50%, and higher as part of its Waste Reduction Record-Setters project. Results of this research are pending publication in an EPA report, *Cutting the Waste Stream in Half: Community Record-Setters Show How*. This appendix summarizes select record-setting waste reduction programs in communities with a population of 100,000 or more. For more information regarding the Waste Reduction Record-Setters project, see ILSR's website at <http://www.ilsr.org>.

ANN ARBOR, MICHIGAN

Contact: Tom McMurtrie, Recycling Coordinator
City of Ann Arbor
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(313) 994-6581

Ann Arbor (**pop. 112,000**) has achieved a residential **52% recovery rate** through its curbside recycling, yard trimmings collection and composting, and the state's bottle return law. The recycling program is run by Recycle Ann Arbor (RAA), a non-profit organization. RAA picks up 23 different recyclable materials weekly on the same day the city collects trash. RAA also runs a drop-off station. April 1 through November, city crews collect at curbside grass clippings, leaves, and brush, which have been banned from the landfill. The city also collects Christmas trees in January. The city-owned compost site generates \$40,000 per year from the sale of compost and mulch. Closing the loop, Ann Arbor has adopted policies to encourage the use and purchase of recycled content products.

BELLEVUE, WASHINGTON

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Resource Management and Technology
Utilities Department
City of Bellevue
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Bellevue WA 98009-9012
(425) 452-6964

Bellevue (**pop. 104,000**) instituted recycling in 1989. The following year the city restructured trash fees to provide an incentive to lower disposal levels. Residents have responded to the incentive programs so that in 1996, 62% of served households subscribed to trash service of one 30-gallon can or less of trash per week. Bellevue **recovered 60%** of its residential discards through recycling and composting in 1996 (26% through recycling and 34% through composting). Bellevue's trash, recycling, and composting services are provided by a contractor. Residents receive weekly curbside collection of recyclable materials and year-round collection of yard debris.

BERGEN COUNTY, NEW JERSEY

Contact: Nina Herman Seiden, Recycling Program Manager
Bergen County Utilities Authority
Department of Solid Waste Planning and Development
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Foot of Mehrhof Road
Little Ferry, NJ 07643
(201) 641-2552 x5822

Bergen County (**pop. 845,189**) achieved a **62% recovery rate** of municipal solid waste through recycling and composting in 1995, the most recent year for which data are available. Bergen County consists of 70 small, heavily populated municipalities in northeastern New Jersey. The area is largely suburban and home to many individuals who commute to New York City. Each community in Bergen County administers its own waste management program. The Bergen County Utilities Authority provides technical assistance, educational programs, financial assistance, and promotional materials to support the communities with their efforts. Areas of assistance include backyard composting, vermicomposting, waste reduction, household hazardous waste collection, marketing assistance, and business waste audits.

LEBANON COUNTY, PENNSYLVANIA

Contact: Amy Mazzella di Bosco, Lebanon County Recycling Coordinator
Greater Lebanon Refuse Authority
1610 Russell Road
Lebanon, PA 17046
(717) 867-5790, ext. 307 fax (717) 867-5798

With 13 curbside collection programs and 7 drop-off centers in its 26 municipalities, Lebanon County (**pop. 116,789**) **recycled 51%** of its solid waste in 1995. The county accepts newspaper; corrugated cardboard; aluminum and bimetal cans; glass; plastic milk, soda, and detergent bottles; phone books; magazines; office paper; metals; car batteries; tires; and yard trimmings. In 1995, the county recycled over 43,000 tons of material. Of the 13 municipalities with curbside collection, 5 have mandatory recycling while 8 have voluntary programs. County officials credit waste haulers' cooperation in picking up recyclables on their routes, voluntary recycling coordinators in each community, and public and private organizations and citizens who have all enthusiastically embraced recycling.

MADISON, WISCONSIN

Contact: George Dreckmann, Recycling Coordinator
Street Division
Department of Public Works
City of Madison
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(608) 226-4681

This urban college town (**pop. 200,814**) became the first U.S. city to curbside recycle when it began collecting newspapers in 1968. The city now collects 13 types of recyclables weekly at curbside and offers seasonal curbside collection of yard debris (brush, April to October; other materials, five times a year). In 1996, the city **diverted 49%** of its residential waste. Madison's recycling coordinator believes landfill tip fees are now dropping (after years of increasing) because of over-capacity resulting from successful recycling. If material recovery

had not helped contain costs, increased tip fees would have driven Madison's waste management budget higher than its current level. Collection routes have changed from 26 trash routes, served with dual-rear-axle trucks, in 1991 to 20 trash routes, served with single-rear-axle trash trucks, and 12 recycling routes in 1996. Increased trash routes would have been necessary during this time because of population growth. Instead the system was reconfigured to integrate recycling. The change to single-rear-axle trash trucks saves approximately \$10,000 on the purchase price of each truck and decreases maintenance costs. In addition, the number of employees responsible for trash and recycling has not increased as recycling has expanded and the city has grown in population.

MORRIS COUNTY, NEW JERSEY

Contact: Kathleen Pelak, Recycling Specialist
Municipal Utilities Authority
County of Morris
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Morris Plains, NJ 07945-0370
(973) 285-8392 fax (973) 285-8397

In 1995, Morris County (**est. pop. 444,990**) surpassed New Jersey's statewide recycling goal of 60%, by **recycling 63%** of its total solid waste. Morris County mandates 15 materials to be source separated and recycled by the residential, commercial, and institutional sectors. The list of materials includes mixed paper, yard debris, tires, batteries, white goods and stumps in addition to the "traditional" recyclables. The county offers a curbside recycling collection program to municipalities for a cost of \$0.85 per household per pick-up. Small businesses pay \$5.00 per pick-up for "back door" service. Currently 12 of 39 municipalities and approximately 70 small businesses in the county subscribe to these services. Morris County also operates a recycling consolidation center for fiber materials open to municipalities and small businesses. Most municipalities operate both a curbside recycling program and their own drop-off site. Drop-off is free. Four times each year, the county sponsors Household Hazardous Waste Disposal Days and collects items such as paints, pesticides, antifreeze, and asbestos. The county promotes a Cut It and Leave It program for grass clippings and backyard composting for other vegetative waste. Many of its municipalities likewise promote these programs and, as a result, some are eliminating curbside collection of yard debris.

PASSAIC COUNTY, NEW JERSEY

Contact: B. Ellie Arnould, Solid Waste Programs Coordinator
Passaic County Planning Board
Office of Recycling and Solid Waste Programs
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Wayne, NJ 07470
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According to preliminary 1996 data, Passaic County (**pop. 453,060**) met its 60% recycling goal for overall solid waste. The county documented **recycling 48%** of its municipal solid waste in 1995. Aside from mandatory recycling, key elements of Passaic County's waste reduction success include an information packet about source reduction and recycling distributed to new county residents, a yard debris program which encourages composting and the use of mulching mowers, and the implementation of "Wiser Ways," a program aimed at reducing waste at the source by encouraging citizens to make environmentally sound

decisions. According to 1995 data, Passaic County residents each recycled almost a ton of material (1,893 pounds) on average.

PORTLAND, OREGON

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Portland (**pop. 497,600**) revamped its trash collection service in 1992 in order to respond to public demand and state requirements for increased recycling. Volume-based trash rates, weekly curbside collection of a wide variety of residential materials, a strong commercial recycling program supported by ordinance, a bottle bill, and yard debris recovery resulted in an estimated municipal solid waste **recovery rate of 50%** in 1996. Waste management services are offered to Portland residents by private companies franchised to serve areas of the city. Private companies also serve businesses. According to Portland Environmental Services, the residential disposal rate of 1,468 pounds of solid waste per household is the lowest among large American cities.

RAMSEY COUNTY, MINNESOTA

Contact: Cathi Lyman-Onkka, Recycling Coordinator
Ramsey County Department of Public Health
Division of Solid Waste
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Under a Minnesota State Law, Ramsey County (**pop. 482,115**) is required to provide opportunities for residents and businesses to recycle, ensure that materials are brought to materials processing centers or directly to markets, and meet regulatory recycling objectives. The county provides recycling grants to cities, which must provide residential pick-up, and has enacted policies designed to encourage waste reduction and enhance recyclables collection. The county operates drop-off centers for yard trimmings and other recyclables, and owns and operates a recyclables processing facility in Saint Paul. The county also provides technical assistance, education, and outreach to area businesses. In addition to achieving 3% waste reduction, in 1996 county residents and businesses **recycled 47%** of their solid waste stream.

SAN JOSE, CALIFORNIA

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Integrated Waste Management Program
Environmental Services Department
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In its fiscal year 1997, San Jose (**pop. 849,363**) **diverted 43%** of its municipal solid waste from disposal: 45% of its residential waste stream and 41% of its commercial/institutional waste stream. In 1996, the diversion level for single-family households was 55%. The city

contracts with two private companies (the GreenTeam of San Jose and Western/USA Waste) to provide residential trash and recycling services on a weekly basis to 186,000 single-family dwellings and 79,000 multi-family dwellings. Single-family households pay volume-based rates for trash service. Two other contractors collect yard trimmings once a week on the same day as trash and recycling pick-up. In all, the city collects more than 24 different categories of materials for recycling or composting. The city encourages waste reduction in the commercial/institutional sector by assessing fees on trash collection but not on recycling or composting collection. This provides a direct economic incentive for businesses to recycle and reduce their solid waste.

SARASOTA COUNTY, FLORIDA

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Sarasota County Solid Waste Department
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Recycling is mandatory for both residents and businesses in Sarasota County (**pop. 301,528**). The county's 1995 **recovery rate was 43%**; 50% in the commercial sector and 38% in the residential sector. Sarasota County's commercial sector recycling success has been achieved through aggressive education campaigns aimed at local businesses. Businesses must contract independently for trash and recycling collection services; the county programs serve residences only. The county has offered on-site waste assessments, technical advice, workshops, presentations, training, awards programs, and other educational information in order to encourage commercial sector recycling. As a last resort, county Code Enforcement has the authority to ensure businesses comply with the mandatory recycling program.

SEATTLE, WASHINGTON

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Solid Waste Utility
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Seattle (**pop. 534,700**) was a pioneer in charging variable rates for trash disposal; the city's program was implemented in 1981. The city continues to lead in waste diversion and has provided its residents with a convenient recycling system and a financial incentive to use it. Citywide residential recycling for single-family residences was instituted in 1988 and yard debris collection soon followed in 1989. The city expanded recycling to serve residents of multi-family dwellings in 1993. Seattle's curbside recycling program accepts 14 categories of materials (including mixed paper) and the apartment program accepts 11. The yard debris subscription service collects four additional materials. Seattle set a goal of recovering 60% of its municipal solid waste stream by 1998 as an alternative to building an incinerator. No other large U.S. city has centered its waste management approach on material recovery, rejecting traditional disposal facilities in its long-term planning. **Current waste diversion levels in Seattle are nearing 50%.**

WORCESTER, MASSACHUSETTS

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Worcester's curbside recycling program began November 1993 along with a pay-as-you-throw system for the collection of trash. Materials collected for recycling include newspapers and inserts, mixed paper, corrugated cardboard, paperboard, milk and juice cartons, drink boxes, glass bottles and jars, beverage cans, food cans, aluminum trays, and all plastic bottles, jars, tubs, and microwave trays/containers. The city also offers a drop-off site for yard debris and leaves, which are then composted. Although the program has only been in effect a short time, Worcester (**pop. 165,387**) **diverted 54%** of its residential solid waste in 1996.