

**Neighborhood Planning  
for Community  
Revitalization**

**Cooperative Recycling in Dinkytown:  
Reduce, Reuse, Recycle**

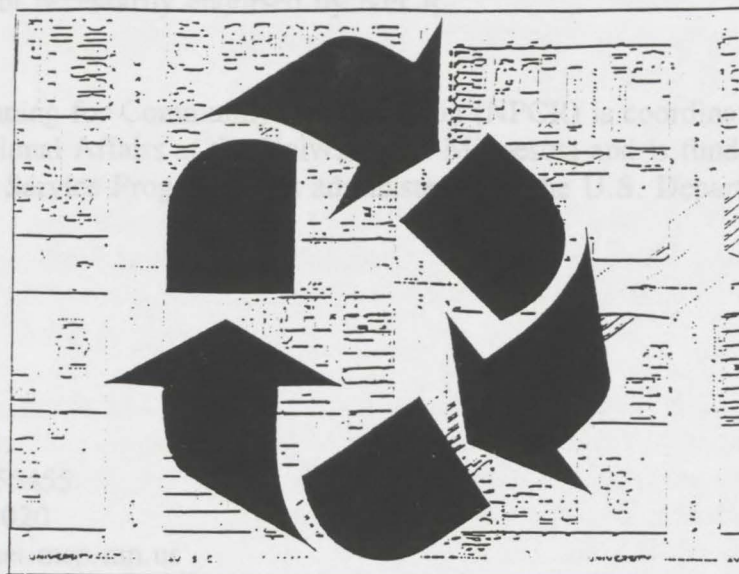
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June 1997

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## **Cooperative Recycling in Dinkytown: Reduce, Reuse, Recycle**

*A Resource Guide for the Dinkytown Business Association (DBA)*

by Andy Williams  
June 1997

This report [NPCR 1061] is also available at the following internet  
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## TABLE OF CONTENTS

<i>Chapter I. - Preface</i>	6
<i>Chapter II. - Executive Summary</i>	7
<i>Chapter III. - Introduction/Background</i>	9
<i>Chapter IV. - Proposed Program: The 3 R's Approach</i>	12
<i>Chapter V. - Proposed Program: Important Results to Consider</i>	13
<i>Chapter VI. - Proposed Program: Leadership</i>	16
<i>Chapter VII. - Proposed Program: Education</i>	18
<i>Chapter VIII. - Proposed Program: Infrastructure</i>	24
<i>Chapter IX. - Proposed Program: Funding</i>	30
<i>Chapter X. - Proposed Program: Implementation Timeline of Pilot</i>	32
<i>Chapter XI. - Alternative Programs</i>	36
<i>Chapter XII. - Conclusions</i>	39
<i>Appendices:</i>	
<i>Appendix A - Resource Lists</i>	
<i>Appendix B - Dinkytown Businesses/Map Codes</i>	
<i>Appendix C - Blank Surveys</i>	
<i>Appendix D - Business Association Questionnaire Results</i>	
<i>Appendix E - Dinkytown Questionnaire Results/Explanations</i>	
<i>Appendix F - Dumpster Dive Results/Explanations</i>	
<i>Appendix G - Case Studies</i>	
<i>Appendix H - Recycling Markets</i>	

*Appendix I - Source Reduction*

*Appendix J - Employee Incentives*

*Appendix K - OEA Matching Grant Information*

*Appendix L - King County Recycling Program Guide*

*Glossary*

*Bibliography*

## Preface

### Why this Report? The NRP Action Plan

In the past year, improvements in the Dinkytown business district have focused on sidewalk, street, and bridge construction. With all of this scheduled for completion in mid-October 1997, it is time for Dinkytown businesses to consider fulfilling environmental objectives outlined in the *Marcy-Holmes NRP Action Plan*. This report will help businesses fulfill those objectives.

From the *M-H Planning Process* section of the action plan:

*On February 9, 1993 the Marcy-Holmes Neighborhood Association organized the election of a Steering Committee to direct the NRP process for the neighborhood. The 16 people elected represented renters, homeowners, rental owners, and businesses. With the intent of making this process as inclusive as possible, this committee defined participants as "stakeholders" which include persons who live and work in the neighborhood, owners and employees of businesses located in the neighborhood and representatives of religious institutions, schools, and other institutions located within the neighborhood....Four issue groups were defined from community wide meetings and a mail back survey done in May 1993: Housing, Environment, Economic Development, and Crime and Safety...Committees met with city agencies and other groups to develop the details of the Action Plan during the winter (of 1994). The first draft of the plan was published in the S.E. Paper in June, 1994, and a neighborhood meeting was held June 6 to prioritize the numerous strategies developed by committees.*

From the *Action Plan Summary* section of the action plan:

*The Marcy-Holmes neighborhood NRP action plan has four components which are general areas of concern: Housing, the Environment, Economic Development, and Crime and Safety....The Environmental component details a very clear vision of pollution reduction, improving neighborhood amenities, and integrating all types of transportation.*

From the *Environment* section of the Action Plan:

*VISION: The environment in the Marcy-Holmes neighborhood will be significantly improved and will become a model for other neighborhoods to follow.*

Item 7 in the *Environment* section specifically calls for waste reduction.

*7. Reduce solid waste volume generated in Marcy-Holmes neighborhood.*

*Work with city sanitation and area businesses to establish solid waste reduction award program with advice from MnTAP (Minnesota Technical Assistance Program)."*

Creation of a cooperative recycling program in Dinkytown will address the environmental vision of the Marcy-Holmes NRP Action Plan. Gradual implementation of the proposed program outlined in this report will allow Marcy-Holmes to *become a model for other neighborhoods to follow.*

## **Cooperative Recycling in Dinkytown: Executive Summary**

**A cooperative recycling program for Dinkytown is viable and should be adopted.**

This statement is supported by three facts: 1) the majority of businesses embrace the idea of a joint recycling program, 2) dumpster sharing relationships already in existence can contribute to the program, and 3) there are logical waste streams upon which to focus.

### **Background**

In January 1997, Marcy-Holmes NRP (Neighborhood Revitalization Program) sponsored an undergraduate intern to develop a cooperative recycling program for the Dinkytown Business Association (DBA). Beginning in late February, the intern conducted several months of research, gathering information from other commercial recycling programs, surveying Dinkytown businesses and their wastes, and interviewing solid waste management professionals, which culminated in this report. What follows is a proposed strategy for implementing a cooperative recycling program specific to the needs and strengths of the DBA. It is now the DBA's charge to consider the proposals in this report and to act on implementation. The DBA has a unique and rare opportunity to emerge as a leader and role model for other business associations.

### **Key Findings**

Fifty-one business owners (out of 90) were interviewed or given questionnaires regarding their waste practices and opinions. Here are some significant findings.

- **There is sufficient interest in participating in a recycling pilot project.** Sixty-five percent are interested in participating and 29 percent say they are unsure. A cooperative recycling committee will need to communicate cost-benefits and convenience to convince skeptical businesses to join. Only three businesses reported no interest.
- **Convenience is a concern.** Sixty-five percent say they will not transport materials to a drop-off center. Drop-off sites need to be a short walk from each business.
- **Three materials emerged as a significant portion of the Dinkytown waste stream: cardboard, office paper, and food waste.** Most businesses are already accustomed to recycling cardboard. Since owners and employees will be unfamiliar with food waste and office paper recycling, education is essential for proper management of these materials.



- **Large restaurants have the highest waste hauling costs in Dinkytown.** A food waste reuse program can solve this problem.

Six waste surveys or dumpster dives were conducted at Dinkytown businesses. These waste surveys confirm that office paper, cardboard, and food waste comprise a significant portion of the businesses' waste stream. These results are also useful for identifying recycling and source reduction opportunities that can potentially save businesses money and preserve the environment. Examples of source reduction activities include changing daily operations such as switching to bulk milk containers rather than single-use or reusing packing materials.

### **Proposed Program Element: The "3 R's" Approach**

Dinkytown's cooperative recycling program will constantly focus on the 3 R's: Reduce, Reuse, and Recycle. This promotes conservation and cost reduction. Based on the waste surveys and questionnaires, three main recommendations for the DBA are:

- **Recycle materials separated at the point of disposal:** clear/colored glass, aluminum/tin cans, newsprint, office paper/mail/paperboard, and cardboard.
- **Reuse food waste.** At this time, either hog farming or composting appear to be the most viable options for Dinkytown. Another program to consider is Twelve Baskets (i.e. food for human consumption).
- **Promote the program.** Proper promotion will create positive media attention for Dinkytown businesses, potentially increase customer volume, and raise awareness for reduction and recycling efforts.

### **Proposed Program Design**

The most essential component is leadership. A four member committee, with the assistance of a coordinator, will have the following responsibilities: obtaining funds, educating owners who would in turn educate their employees, running the bidding process for recycling haulers, and gradually implementing infrastructure.

### **Next Steps**

**A committee must be appointed by mid-summer.** The committee will then begin gradual implementation starting with zones which can provide initial successes (e.g. Dinkydome and University Technology Center).

## Introduction/Background

In 1996, the Dinkytown Business Association (DBA) began working with the Marcy-Holmes NRP Implementation Committee on the development of a commercial recycling program suitable for the needs of the Dinkytown community of businesses and surrounding residents. However, staffing requirements precluded the actual development of a pilot recycling program. As a result of a grant from Neighborhood Planning for Community Revitalization (NPCR), an intern was hired to design a program for the DBA to implement.

This report fulfills two objectives. First, it acts as a guide specifically tailored to meet the needs of the Dinkytown Business Association (DBA). And, second, it acts as a resource for organizations wishing to start programs of their own.

This report will describe the best possible model for cooperative recycling in the Dinkytown Business District. Specifically, it serves as a guide and a resource for those involved in the implementation process. The proposed program design contains the building blocks of success: leadership, education, infrastructure plans, timelines, and consideration of business owner opinions. Alternate program models are also included. Paramount to implementation is the use of agency and hauler listings as well as publications from other organizations (see appendices).

Sources for this report include questionnaire results and six waste surveys or "dumpster dives". Questionnaire results allow the proposed model to best serve business owner needs (see Appendices C and E for questionnaire and results). Waste Surveys provide more accurate information on the waste stream for certain businesses. Other sources include case studies, interviews, and hauler information on services provided (see Appendices A and G for further inquiry).

### Model Characteristics

Dinkytown has three important characteristics which lend themselves to a cooperative recycling program. Pre-existing requirements for a model include:

- **High density.** Dinkytown's compact geography will allow for easier management and operation of the proposed program. Dinkytown's businesses are located on a few, compact blocks that are conducive for cooperative recycling
- **Existing cooperation.** Several business owners and employees in Dinkytown are already accustomed to sharing dumpsters. Thus, it would be rather simple for them to share recycling bins. The proposed program and other models build on this strength.

- **Business Owner Support.** Sixty-five percent of business owners interviewed for the questionnaire are interested in participating in a program.

### **This Report Applies to Other Business Districts**

Of the 24 business associations surveyed in Minneapolis and St. Paul, five have cooperative recycling programs. While the remaining 19 associations do not have a program, most expressed an interest in the outcome of the DBA's program (see Appendices C and D for Business Association Questionnaires and Results).

The DBA has a unique opportunity to set an example for other business associations in the Twin Cities area. Ideally, this report can function as a reference for other organizations wishing to begin cooperative programs of their own. In a business district with similar characteristics (high density, existing cooperation, enthusiasm and support), cooperative recycling is feasible.

This report also attempts to provide a publication specifically tailored to meet the needs of business associations interested in the environmental and cost-benefits of a cooperative program. Research over the past four months has revealed that there are few cooperative recycling guides for businesses districts.

### **A History of Recycling in Dinkytown**

Even though Dinkytown offers an ideal environment for cooperative recycling, an earlier attempt in the 1990s failed. The Minnesota Public Interest Research Group (MPIRG) conducted a survey of Dinkytown Association members through a program called B.A.R.T.E.R. (Businesses Allied to Recycle Through Exchange and Reuse) associated with MPIRG. The survey results indicated that a majority of Dinkytown business owners were interested in recycling programs.

With the assistance of B.A.R.T.E.R., the DBA began a pilot recycling program but did not designate a coordinator to oversee the process.

Unlike the Uptown project (see Appendix G for Uptown Case Study), the DBA did not have a coordinator or the necessary resources to organize a more convenient program that relied on the purchase of new recycling containers. Instead, Dinkytown businesses chose to share recycling dumpsters since they shared disposal containers. These arrangements were based on individual recycling contracts and made the new program:

*...more difficult for each business to have access to all types of recycling. They (Dinkytown businesses) may need to share with their neighbor for cardboard, the bar down the block for glass, and the copy shop across the street to recycle their*

*office paper, thus requiring individual payment arrangements with each business.<sup>1</sup>*

In addition to lack of convenience, businesses were unable to capitalize on economies of scale while the pilot program was operating. Both convenience and cost benefits were lost when recycling pick-up was planned on an individual basis at commercial rates.

In order for cooperative recycling to be truly beneficial in Dinkytown, it is important that administrative support for a program be based on one recycling contract with one hauler. Individually, small businesses cannot afford to recycle when already faced with expensive disposal costs. If hauler fees and bins are shared under one contract, individual businesses may be able to realize a decrease in waste disposal costs. Cooperative recycling, coupled with reduction and reuse, is important for a program in Dinkytown. In any case, this early attempt at recycling in Dinkytown may provide a precedent for future success.

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<sup>1</sup>From Cooperative Recycling: A Guide to Shared Success, MPIRG's B.A.R.T.E.R. Project, August 1994.

## **Proposed Program: The 3 R's Approach**

### **Introduction**

When contemplating the organization of a cooperative recycling program, it is necessary to keep in mind the best possible program elements given certain factors: convenience, time, and costs, etc. This does not preclude future improvements to the program.

A program emphasizing the three R's (Reduce, Reuse, and Recycle) both promotes conservation and cost reduction. It is a matter of common sense. However, owners often do not have the time to research reduction and reuse issues. A coordinator must be appointed for at least one full year after implementation, and will provide this type of assistance and much more.

This proposal will allow the Dinkytown recycling program to continue as a living organism which constructively criticizes itself and looks for more cost-effective, efficient ways to operate. Dinkytown's new program will constantly evaluate itself and make changes under the three "Rs": Reduce, Reuse, and Recycle. While structural and educational elements of cooperative recycling are paramount to the proposed program, reuse and reduction must be included.

### **Overview of the Proposed Program**

There are six sections describing the proposed program: 1) Important Results to Consider (from waste surveys and questionnaires), 2) Leadership, 3) Education, 4) Infrastructure, 5) Funding, and 6) Implementation Timeline.

Waste survey and Dinkytown questionnaire findings reveal problems that the proposed program will need to address. The leadership section recommends the creation of a cooperative recycling committee led by a coordinator and designed to educate owners and employees about recycling in Dinkytown. The education section focuses on detailed information that needs to be conveyed to ensure success. In the infrastructure section, the program is geographically divided into eight zones based on blocks and half-blocks. For each zone, a detailed description of technical implementation is given. One determining factor for this program's feasibility is funding. Funding sources are made available in the funding section. Finally, a discussion of the implementation timeline and maintenance of the program are given.

## Proposed Program: Important Results to Consider

Recycling publications often recommend that organizations conduct initial survey research to determine whether or not a cooperative recycling program is feasible or even desired. The following selection of questionnaire and waste survey results affirms the feasibility of a program for Dinkytown.

Note: Although the term "waste survey" more accurately describes the process of visually estimating amounts of waste types, the remainder of this report will use the term "dumpster dive" in its place.

Fifty-one business owners (out of 90) were interviewed or given questionnaires regarding their waste practices and opinions (see appendix E for all results). Here are some significant details.

- There is sufficient interest in participating in a recycling pilot project. Sixty-five percent are interested in participating and 29 percent say they are unsure. Cooperative recycling leaders will need to communicate cost-benefits and convenience to convince skeptical businesses to join. Only three businesses say no. See Question 11 and its explanation in Appendix E.
- Convenience is a concern. Sixty-five percent say they will not transport materials to a drop-off center. Drop-off sites need to be a short walk from each business. See Question 10 and its explanation in Appendix E.
- Three materials emerged as a significant portion of the Dinkytown waste stream: corrugated cardboard (OCC), office paper, and food waste. Most businesses are already accustomed to recycling cardboard. Since owners and employees will be unfamiliar with food waste reuse and office paper recycling, education is essential for proper management of these materials. See Question 1 and its explanation in Appendix E.
- Large restaurants have the highest waste hauling costs in Dinkytown. A food waste reuse program can solve this problem. See Question 3 and its explanation in Appendix E.

Three more concerns are apparent: 1) lack of information about who will recycle and requirements for pick-up; 2) lack of storage space; and 3) lack of owner, tenant, customer participation. It will be the work of the DBA to help resolve these issues. See Question 7 and its explanation in Appendix E.

Finally, some businesses may need to wait until old contracts have ended before they can join the proposed program. During the bidding process for haulers, the DBA will need to consider which waste hauling companies Dinkytown businesses use currently. A new

program may have greater success if a majority of Dinkytown businesses do not need to switch haulers. See Question 2 and its explanation in Appendix E.

Six dumpster dives were conducted from early March to Late April. For six businesses, estimated amounts of different material types were observed (e.g. paper, glass, food waste, etc.). Please see Appendix F for full descriptions and explanations of dumpster dive results.

Dumpster dives confirm the importance of cardboard, office paper, and food waste as targets for reduction, reuse, and recycling. The following tables show the three largest materials in the waste stream for these six businesses. Materials are listed in percentages.

#### Dumpster Dive 1

Business	Low Grade Paper	Newsprint	Miscellaneous
Student Book Store	37.6%	20.1%	14.1%

#### Dumpster Dive 2

Business	Single-Use Milk Cartons	Paper Towels	Coffee Grounds
Purple Onion Cafe	37.6%	15.3%	10.4%

#### Dumpster Dive 3

Business	Low Grade Paper	Boxboard
Campus Drug	39.4%	24.2%

Note: The owner of campus drug said 80 percent of his waste stream was cardboard, all recycled. Cardboard does not appear in waste survey results because recyclables were not analyzed.

#### Dumpster Dive 4

Business	Styrofoam	Low Grade Paper	Food Waste
Dinkydale Deli	43.4%	21.6%	14.5%

#### Dumpster Dive 5

Business	Mixed Food Waste	Popcorn	Wet Paper Waste
Fowl Play	36.1%	25.8%	14.2%

**Dumpster Dive 6**

Business	Copy Paper	Low Grade Paper	Copy Paper Wrappers
Autographics Copies	34.5%	25.5%	14.5%

Low grade paper refers to miscellaneous paper such as napkins, restroom paper towels, food wrappers, unsorted office paper, and scratch paper. The type of low grade paper varies from business to business.



## **Proposed Program: Leadership**

To achieve success, it is crucial that a well-organized committee of three or four dedicated individuals take responsibility for implementation in Dinkytown. Publications and local recycling programs often assert the importance of effective leadership and a strong mission statement during the design and implementation stages. At the same time, cooperative recycling must be easy to understand and execute, and involve a limited time commitment from committee members.

A four member implementation committee, with the assistance of a coordinator, will have the following responsibilities: obtaining funds, educating owners who will then educate their employees, running the bidding process for recycling haulers, and gradually implementing infrastructure. The committee can also utilize outside resources such as the Minnesota Office of Environmental Assistance (OEA) and the Minnesota Technical Assistance Program (MnTAP) for educational assistance.

### **Organization of Leadership**

**A program coordinator will lead a four member committee which will meet frequently during implementation.** The coordinator will plan educational components and meet challenges as they arise. One volunteer from each zone will assist the committee with aspects appropriate to their group of businesses (see page 24 which elaborates on zone structure). There will be a total of four committee members and eight zone volunteers (clarification: both are volunteer positions). Through the leadership and advice of the coordinator and committee, each committee member and volunteer will teach other owners in their zone. In turn, each business owner will teach employees the methods for this program. This "trickle down" approach to training was successful for the Calhoun Square Recycling Program (please see the case study in Appendix G).

### **Differences Between Committee Members and Zone Volunteers**

Qualifications for committee member positions will include: membership in the DBA, ownership or management of a Dinkytown business, and familiarity with business-to-business relationships in Dinkytown.

Qualifications for zone volunteer positions will include: employment with a DBA member business and familiarity with business-to-business relationships in the volunteer's zone.

While committee members will assist in program implementation and make most of the decisions, zone volunteers will work only within their zone. Since they are employed within the zone, a zone volunteer's knowledge is invaluable for smooth and gradual incorporation of each zone into the program. Zone volunteers will complete the majority of their responsibilities after educating owners and employees, and the program is running smoothly

in their zone.

The proposed committee organization requires active participation on the part of all committee members, zone volunteers, owners, and employees. Without proper support, even in one zone, the program could flounder. The efforts of a recycling coordinator are essential in providing support.

### **Responsibilities of the Recycling Coordinator**

With the committee's assistance, a coordinator will provide education and information to business owners and employees. To improve the committee's operations, the role of the recycling coordinator will be to:

- Keep committee members and participants focused on the program's mission and goals and to keep the program fresh and exciting.
- Make changes in the committee structure where needed.
- Develop promotions, with the committee's assistance, advertising the program. Positive publicity will reinforce the program and likely encourage continued participation.
- Investigate and implement reduction and reuse practices.
- Maintain the quality of signs and bins.
- Negotiate with haulers on behalf of the recycling cooperative (e.g. contamination issues, hauler breach of contract, etc.); and
- Develop and publicize progress reports on implementation.

## **Proposed Program: Education**

Responsibility for education belongs to the coordinator, committee, and zone volunteers who are to work together to provide education. Specific elements of the message conveyed through education include: 1) source-separated recycling, 2) food waste reuse, 3) and reduction efforts.

### **Source-Separated Recycling**

Dinkytown's program should practice source-separated recycling, recycling materials separated at the point of disposal.

Reasons to implement source-separated recycling are two-fold. First, source-separated recycling is generally less-expensive than co-mingled (mixed glass, plastic, aluminum, and tin). And, second, while co-mingled may be more convenient, it leads to careless behavior on the part of participants. Source-separated recycling materials are easier to analyze and reduce. Reduction often results in cost savings.

Clear/colored glass, aluminum/tin cans, newsprint, office paper/mail/paperboard, and corrugated cardboard will be picked up through a source-separated recycling system in Dinkytown. Plastic is not accommodated in the system since only small amounts of plastics are generated. Since a large percentage of big businesses already recycle most of these materials, less education may be required.

The coordinator, committee, and zone volunteers will educate employees and owners on three general points. First, they will ensure that program participants are sorting materials properly and placing them in the appropriate bin. Clearly marked signs should solve this problem. Next, they will reiterate the importance of preventing contamination. Contaminated materials are not recyclable. Finally, they will inform participants of bin locations, pick-up times for bins, and bin partners.

Education will also be tailored to emphasize areas where participants may need improvement or focus on the major recyclables they generate. For instance, a copy center should know which types of office paper are appropriate to recycle and how to prevent contamination of those materials.

It will be the responsibility of the coordinator, committee, and zone volunteers to provide education for source-separated recycling.

### **Food Waste Reuse**

Food waste reuse applies to mainly larger restaurants in the Dinkytown business district. By reducing food waste in restaurants, cost savings may be produced from lower waste hauling

fees. Although there is a monthly fee for participating in a food reuse program, the cost is the same or less than waste disposal. There are three methods of food reuse: 1) hog farm reuse, 2) composting, and 3) human consumption. The coordinator and committee must choose either hog farm reuse or composting for the majority of Dinkytown businesses. There are a few businesses who might qualify for food shelter programs. This should be further investigated by the coordinator. It is unlikely that there will be enough food waste in Dinkytown to support all reuse methods. What follows is a closer look at each option.

### Option 1: Hog Farm Reuse

*Hog farmers comprise the main group of food waste recyclers. Farmers with "garbage feeder" permits are licensed to accept food waste that contains meat or that has come into contact with meat. They can also accept non-meat food by-products. These permitted farmers typically accept food waste from grocers, hospitals, hotels, restaurants, and cafeterias. Farmers listed with "exempt materials" permits can only take non-meat food by-products. These types of farmers generally accept non-food waste from food processors such as snack food manufacturers, dairies, cereal manufacturers, etc.<sup>2</sup>*

Suggested implementation for hog farm reuse begins with a pilot organized in mid-summer if sufficient interest is developed. MnTAP and the hog farmer will provide education assistance during the pilot. Once the food waste program is implemented, the coordinator will act as an advisor for restaurants and as an intermediary between restaurants and the hog farmer. The DBA will need to determine which hog farmer can best serve their needs.

Research focused on the Second Harvest Farms food reuse program. The logistics of their program are simple. Employees empty all foods (excluding coffee grounds and excessive amounts of salt) into 32 gallon barrels provided by Second Harvest. Where space is a problem, smaller containers may be used and later emptied into the barrels. Employees must be informed of which materials are appropriate and inappropriate for food waste reuse. Clear signs can solve this. According to Curt Johnson of Second Harvest, there is sufficient waste volume to service Dinkytown with pick-up six days a week. Other hog farmers operate their programs similarly. The committee and coordinator will need to consider both meat and non-meat hog farmers.

Advantages of hog farm reuse include:

- A decrease in food disposal costs. Second Harvest charges three dollars per 32 gallon barrel and there are no start-up costs. These costs are comparable or lower than garbage disposal. For instance, the Thunderbird Restaurant in Bloomington saves \$100 recycling approximately 540 tons of food waste each month (see Appendix G for Thunderbird Case Study).

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<sup>2</sup>From the Board of Animal Health, fax received by OEA.

- Hog farm reuse is a proven practice in Minnesota. The University Technology Center Deli and several Uptown businesses use the services of Second Harvest Farms (see Appendix G for Uptown Case Study).

Challenges of hog farm reuse include:

- The time necessary to educate employees regarding contamination concerns. Hog farm reuse may require more education because it will be a new program and employees will be unfamiliar with sorting requirements. Employees will need to take care to keep paper, silverware, coffee grounds, and excessive amounts of salt out of food reuse barrels.
- Complications resulting from employee turnover. A hog farm reuse program should be incorporated into the overall training businesses provide for new employees.

See the Food Waste Reuse Case Study in Appendix G for further information.

### **Option 2: Composting**

Composting involves the decomposition of food material, non-recyclable paper, and other organic waste into soil. Unfortunately, on-site composting can be very time-consuming and requires a great deal of space and so was not researched in great detail for this report. Some initial research was conducted on off-site composting.

According to John Madole of Microlife USA, off-site composting for the Dinkytown business district is feasible and inexpensive. Currently, SKB of St. Paul is in the process of constructing a composting center in Dakota County. By mid-summer, SKB will begin composting projects. The committee and coordinator should contact SKB regarding composting in Dinkytown (see Appendix A for contact information). Mr. Madole believes that it is possible for the DBA to find a hauler for transport of compostable materials.

Advantages of off-site composting include:

- Food waste disposal costs are the same or a little better than mixed waste disposal costs. While the SKB composting facility will accept food waste and mixed municipal solid waste (MSW), the DBA may be able to negotiate better rates for source-separated compostables. Mr. Madole says rates will likely be competitive with those of Second Harvest Farms.
- Less time-consuming than hog farm reuse program. Since more types of materials can be composted, there is less need to separate materials. In MSW compost operations, suitable items typically include: fruit, vegetables, coffee grounds, bakery items, nonrecyclable paper, yard waste, and some brush.

Items often considered contaminants include: metals, plastics, and textiles.

- Businesses who participated in a composting pilot were pleased with the program. Stores such as Pizza Hut in Apple Valley, Burger King at Hiawatha and 46th St., and various restaurants in the I-494 corridor have participated in the Audobon Composting Project. However, it was discontinued because of transportation costs and distance to the composting facility.

Challenges of off-site composting include:

- The lack of an established infrastructure for composting commercial waste. Not many businesses in the Twin Cities compost on a day-to-day basis. Although Mr. Madole and possibly other agencies can assist the DBA in organizing a composting program, it may still require more time and effort than hog farm reuse.
- Composting programs have not been permanent. There are few examples of composting programs which have continued year after year.

Biodegradable Plates, Cups, and Utensils:

Some companies provide disposable dishware which is not plastic. These items are most commonly made out of a soy or corn product which is often advertized as biodegradable in ten days. "Soy" ware can be tossed in with compostable materials. They are environmentally friendly and can reduce disposable container waste for restaurants in Dinkytown. Unfortunately, soyware is currently more expensive than conventional plasticware. The recycling committee and coordinator may want to consider encouraging the use of these products depending on the difference between disposal costs of conventional plasticware and the added cost of soyware.

### **Option 3: Twelve Baskets Program**

The Twelve Baskets Program reuses excess food for human consumption. It may be rather simple to arrange pick-ups through Twelve Baskets since they already serve the University of Minnesota. This program deserves further study but may not be appropriate for much of Dinkytown because few restaurants consistently produce large quantities of food that are in demand such as frozen food, produce, and dairy products. Still, a few establishments may want to contact this charity for more information if restaurant owners believe they have appropriate foods.

One common misconception regarding human consumption involves liability issues. Under Minnesota law, business owners are not held liable for sickness, no matter how severe, resulting from their generosity. This piece of legislation is commonly referred to as the Good Samaritan Law.

## Recommendations Regarding Food Waste Reuse

The newly-formed recycling committee of the DBA should invite the following experts for a food reuse meeting with Dinkytown restaurant owners attending:

John Polanski, MnTAP: Mr. Polanski is a food waste expert and can show a slide presentation about Second Harvest Farms and the Thunderbird Restaurant (30-40 minutes).

Curt Johnson, Second Harvest Farms: Mr. Johnson can answer questions regarding hog farm reuse.

A representative from SKB: An SKB representative can give a presentation on their proposed composting facility.

Ginny Black, OEA: Ms. Black can present information on composting and/or answer questions.

These presentations may help the recycling committee reach a decision regarding food reuse. In any case, the DBA needs to explore both off-site composting and hog farm reuse as options. The committee may base its decision on the cost difference between hog farm reuse and composting.

## Reduction Efforts

As a part of the proposed program, the coordinator, with the assistance of various agencies, will analyze the operations of each individual business. Thus, the coordinator will discover practices which can be conveniently changed to reduce waste. Examples of reduction efforts include: low energy light bulbs, bulk containers instead of single-use milk cartons, and reusable towels in bathrooms instead of paper. Cost benefits must be made clear to each business. In addition, business owners should contact companies that produce items which reduce waste and use recyclable materials, and buy products from them. This will complete the "recycling loop." Below are three methods for waste reduction. This is by no means a complete list. The recycling committee should build on these methods:

### **1) Use reusable napkins, silverware, cups and plates instead of disposables**

Analysis of each business should recommend the use of reusable items for restaurants where feasible. The coordinator should put restaurant owners in contact with companies that offer low-cost alternatives. This method is particularly important because disposable plates and utensils make up a large portion of the waste stream in Dinkytown, and currently cannot be recycled conveniently. If some business owners cannot afford initial costs involved (e.g. purchasing new automatic dishwashers), then the coordinator and committee should research possible funding sources to provide monetary assistance.

## **2) Signage**

Where reduction is not possible with the use of silverware, cloth napkins, etc., employees and customers can be reminded of the need to reduce. Signs placed near plasticware, napkins, and cups can ask them to use these items sparingly. Also, signs in bathrooms could ask the public to use paper towels sparingly if providing a cloth towel is not possible.

## **3) Special Promotions Such as "Waste-Free Fridays"**

In Seattle, the King County Waste Division sponsors "Waste-Free Fridays" (see Appendix G for King County Case Study). Each month, a business offers a discount to customers who reduce. For instance, Brueggers, for all the Fridays in one month, offered free drink refills to customers with their own cups. In another example, Kinkos doubled their discount for two-sided copies. Businesses participating in this program received media attention for their efforts. Customers responded positively to the concept.

Active promotions such as "Waste-Free Fridays," will maintain the visibility of Dinkytown's cooperative recycling program. Enthusiasm on the part of owners and employees will also be enhanced.



## Proposed Program: Infrastructure

For source-separated recycling, the Dinkytown business district will be divided into recycling zones based on blocks or half blocks. For each zone, there will be a zone volunteer who can assist the committee with educational components in his or her area. There are eight zones proposed (see inserts at the end of this chapter for maps).<sup>3</sup> The reasons for these subdivisions are clear:

- It is not logical for businesses to leave all of their recyclables at a single location in Dinkytown. Distance and safety concerns make this unfeasible. Zones based on blocks or half-blocks may not solve all distance issues but they do eliminate streets as a barrier to convenience.
- Zones are based on existing businesses that share dumpsters such as the tenants in the Dinkydome. These arrangements should continue and be improved upon by expanding the program to include more recyclable items or educating owners and employees to do a better job of sorting what they already recycle, and to also consider ways to reduce the amount of waste they generate.

### Limited Space

The implementation of a source-separated recycling program poses some interesting space dilemmas. Questions to be answered include: For each area, on whose property should the receptacles be placed? How will irregularly shaped areas be dealt with? Who will pay for and take care of receptacles inside businesses (e.g. containers for restaurant customers and copy center customers)? Where should these "in-house" receptacles be placed and do they pose space issues? The recycling committee and coordinator may need to address these challenges. The following infrastructure descriptions should provide assistance.

### Description of Infrastructure

Each zone will be described as well as the specific issues pertinent to them. For each area, placement of receptacle is based on volume produced. For instance, if Autographics produces the most paper in its area, then the paper receptacle would be placed closest to Autographics. If none of the businesses produce enough of one material for the placement of a receptacle to be feasible, then they may need to use the next closest container in a different zone.

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<sup>3</sup>Zones were derived by drawing circles around the waste dumpster location for each major generator or generators on each block. The diameters of all circles are roughly equal to the length of Dinkytown blocks. Businesses were placed into zones by taking dumpster-sharing relationships and barriers such as streets into account.

Theoretical participation is based on those who answered the recycling questionnaire in February and March 1997 (51 businesses).

Please see results of follow-up questionnaire in Appendix E for opinions regarding distance issues (e.g. how far is too far to walk for individual businesses?).

### **Zone 1**

Areal Extent: north of 5th St. and west of 14th Ave.

Businesses Involved: University Technology Center (UTec: includes a number of diverse nonprofit agencies)

#### **Summary:**

UTec's management already runs a successful source-separated recycling program. They also utilize the services of Second Harvest Farms for their deli. Incorporation of the UTec Center into Dinkytown's cooperative program would certainly strengthen initial successes. In addition, only one pick-up is necessary since receptacles are located together in the same area.

### **Zone 2**

Areal Extent: western half of the block bounded by 5th St., 4th St., and 13th Ave.

Businesses Involved: Fowl Play, Song Thanh Restaurant, Dreamhaven Too Games and Comics, Post Office

#### **Summary:**

Fowl Play and Song Thanh Restaurants will have separate food disposal programs. Glass and cardboard receptacles may be placed between Song Thanh and Fowl Play. Depending on volumes of other recyclable, Zone 2 businesses may need to share other containers with Zone 3. It is difficult to determine these logistics at the present time.

Zone 2 has a smaller number of businesses than other zones. Unfortunately, if it is included as part of Zone 3, then employees may need to walk unreasonable distances to discard materials. And owners at both Fowl Play and Song Thanh (see Appendix E for follow-up questionnaire results) believe any distance beyond "just outside the building" is too far. The committee will face this type of challenge during zone implementation.

### **Zone 3**

Areal Extent: eastern half of the block bounded by 5th St., 4th St., and 13th Ave.

Businesses Involved: First Bank, S.R. Gifts and Jewelry, Lindbloom's Jewelry, International Style and Tan, Camdi Restaurant, Dinkytown Tobacco, Rocky Rococco Pizza, George's Campus Bakery, Espresso Royale, Al's Breakfast, Simm's Hardware, Jerry Raskins Needle Doctor, Bon Appetit, Dinkytown Tub, The Podium, The Book House, House of Hanson

**Summary:**

Once again, food reuse can be provided for each individual restaurant. Two locations for two sets of receptacles may be needed depending on the number of businesses participating. The bakery may want to donate pastries to the Twelve Baskets Program, depending on their situation.

**Zone 4**

Areal Extent: north half of the block bounded by 5th St., 4th St., 14th Ave., and 15th Ave.

Businesses Involved: Burger King, Subway, Dinkytown Video, Dinkytown Wine and Spirits

**Summary:**

This zone has an important advantage: Subway, the Dinkytown Liquor Store, and Dinkytown Video already share recycling and disposal service. Subway may not produce enough food waste for Second Harvest service. The food waste pilot should determine this.

**Zone 5**

Areal Extent: south half of the block bounded by 5th St., 4th St., 14th Ave., and 15th Ave.

Businesses Involved: BW-3 Bar and Grill, CD Exchange, Paris Little Hair House, Vescio's, Dinkytown Hairstylists, Gold Country Campus Apparel, Alpha Print Copy Center, Campus Cards, State Capital Credit Union, Nelson's Office Supply, McDonald's, Purple Onion Coffee, Dinkytown News, Cumming's Used Books

**Summary:**

Vescio's and BW-3 already share service. Paper and newspaper receptacles may be placed next to Alpha Print. Two sets of glass and cardboard dumpsters should be placed between BW-3 and Vescio's and one behind McDonald's. All would have food disposal service separately. Perhaps Vescio's and BW-3 can share service.

The area south of 4th St. SE and east of 14th Ave. SE does not have enough space for recycling bins. Thus, the three businesses on this block (Purple Onion, Dinkytown News, and Cumming's Used Books) will need to share recycling service with the block due north.

**Zone 6**

Areal Extent: western half of block bounded by 4th St., University Avenue, 15th Ave., 14th Ave.

Businesses Involved: Mauer Photography, Dinkytown Bike and Skate, Dinkytown Optical, Milo's on 4th, Blue Serge Alterations, The Hairshaft and Haircutting, Autographics, Pizza Hut

**Summary:**

Autographics, Dinkytown Bike and Skate, and Dinkytown Optical currently share service.

Paper and newspaper receptacles would be located behind Autographics. Pizza Hut will most likely be unable to participate since it is part of a larger corporation with its own waste program. Due to its small size and small volume of waste, this zone may not be viable. Perhaps it should be included with Zone 7. Unfortunately, employees would need to walk farther to dispose of glass, cardboard, and aluminum/tin.

#### **Zone 7**

Areal Extent: eastern half of block bounded by 4th St., University Avenue, 15th Ave., 14th Ave.

Businesses Involved: Hair by Stewarts, Dinkydale Deli, Fast Eddie's Shoe Repair, Dinkytown Family Chiropractic, Kismet Unknown, Asian Alliance, James Hunt Designs, Dinkytown Antiquarian Bookstore, Magus Books and Herbs, Shuang Cheng Restaurant, Gray's Campus Drug, Kinko's, Tom the Tailor, Maya Market, University Computer Center, Bruegger's, Atomic Tattoo, Campus Frame Shop, Ragstock, Annie's Parlor

#### **Summary:**

The density of businesses here may make cooperative recycling easier to manage. Recycling receptacles for paper, newsprint, mail, magazines, tin/alum., cardboard can be placed along the central alley between these businesses. Dinkydale can provide initial successes during implementation. However, space along the alley may pose problems. It is a narrow area, and thus may require a number of smaller receptacles.

#### **Zone 8**

Areal Extent: western half of block bounded by 4th St., University Avenue, 15th Ave., and 16th Ave.

Businesses Involved: Taco Bell, Big Ten Restaurant, Paradigm Course Resource, Hong Kong Express, Espresso 22, Western Development, Starbucks, Erberts and Gerberts, Student Bookstore, TCF Bank, \$1 Rose, Twin City Federal, Council Travel Service, Hannaville Hair Co., Slice of New York Restaurant, UPS Information Center, US Army Recruiting Station

#### **Summary:**

These businesses (except the Student Bookstore) already share disposal and recycling and will be a good starting point for the proposed program.

### **In-house Infrastructure**

In-house infrastructure mainly concerns drinking and eating establishments, but also includes offices and copy centers. Indoor containers for office paper, newsprint, alum/tin, and glass should be arranged in a manner which utilizes space efficiently and is convenient for employees and customers. Areas the committee will need to tackle for these items include:

- Funding sources. Hauler contracts often do not provide indoor containers free of charge.
- Space requirements. The addition of extra containers may cause problems.
- Maintenance of containers (including signs) and replacement costs (see page 29 for funding information).
- Underuse of containers. In the case of restaurants, how should owners and employees persuade the general public to use these containers?
- Lack of modern building infrastructure. Most of the buildings in Dinkytown were constructed before recycling was common. Today, new structures are often designed with recycling in mind.

Some solutions to these dilemmas:

- Agencies such as OEA can provide matching grants (see page 31 for further information). Unfortunately, OEA grants may not be available until after implementation, if the DBA follows this report's timeline.
- Minor renovations may be required to accommodate indoor recycling.
- The DBA should encourage businesses to build new recycling infrastructures when they renovate. This may solve space dilemmas in the long-term.

### **Infrastructure After Implementation: Trouble-shooting**

Although successful implementation may lead to a program which "runs itself," the coordinator and one regular DBA committee will need to maintain its operations.

There are three challenges the DBA may face. First, high business turnover can threaten the program. A major responsibility of the committee and coordinator would be continuing promotion of cooperative recycling to bring new businesses into the program. Continuing education is a necessity. Second, the DBA may face a lack of employee enthusiasm. Incentives for employee participation could solve this dilemma (see Appendix J for examples of incentives). Finally, contamination may pose problems. Again education is the key.

### **Promotion of the Program**

Business owners should be informed of the positive aspects of this program. Flyers, memos, and other correspondences must include a logo to create wide-recognition for cooperative recycling in Dinkytown. Promotion should also target the public as a whole. Elements of public promotion include:

- A window decal for businesses in the program.
- Banners for promotion of the program's kickoff.
- Media attention from local newspapers, community publications, and television.
- Special events such as the Waste Free Friday Campaign already discussed.

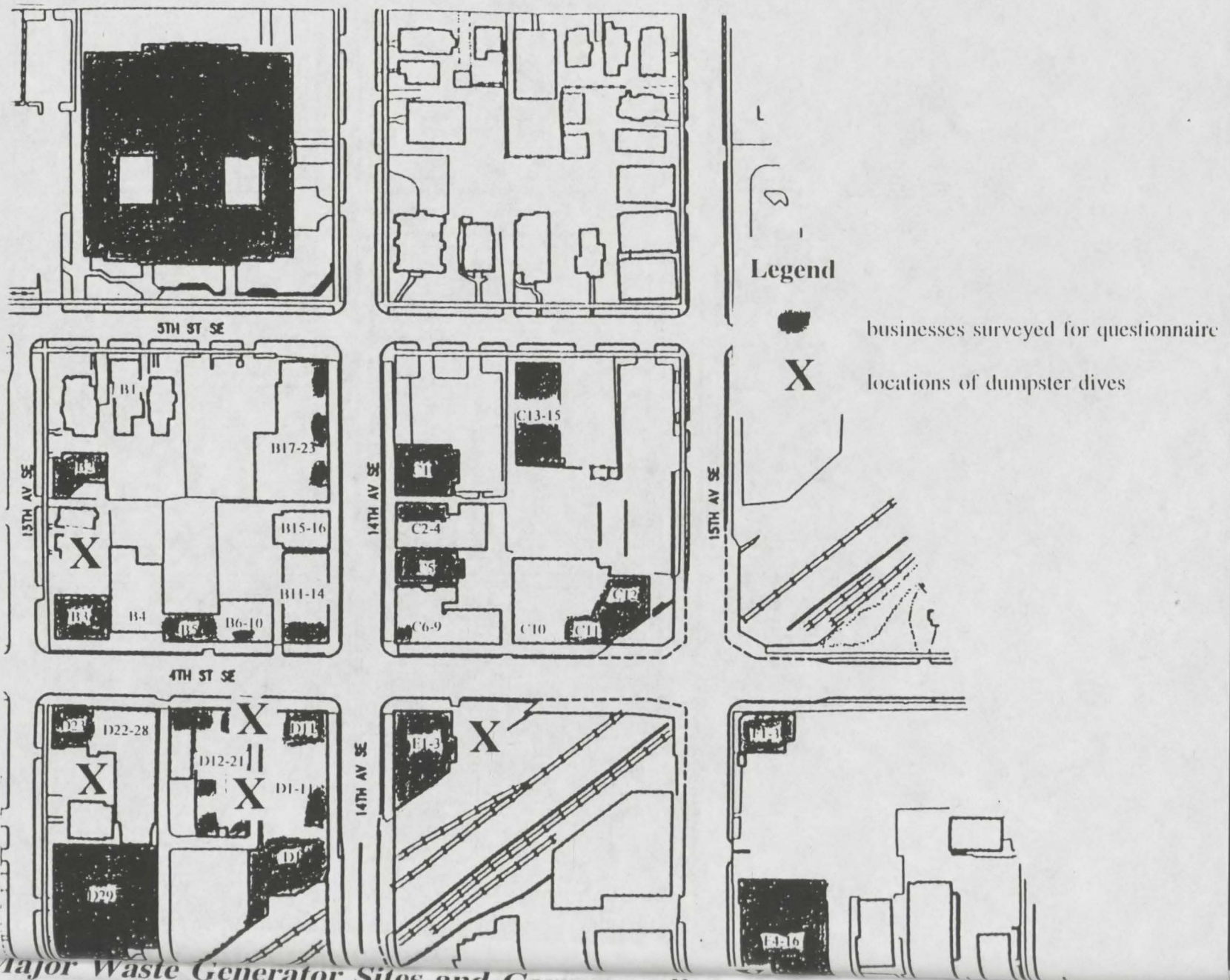
# Map 1: Dinkytown Businesses

(see Appendix B for business names corresponding to each map code)



## Map 2: Dinkytown Businesses Surveyed

(see second list of map codes and business names in Appendix B)

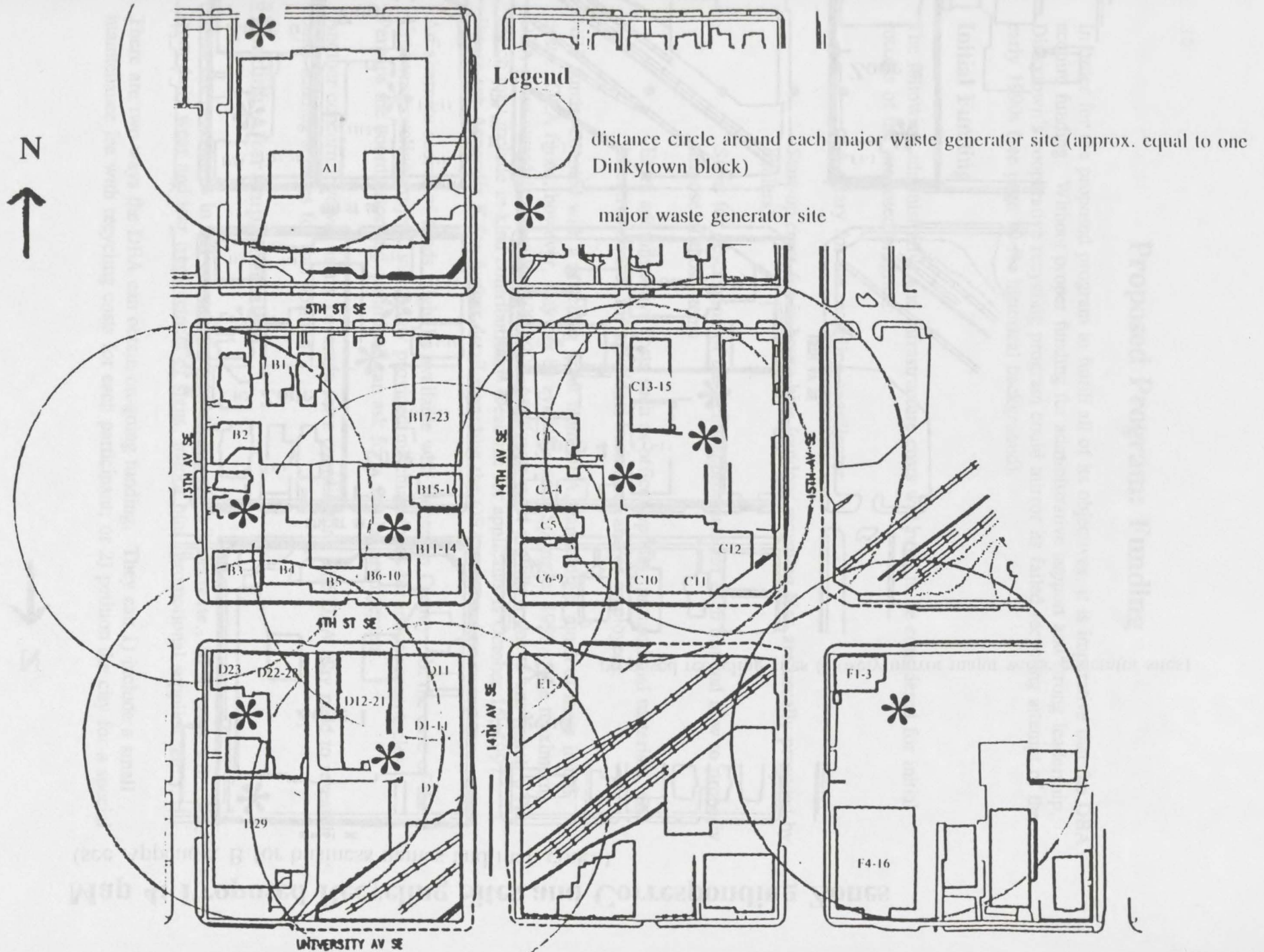


Map 3: Major Waste Generator Sites and Corresponding Circles  
(see Appendix B for business names and addresses)



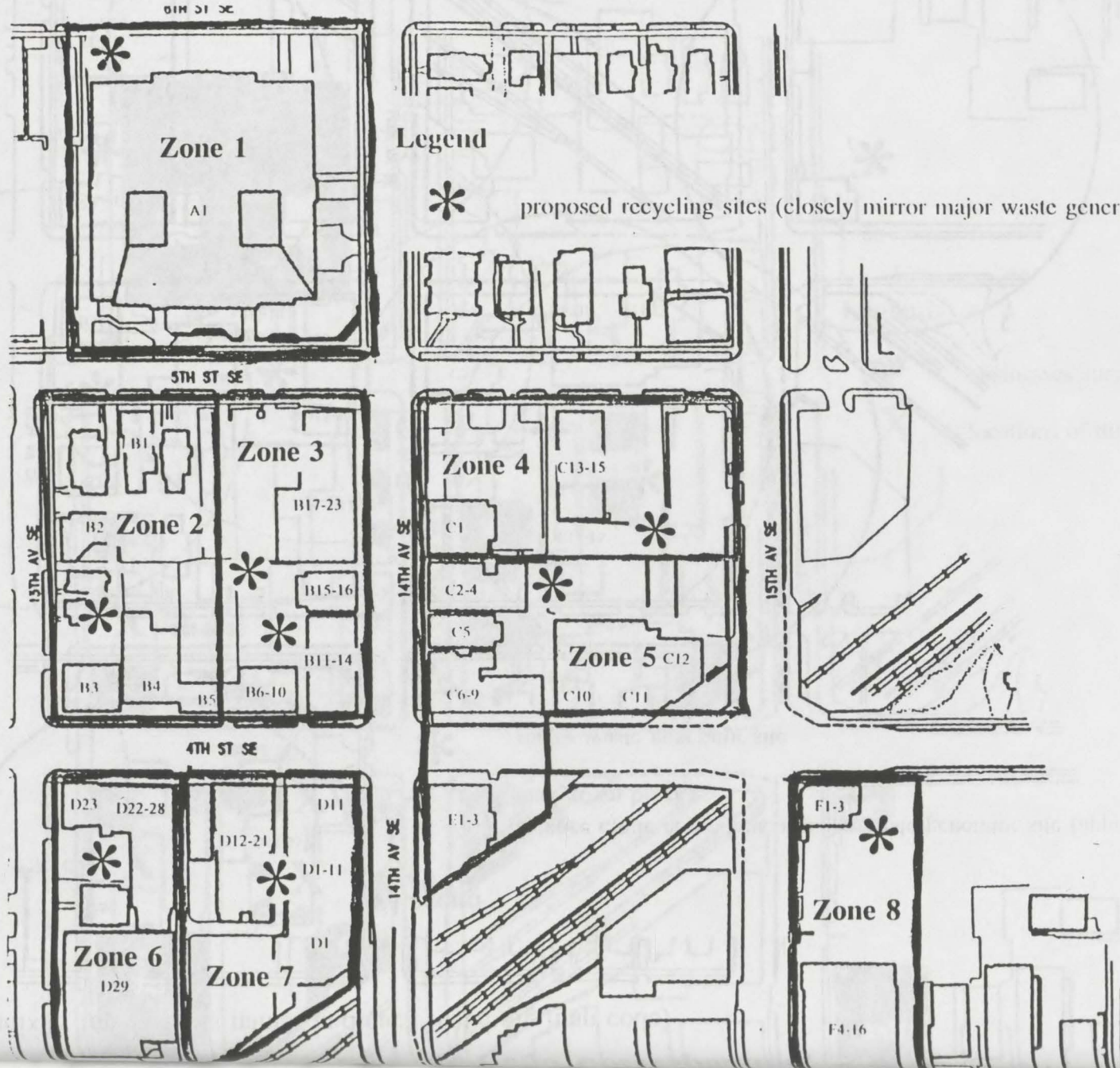
# Map 3: Major Waste Generator Sites and Corresponding Circles

(see Appendix B for business names and each matching map code)



# Map 4: Proposed Recycling Sites and Corresponding Zones

(see Appendix B for business names and map codes)



## Proposed Program: Funding

In order for the proposed program to fulfill all of its objectives, it is imperative that the DBA acquire funding. Without proper funding for administrative support and strong leadership, Dinkytown's cooperative recycling program could mirror its failed recycling attempt of the early 1990s (see page 10 for historical background).

### Initial Funding

The following administrative and infrastructure costs will need to be considered for initial success of the proposed program:

- A salary for the recycling coordinator.
- Start-up costs for in-house bins (outdoor recycling bins are usually provided by haulers).
- Signs for description of the items appropriate for each bin and how to properly dispose of those items.
- Extra administrative costs such as office supplies, promotional materials, and incentive awards for individual businesses and/or employees.

NRP funds, coupled with a matching grant from OEA, can address much of these initial costs. OEA funds, however, may not be available until Spring of 1998. The maximum OEA grant award is typically \$100,000. Applicants must provide a one to one match. The match may include in-kind contributions. Deadline for applicants is October 15, 1997. Please see Appendix K for further detail regarding the OEA grant program.

An alternate source of funds might be available with Hennepin County. In the case of the Uptown recycling project, the county provided matching funds for indoor receptacles. Perhaps the coordinator and committee can ask for a similar arrangement.

Another concern involves salary coverage for a coordinator. The DBA may need to research other funding sources for this position.

### Funding After Implementation

Once the program is in full operation, its funding needs will decrease. Most costs will come from daily wear and tear (replacement of signs, indoor bins, promotional supplies, etc.).

There are two ways the DBA can obtain on-going funding. They can 1) include a small maintenance fee with recycling costs for each participant; or 2) petition the city for a special

tax on all Dinkytown businesses to fund recycling. This solution will require more effort on the part of the DBA and may also require more time.

It is the recommendation of this proposal that a small fee be attached to recycling costs in order to cover routine maintenance. In addition, after implementation, the DBA should make every effort to fund a position which includes recycling coordination in its job description.

## **Proposed Program: Implementation Timeline of Pilot (August 1997 to January 1998)**

All of the elements previously discussed will take some time to implement. Gradual introduction of program elements will ensure smooth operations after implementation. It is difficult to provide an accurate timeline for the program, but a general chronology follows.

### **Timeline**

#### **May**

The recycling intern presents executive summary of proposal at DBA executive committee meeting.

#### **June**

June 12:

Draft report presented at the DBA general membership meeting.  
Recycling committee formed.

#### **Mid-summer**

Experts on composting and hog farm reuse give presentations. Restaurant owners attend.

#### **August**

First Week:

First committee meeting.

Second Week:

Bidding process for haulers begins, coordinator selected.

Third Week:

Education/training for food reuse.

**Fourth Week:**

Food reuse pilot begins before source-separated recycling. Coordinator closely monitors program. Restaurants gradually added. Bids received from haulers.

**September****First Week:**

Committee evaluates food reuse program and discusses hauler options.

**Second Week:**

Committee announces selection of haulers and meets with the hauler to clarify contract.

**Third Week:**

Committee and coordinator finalize contract with hauler. Hauler works closely with the committee on program details.

**Fourth Week:**

Implementation begins with Zone 8 (Dinkydome). Zone members, the committee, the hauler, and coordinator train owners and employees in this zone.

Food reuse program now fully operational.

**October****First Week:**

More training and troubleshooting for Zone 8.

**Second Week:**

Implementation continues with Zone 1 (University Technology Center). UTec management, the hauler, committee, zone volunteer, and coordinator train employees in this zone.

Third Week:

More training/troubleshooting.

Fourth Week:

(Assuming smooth implementation, two zones might be added to the program every two weeks.) Two more zones added. Zone 7 (Dinkydale) will be one of these zones.

**November**

First Week:

Two more zones added (now: total of six).

Second Week:

More training/troubleshooting.

Third Week:

Two more zones added to bring the source-separated recycling program into full operation (eight zones total).

Fourth Week:

Committee and coordinator conduct survey to uncover problem areas.

**December**

Entire Month:

Coordinator works with individual businesses to reduce waste and conserve energy (e.g. changing from single-use milk cartons to bulk containers and switching to reusable utensils).

First Week:

Kick-off of waste reduction month.

**Second Week:**

Committee and coordinator analyze survey results.

**Third Week:**

Committee and coordinator discuss solutions to problem areas apparent from the survey.

**Fourth Week:**

End of first "reduction month."

**January****Entire Month:**

Coordinator works with individual businesses to reduce waste and conserve energy.

**First Week:**

Committee and coordinator evaluate success of first reduction month.

**Second Week:**

Coordinator monitors program.

**Third Week:**

Business owners are asked if they wish to continue with the pilot program.

**Fourth Week:**

Committee and coordinator analyze success of pilot program. Pilot program ends and permanent program begins. Coordinator's position should continue if possible.

**After Implementation**

The DBA will evaluate the program quarterly. The recycling committee will disband and a pre-existing committee will lead operations, or the recycling committee will meet less frequently. Assuming smooth implementation, all program elements will continue. The DBA will consider program improvements as necessary. Each time the program is evaluated, changes should be made accordingly to preserve or improve cost and convenience factors.



## Alternative Programs

While the 3 R's approach is the most ideal program for any business district, this report must acknowledge that alternative programs may be necessary. Two factors will reduce the proposed program's goals: a funding shortage and limited participation. In both cases, source-separated recycling and food waste reuse will continue as goals for Dinkytown's program. These are essential elements of a recycling cooperative in Dinkytown.

### Alternative Programs: Funding Shortage

If there is a funding shortage, then certain crucial elements of the proposed program may need to be cut. Time-consuming complications or limited qualifications may affect funding eligibility. DBA should be prepared to handle these situations. Three scenarios are listed from slightly problematic to severely problematic.

#### Scenario #1: Slight Funding Problems

This would be a situation in which funds would allow for a coordinator, but with fewer hours per week (12 hours instead of 30, for instance). The coordinator's position could become an undergraduate or graduate internship. In this case, the committee may wish to limit the coordinator's job description. Consultation for businesses in the areas of reduction and promotion may no longer be practical under such constraints. Comprehensive promotion of the program may also no longer be practical.

The coordinator, however, could still provide general information (flyers, memos, etc.) to Dinkytown businesses. It would be the responsibility of each individual business owner to reduce and reuse on their own without the personal assistance of a coordinator. Source-separating recycling and food waste reuse would continue with support from a coordinator.

#### Scenario #2: Moderate Funding Problems

If there is not enough funding for a coordinator position, reduction and reuse measures may be severely limited. The program can continue, however, provided there are dedicated committee members and a clear mission statement. Committee members and zone volunteers may not have the time to research and teach reduction methods, but they can set an example for other businesses to follow. Unfortunately, the committee may not be able to constantly reevaluate recycling in Dinkytown without a coordinator. This will severely limit program improvement.

Source-separated recycling infrastructure (indoor and outdoor) will continue assuming adequate funding. The committee will most certainly be able to implement source-separated recycling for all of Dinkytown. Food waste reuse can still be strongly encouraged.

### **Scenario #3: Severe Funding Problems**

If the DBA receives no funding at all, such a situation would require dedicated and responsible committee members and zone volunteers who could run the bidding process for selection of a recycling hauler. It would also require that individual zone volunteers make sure that their zone has proper signage, and that employees and owners are educated properly for recycling. The committee will need to enact some creative measures for the installation of indoor bins. A monthly fee may be required for these items. Food waste reuse can be offered as an option to individual businesses. Again, the lack of funds will severely limit program improvement.

### **Alternative Programs: Limited Participation**

Limited participation on the part of owners, employees, and customers may also require program modifications. Less participation of major waste generators or lack of employee enthusiasm could create challenges. There are three scenarios for this situation which vary from slightly problematic to severely problematic: limited employee and/or customer participation, limited participation on the part of major waste generators, and limited participation on the part of committee members and/or zone volunteers.

#### **Scenario #1: Limited employee and/or customer participation**

Employees are, for the most part, the backbone of any cooperative recycling program, for ultimately they are the ones who deal directly with waste and recyclables. It will be in the best interests of business owners and managers to reiterate to their employees the importance of proper waste disposal and separation of recyclables. However, if this system does not work, it may be necessary to rethink aspects of the program. For example, if a substantial percentage of employees contaminate recyclables on a day-to-day basis and educational components have been unsuccessful, then the DBA may wish to consider co-mingled recycling as an alternative. While the proposed program does not recommend co-mingled recycling (see page 17 for further detail), it may solve problems inherent in limited employee participation.

Limited customer participation presents a more challenging problem. Business owners can only suggest that customers assist their operations with environmentally-friendly and cost-cutting measures. Good signage can often rectify this situation. Certain owners, however, may need to eliminate in-house recycling altogether if customers are not responding.

#### **Scenario #2: Limited Participation on the Part of Major Waste Generators**

If even one major waste generator from one zone will or cannot participate, then the committee and coordinator may face challenges when implementing source-separated recycling. Two factors may prevent certain businesses from joining: 1) an inability to

change haulers due to contract obligations and 2) misinformation regarding the proposed program. For certain zones, the DBA may need to wait until contract obligations are complete. Such a situation would require a more gradual implementation of the proposed program.

Every effort should be made to bring major waste generators into the program. Without them, the program's convenience may be lost since some employees and owners may need to travel further distances to drop-off their recyclables.

### **Scenario #3: Limited Participation from the Committee and Zone Volunteers**

Poor leadership on the part of the committee and/or zone volunteers will have a negative impact on the proposed program. The recycling coordinator may be able to fulfill some committee and zone volunteer responsibilities if necessary. If the coordinator is running most of the program, only source-separated recycling and food waste reuse may be feasible.

## Conclusions

Ideally, this report can become a good resource and guide for program implementation in Dinkytown. During the implementation stages, a committee and recycling coordinator will need to continue research in order for Dinkytown's recycling program to be successful.

### Summary of Proposed Program

From August 1997 to January 1998, the DBA should implement a cooperative recycling program based on the 3 R's: Reduce, Reuse, and Recycle. **The appointment of a recycling committee, coordinator, and zone volunteers are essential for proper implementation.** Funding is available from Marcy-Holmes NRP and OEA.

With funding secured, the DBA can gradually introduce a cooperative program for eight zones based on blocks and half blocks. Zone volunteers will assist the coordinator and committee in implementation of source-separated recycling and food waste reuse for each zone. Zone volunteers will also assist the coordinator and committee when educating owners and employees on the specifics of source-separated recycling and food waste reuse.

The coordinator, with the assistance of the committee, will also have responsibilities of program promotion and reduction education. Owners and employees will learn new reduction methods designed to save them money and save the environment at the same time.

### The Design Stages: A Rewarding Yet Challenging Experience

The design stages involved more extended time and dedication than we originally anticipated. The original internship description implied a design time of three months (February, March, and April 1997) with approximately 300 hours. In reality, design time was four months and two weeks (February-June 1997) with the same hours. Providing reliable information for this report involved several interviews, dumpster dives, phone calls, analysis, and long hours in front of the computer.

Interviews with business owners required several hours of fierce determination, flexibility, and persistence. Cooperation of business owners during the interview process was much appreciated. Most dinkytown business owners realized the importance of these interviews and appeared to give them serious attention.

Dumpster dives also presented some interesting challenges. The weather was often a barrier to speedy completion of the dives. (It seemed as though the winter would never end.) Determining the appropriate descriptions for certain materials/items also added time to the dives. Finally, volunteers are hard to find when working with waste. Conducting a dumpster dive with only two people (and, in one case, just the intern) created a less than ideal situation.

Phone calls to environmental agencies and organizations with cooperative recycling programs involved the arduous process of "phone tag". Messages were left ad nauseam for some contacts. In the end, persistence paid dividends. For instance, phone calls to the King County Department of Natural Resources produced a recycling resource guide for businesses (see Appendix L for further detail). Program design may have been easier if we had acquired the King County guide at the beginning of the design stages.

Data analysis was often completed two or three weeks after data collection. It was crucial that the intern write his analysis in a clear, precise manner. Most of the time, this was the case. Sometimes, however, written data required some memory recall which led to some inaccuracies. Questionnaire results and dumpster dive results are not definitive answers. They provide a general framework for future action.

This report was researched and written by the recycling pilot program intern with the guidance of Victor Raymond, coordinator for Marcy-Holmes NRP, and Kelly Luck with OEA. Every Friday at 4 pm from February to early June, the intern met with Mr. Raymond and Ms. Luck to review his work. Research, analysis, and writing were, for the most part, independent responsibilities.

Business associations wishing to begin recycling cooperatives of their own should take these factors into consideration. It is important for organizations to understand dedication and time requirements. This report is an attempt to ease the barriers inherent in design stages of cooperative recycling.

## Appendix A: Resource Lists

### Contact Names and Agencies Offering Environmental Assistance

**Ayde, Mary**

Minnesota Waste Association  
1030 Evergreen Trail  
Lino Lakes, MN 55014  
(612) 785-8807

Notes: Minnesota Waste Association is a membership organization for independent waste haulers.

**Black, Ginny**

Local Government Assistance Planner  
520 Lafayette Road N. [2nd floor]  
St. Paul, MN 55155-4100  
Personal Office Line: (612) 215-0284  
General Information: (612) 296-3417  
Fax: (612) 215-0246

e-mail: [ginny.black@moea.state.mn.us](mailto:ginny.black@moea.state.mn.us)

Notes: Expert on composting and haulers' services/fees.

**Bosold, Barry**

University Technology Center (UTec)  
1313 5th St. SE  
Minneapolis, MN 55414  
(612) 379-3800

Notes: UTec's management runs an extensive recycling program for its tenants.

**Costalano, Andy**

Minneapolis Division of Solid Waste and Recycling  
309 2nd Ave. S.  
Minneapolis, MN 55401  
(612) 673-2917

**Cretors, David**

Technical Assistance Director  
Minnesota Waste Wise  
30 East 7th St.  
St. Paul, MN 55101  
(612) 292-4662  
(800) 821-2230  
Fax: (612) 292-4656

Notes: Mr. Cretors provided descriptions of employee incentive programs for reduction, reuse, and recycling. Minnesota Waste Wise is a membership organization for environmentally-aware businesses. The membership fee is \$50 a year. Waste Wise offers a money-back guarantee if a business does not save \$50 or more a year as a member of Minnesota Waste Wise. The DBA should join this organization.

**DeWall, Cari**  
Uptown Art Fair  
(612) 825-6304

Notes: Ms. DeWall was the executive director of the Uptown Business Association during implementation of Uptown's cooperative recycling program.

**Donatucci, Dana**  
Associate Administrator  
Facilities Management  
University of Minnesota  
(612) 624-8507  
donat001@maroon.tc.umn.edu

Notes: Mr. Donatucci is familiar with dumpster dive procedures and assists in the administration of the university's recycling program.

**Erickson, Greg**  
Midwest Specialty Marketing  
P.O. Box 40368  
St. Paul, MN 55104  
(612) 645-9279

Notes: Provided signage for NEC's recycling program in the city hall annex and Lowry Building. Mr. Erickson's company can provide signage for bins inside Dinkytown businesses.

**Fitzpatrick, Cindy Lerick**  
Executive Director  
Uptown Business Association  
1422 West Lake St., Suite 202  
Minneapolis, MN 55408  
(612) 823-4581  
Fax: (612)823-3158

Notes: The Uptown Association was the first business association to cooperatively recycle in the Twin Cities.

**Flannery, Karen**

Executive Director  
Minnesota Waste Wise  
30 East 7th Street  
Suite 1700  
St. Paul, MN 55101  
(800) 821-2230  
(612) 292-4681  
Fax: (612) 292-4656

Notes: Waste Wise is a membership organization for the environmental education of businesses.

**Hibbs, Greg**

Center Manager  
Calhoun Square Uptown  
Management Office  
3001 Hennepin Ave. S.  
Minneapolis, MN 55408  
(612) 824-1240

Notes: Calhoun Square's management set up the first recycling program of its kind in Minnesota.

**Hudson, Eric J.**

EnvironMentors  
1618 Central Avenue NE  
Minneapolis, MN 55413  
(612) 789-4352  
Fax: (612) 789-7901

Notes: EnvironMentors is organized by the North East Business Association and provides recycling resources for businesses in the Twin Cities. Businesses may also meet with mentors to discuss waste reduction issues.

**Johnson, Curt**

Second Harvest Farms  
309 202nd Ave. NW  
Cedar, MN 5011  
(612) 434-9044  
Fax: (612) 434-5430

Notes: Second Harvest Farms is a hog farm reuse group. They serve businesses such as the UTec Deli and Annie's Parlor in Uptown.



**Kenny, Dan**

City of Minneapolis Recycling

(612) 673-2137

Notes: Mr. Kenny may know other sources of information regarding recycling.

**Kroening, Paul**

Hennepin County

(612) 348-6358

**Lombardi, Eric**

Executive Director

Eco-Cycle, Inc.

P.O. Box 19006

Boulder, CO 80308-2006

(303) 444-6634

Notes: Mr. Lombardi assists Boulder businesses with recycling.

**Luck, Kelly**

Market Development

Minnesota Office of Environmental Assistance (OEA)

520 Lafayette Road N. [2nd floor]

St. Paul, MN 55155-4100

Personal Office Line: (612) 215-0220

General Information: (612) 296-3417

Fax: (612) 215-0246

e-mail: [kelly.luck@moea.state.mn.us](mailto:kelly.luck@moea.state.mn.us)

Notes: Ms. Luck was the community mentor for the Dinkytown Recycling Pilot Program Intern.

**Madole, John**

Micro Life USA Inc.

PO Box 177

Mora, MN 55051

(320) 679-5546

Notes: Mr. Madole is an expert on composting for food reuse purposes. He is currently considering a position with SKB. The DBA should contact Mr. Madole at his home phone number: (612) 927-5179. According to Mr. Madole, SKB would be eager to work with the DBA to make a composting program possible.

**McPherson, Bill**

Advanced Environmental Consultants

(612) 578-0705

Notes: Mr. McPherson is familiar with the guidelines for food storage.

**Meyer, Glenn**

Educational Clearinghouse Coordinator  
Minnesota Office of Environmental Assistance (OEA)  
520 Lafayette Road N. [2nd floor]  
St. Paul, MN 55155-4100

General Information: (612) 296-3417

Notes: The OEA Educational Clearinghouse offers resources, both written and audio-visual, on reduction, reuse, and recycling.

**Nynas, Will**

Nynas Consultants  
(612) 721-3324

Notes: Mr. Nynas assisted in the development of the Uptown cooperative recycling program.

**Polanski, John**

Waste Reduction Specialist  
Minnesota Technical Assistance Program (MnTAP)  
1313 5th St. SE, Suite 207  
Minneapolis, MN 55414-4504  
(612) 627-4646 Fax: (612) 627-4769  
e-mail: jpolansk@mntap.sph.emn.edu

Notes: Mr. Polanski is an expert on food waste reuse.

**Schoenecker, Pat**

St. Paul Neighborhood Energy Consortium (NEC)  
475 Cleveland Ave. N.  
St. Paul, MN 55104  
(612) 644-7678

Notes: NEC is a nonprofit organization dedicated to serving St. Paul area residents and businesses. It provides information and services regarding environmental practices.

**Sinclair, Doc**

SKB  
(612) 224-6329

Notes: In mid-summer, SKB plans to organize composting projects around the Twin Cities. They may provide composting service for the DBA at low cost. The DBA should contact them.

**Sloan, Tim**

Waste Reduction and Recycling  
Solid Waste Division  
Department of Natural Resources  
Yesler Building  
400 Yesler Way, Rm. 600  
Seattle, WA 98104  
(206) 296-4429  
Fax: (206) 296-0197

Notes: contact for the Waste Free Fridays program in King County. Also contact for Green Works.

**Williams, Shiela**

Administrator  
Minnesota Public Interest Research Group (MPIRG)  
2414 University Ave. SE  
Minneapolis, MN

Notes: MPRG was the parent organization for B.A.R.T.E.R which assisted the DBA with an unsuccessful recycling pilot program in the early 1990s.

**Wood, Evan**

Twelve Baskets Program  
612/484-5117

Notes: Twelve Baskets provides food reuse for human consumption.

## Metro Recycling Service Providers

Recycling service providers pick up your recyclables; however, services do vary. Full-service providers specialize in recycling, offer promotional materials and employee training. Some specialize in one or two recoverable materials; others are primarily waste haulers who also handle recyclables. Minimum quantity requirements and fees vary, so you may want to compare services and fees. Most provide containers. See page 20 for tips on selecting a recycling service provider.

The project staff developed the directory below by researching various business directories and publications. Entries were verified by phone and included at no charge. The directory is not intended to be an endorsement of any business, organization or product. Any omissions or inaccuracies are unintentional. For additional listings, we recommend county solid waste offices, MPCA, OEA or the Yellow Pages.

Shading indicates the business offers both trash disposal and recycling services.

Name	Recoverable Resources							Counties Served	Additional Materials & Notes	
	A L U M I N U M C A N S	C A R D B O A R D	G L A S S	M A G A Z I N E S	N E W S P A P E R I N T	O F F I C E P A P E R	* P L A S T I C			S T E E L C A N S
A-1 A Beyer's Hauling, Inc. Phone: 754-6655									Anoka Dakota Hennepin	Appliances, scrap metal, lead-acid batteries; one-time pick up specialist
Aagard Environmental Service Phone: 686-2371	c	+	c	+	+	+	PETE PS n-b c	c	Anoka Dakota Hennepin Ramsey	Must be trash customer; deskside collection containers
Accessibility, Inc. Phone: 331-5958						d h m			Seven metro counties	On-site; accept mixed plastic and paper which needs to be separated; separation of paper wrapped in plastic
Ace Solid Waste, Inc. Phone: 427-3110	c	+	c	+	+	+	PETE n-b c	c	Anoka Ramsey Hennepin	Training; phone books
Aspen Waste Systems, Inc. Phone: 644-3488	c	+	c	+	+	h m +	PETE HDPE n-b c	c	Anoka, Dakota Hennepin Ramsey, Scott Washington	Deskside collection containers; training; phone books

Name	Recoverable Resources								Counties Served	Additional Materials & Notes
	A L U M I N U M  C A N S	C A R D B O A R D	G L A S S	M A G A Z I N E S	N E W S P R I N T	O F F I C E  P A P E R	* P L A S T I C	S T E E L  C A N S		
BFI Waste Systems/Action Disposal System, Inc. Phone: 455-8634	c	+	c	+	+	h +	PETE HDPE c	c	Anoka, Dakota Hennepin Ramsey Washington	Deskside collection containers: phone books
BFI of MN Phone: 941-8394	c	+	c	+	+	h +	PETE HDPE n-b c	c	Seven metro counties	Drop-off facilities; deskside collection containers; scrap metal; phone books
Best Disposal Services, L.L.C. Phone: 477-6856	✓	✓	✓	✓	✓	h m	PETE HDPE	✓	Hennepin	Fluorescent/HID recycling; phone books; training
Buckingham Disposal, Inc. Phone: 226-6441	✓		✓		✓		PETE HDPE PVC n-b	✓	Scott	Must be trash customer; dropoff facilities; scrap metal; appliances; lead-acid batteries
Chaska Sanitation, Inc. Phone 448-2547	✓	✓	✓	✓	✓	h m	PETE HDPE n-b	✓	Carver Scott	Drop-off facilities; must be trash customer; deskside collection containers; appliances; phone books
Dick's/Lakeville Sanitation Phone: 469-2239	c	+	c	+	+	+	n-b c	c	Anoka Dakota Hennepin Scott	Deskside collection containers

- c = commingled recyclables (cans and bottles: glass, metal and plastic)
- d = confidential document service
- h = high grade (white/pastel bond, computer & copy paper & envelopes -- no labels, stickers or cellophane)
- m = mixed grade (paper & envelopes with labels, stickers & cellophane; glossy paper; manila envelopes)
- +
- n-b = necked bottle grade plastics
- \* = PETE, HDPE, PVC, LDPE, PP, PS - see page 49 for plastic identification and information.

Metro Recycling Service Providers

Name	Recoverable Resources								Counties Served	Additional Materials & Notes
	A L U M I N U M  C A N S	C A R D B O A R D S	G L A S S	M A G A Z I N E S	N E W S P A P E R I N T	O F F I C E  P A P E R	* P L A S T I C	S T E E L  C A N S		
Document Destruction Service, Ltd. Phone: 898-3030						d h m			Seven metro counties	Drop-off facilities; on-site document destruction; deskside collection containers; training
E-Z Recycling, Inc. Phone: 644-6577	c	+	c	+	+	h +	PETE HDPE PVC LDPE PP n-b c	c	Anoka Hennepin Ramsey	Drop-off facilities; training; phone books;
Eagan Sanitation Phone: 686-2378	c	+	c	+	+	+	PETE HDPE PS n-b c	c	Dakota Ramsey	Must be trash customer; deskside collection containers; training; phone books
East Central Sanitation Phone: 689-2171	✓	✓	✓	✓	✓	h m	PETE HDPE	✓	Anoka	Must be trash customer; phone books
Eco-Shred Corp. Phone: 374-5999						d h m			Seven metro counties	On-site document destruction
Forest Lake Sanitation Phone: 464-2321	✓	+	✓	+	+	h m +	PETE HDPE	✓	Anoka Washington	Must be trash customer; drop-off facilities; deskside collection containers; training; phone books
Future Companies Phone: 362-0755	✓	✓		✓	✓	d h m	PETE HDPE PVC LDPE PP PS n-b	✓	Anoka Hennepin Ramsey Washington	Deskside collection containers; scrap metal; paper cores; phone books; training

Name	Recoverable Resources								Counties Served	Additional Materials & Notes
	A L U M I N U M C A N S	C A R D B O A R D S	G L A S S	M A G A Z I N E S	N E W S P R I N T	O F F I C E P A P E R	* P L A S T I C	S T E E L C A N S		
Gallagher's Service, Inc. Phone: 784-1722	✓	✓	✓		✓	h m	PETE HDPE	✓	Seven metro counties	Drop-off facilities for customers only; scrap metal
Johnson Sanitation Phone: 755-3794	✓	✓		✓	✓		PETE HDPE n-b	✓	Anoka Hennepin Ramsey	
Mohawk Security Disintegration Phone: 888-3852		✓				d h m			Seven metro counties	Bonded employees; certificates of destruction; security containers available
Peterson Bros. Sanitation Phone: 427-1688	✓	✓		✓	✓	h m	PETE HDPE	✓	Anoka Hennepin	Appliances; lead-acid batteries; phone books
Pioneer Paper Stock Phone: 374-2280	✓	✓		✓	✓	h			Seven metro counties	Drop-off facilities; limited redemption
Prior Lake Sanitation Phone: 447-6898	✓	+	✓	+	+	h m +	n-b	✓	Scott	Drop-off facilities; scrap metal; appliances; lead-acid batteries; automotive fluids; phone books; training
Quality Waste Control, Inc. Phone: 435-3454	✓	+	✓	+	+	h m +	n-b	✓	Carver Dakota Hennepin Scott	Deskside collection containers; training; phone books
Randy's Sanitation Phone: 479-3335	✓	✓	✓	✓	✓	h m	PETE HDPE n-b	✓	Seven metro counties	Phone books

c = commingled recyclables (cans and bottles: glass, metal and plastic)

d = confidential document service

h = high grade (white/pastel bond, computer & copy paper & envelopes - no labels, stickers or cellophane)

m = mixed grade (paper & envelopes with labels, stickers & cellophane; glossy paper; manila envelopes)

+ = mixed grade + (magazines, newsprint, office paper & OCC); haulers may also collect materials separately

n-b = necked bottle grade plastics

\* = PETE, HDPE, PVC, LDPE, PP, PS - see page 49 for plastic identification and information.

Metro Recycling Service Providers

Name	Recoverable Resources								Counties Served	Additional Materials & Notes
	A L U M I N U M C A N S	C A R D B O A R D	G L A S S	M A G A Z I N E S	N E W S P R I N T	O F F I C E P A P E R	* P L A S T I C	S T E E L C A N S		
Recycle MN Resources Phone: 224-2666	✓	✓	✓	✓	✓	h m	n-b	✓	Anoka, Dakota Hennepin Ramsey	Drop-off facilities; pickup based on volume and mix
Red Arrow Waste Phone: 224-2035	✓	✓	✓	✓	✓	h m	PETE HDPE n-b	✓	Dakota Hennepin Ramsey Washington	Must be trash customer
Security Archives Phone: 645-6459						d h m			Seven metro counties	Deskside collection containers
Smith Recycling Phone: 868-9456	✓	+		+	+	+			Dakota Hennepin Ramsey	Deskside collection containers; phone books; training
Steve's Cardboard Salvage Phone: 647-9879		✓				h			Hennepin Ramsey	Roll-off containers available for large quantities of OCC
Super Cycle Phone: 224-5081	✓	✓	✓	✓	✓	m	PS n-b	✓	Anoka Hennepin Ramsey Washington	
Try-Cycle Recovery Systems Phone: 541-1401	c	+	c	+	+	h m +	PETE HDPE PVC LDPE PP n-b c	c	Anoka Dakota Hennepin Ramsey Washington	Drop-off facilities; deskside collection containers; phone books
United Waste Systems Phone: 227-6394	c	✓	c	+	✓	m	n-b c	c	Seven metro counties	Flexible recycling programs; large quantities; roll-off containers



Name	Recoverable Resources							Counties Served	Additional Materials & Notes
	A L U M I N U M C A N S	C A R D B O A R D	G L A S S	M A G A Z I N E S	N E W S P R I N T	O F F I C E P A P E R	* P L A S T I C		
Waldorf Corporation Phone: 641-4874		+		+	+	d h m +			Seven metro counties Drop-off facilities; deskside collection containers; phone books; training
Walter's Recycling & Refuse Phone: 780-8464	c	+	c	+	+	m +	PETE HDPE PVC LDPE n-b c	c	Anoka Hennepin Ramsey Drop-off facilities; appliances; scrap metal; phone books
Waste Management Phone: 784-8349/890-1100	c	+	c	+	+	+	PETE HDPE n-b c	c	Seven metro counties Deskside collection containers; training; fluorescent recycling; phone books; security containers; consulting
Weller Disposal Phone: 822-6158	c	✓	c		✓	m	PETE HDPE PVC n-b c	c	Anoka Dakota Hennepin
Weyerhaeuser Phone: 631-1693	c	✓	c	✓	✓	d h m	PETE HDPE n-b c	c	Seven metro counties Drop-off facilities; redemption for cans; specialize in mixed grade

- c = commingled recyclables (cans and bottles: glass, metal and plastic)
- d = confidential document service
- h = high grade (white/pastel bond, computer & copy paper & envelopes - no labels, stickers or cellophane)
- m = mixed grade (paper & envelopes with labels, stickers & cellophane; glossy paper; manila envelopes)
- + = mixed grade + (magazines, newsprint, office paper & OCC); haulers may also collect materials separately
- n-b = necked bottle grade plastics
- \* = PETE, HDPE, PVC, LDPE, PP, PS - see page 49 for plastic identification and information.

**GARBAGE FEEDER PERMIT HOLDERS  
1996-1997**

Name	County	Address	Permit Number	Telephone Number
Peter Barthold Barthold Farms, Inc	30896	5951 261st Ave NW St Francis MN 55070	5	612-444-7447
Cameron E Strand Breezy Acre Farms	32383	12880 Chisago Blvd Chisago City MN 55013	12	612-462-5298
Gordon Holter Farm A Food Waste Recyclers, Inc	32409	Rt 1 Box 240 Houston MN 55943	13	800-383-0239
Gordon Holter Farm B Food Waste Recyclers, Inc	35848	Rt 1 Box 240 Houston MN 55943	23	800-383-0239
Michael-Mary Gibson	35637	8479 Boundary Line Rd Askov MN 55704	27	320-838-3603
Doug-JoMarie Hentges J Douglas Farms	30902	15720 Naples St N E Ham Lake MN 55304	10	612-434-8186
Scott-Tom Johnson Johnson Farms	31615	4600 249th Ave N E Isanti MN 55040	4	612-753-2161
LeRoy A Johnson Jr Stratton Farms	31614	1000 261st Ave N E Isanti MN 55040	7	612-444-9828
Diana Jones	18045	H C 79 Box 64 D Kelliher MN 56650	26	218-647-8879
LeRoy-Lanoue Lanoue Farms	32408	1410 3rd Ave N E Glenwood MN 56334	11	612-634-3760
Paul Barthold Paul Barthold Farm	31616	1194 290th Ave N W Isanti MN 55040	6	612-444-6750
Dan Johnson Second Harvest Farms	31619	309 202nd Ave N W Cedar MN 55011	1	612-434-9044
Mickey Johnson Second Harvest Farms	35811	10337 Hwy 30 Hayfield MN 55940	21	507-365 8882
Terry Feigum Subcc Farms	31618	35995 Heilum St N W Princeton MN 55371 5303	9	612-753-1137
Tom Yotter Farm A Triple T Hogs	34444	40850 Vickers St N E Braham MN 55006	19	612-298-2208
Tom Yotter Farm B Triple T Hogs	35854	4888 409th Ave N W Ogilvie MN 56358	22	612-298-2208
Lucinda-Roger Notsch	23221	H C 4 Box 15 Blackduck MN 56630	27	218-647-8808

## Where to Get Samples of Recycled Plastics

Trio Products, Inc.  
PO Box 1319  
Elyria, OH 44036  
(216) 323-5457

- *Recycled/Recyclable 100% PET Egg Cartons and Recycled PET Pellets*

Martin Color-Fi, Inc.  
PO Box 469  
Edgefield, SC 29824  
(800) 843-6382

- *Polyester Fibers (fiberfill, carpet, etc.) made from recycled PET*

Wellman, Inc.  
1040 Broad St., Suite 302  
Shrewsbury, NJ 07702  
(800) 542-7780

Eaglebrook Products, Inc.  
2650 W. Roosevelt Road  
Chicago, IL 60608  
(312) 638-0006

- *Plastic lumber made from recycled HDPE*

Recycled Plastics Industries, Inc.  
1820 Industrial Drive  
Green Bay, WI 54302  
(414) 468-4545

A.R.W. Polywood  
PO Box 277  
Lima, OH 45802  
(419) 224-2283

- *Plastic Lumber made from mixed or commingled plastics*

The Plastic Lumber Co., Inc.  
PO Box 80075  
Akron, OH 44308-0075  
(216) 762-8989

Hammer's Plastic Recycling  
RR3, Box 182, Hwy. 20 & 65 North  
Iowa Falls, IA 50126  
(515) 648-5073

- *Car stops, speed bumps, park benches, picnic tables, etc. made from mixed recycled plastics*

United Resource Recovery, Inc.  
411 Olive Street  
Findlay, OH 45840

- *Recycled HDPE and PET pellets*

National Polystyrene Recycling Co.  
25 Tri-State International  
Lincolnshire, IL 60069  
(708) 945-1991

- *Polystyrene "fluff" and recycled polystyrene pellets*

Hardee's Food Systems, Inc.  
1233 Hardee's Boulevard  
Rocky Mount, NC 27804  
(919) 977-8519

- *Recycled polystyrene sandwich "clamshells"*

The Coca-Cola Company  
Consumer Information  
(800) GET-COKE (800) 438-2653

- *2-liter PET soda bottle*

For more information about plastics recycling, contact the Partnership for Plastics Progress (formerly the Council for Solid Waste Solutions) at 1-800-2-HELP-90; or write: PPP/CSWS Education Program; 1275 K Street NW; Washington, DC 20005.

## Companies Market Plastics Made from Biological Materials

- Metabolix

Address: 303 Third St.

Cambridge, MA 02142

(617) 492-0505 ext.12, fax: 617/492-1996

Contact: Dr. Oliver Peoples

Product is PHA (polyhydroxyalkanoate) biopolymers. Uses include packaging, paper coatings, disposable diapers, fast food serviceware and agricultural films.

- Novon International: NOVAN

Address: 181 Cooper Ave.

Tonawanda, NY 14150

(716) 874-8696, fax: 716/874-8699

Contact: Graham Chapman

Products include a thermoprocessed starch, NOVON, which is produced almost entirely from corn and potato starch and can be used in conventional thermoplastic processing equipment. Natural and synthetic additives are utilized in this product, and the manufacturer claims they are safe and biodegradable.

- Planet Polymer Technologies: *Enviroplastic Z, H, C, U*

Address: 9985 Businesspark Ave., Suite A

San Diego, CA 92131

(619) 549-5130, fax: 619/549-5133

Contact: Tim Ryan

Product is a degradable resin in standard grades and custom formulations. The Z-grade is cellulose based; the petrochemical grades, C,U, and H, are based on proprietary formulas using polyethylene oxide and other polymers. Target markets are medical disposables, agrotechnology, personal hygiene and packaging.

- Zeneca BioProducts: *BIOPOL*

Address: P.O. Box 751

Wilmington, DE 19897

(302) 886-3000, fax: 302/886-5270

Contact: Greg O'Brien

Product is PHBV (poly(3-hydroxybutyrate-co-3-hydroxyvalerate)), and is sold under the BIOPOL name. Zeneca primarily uses plant-based additives and the petroleum additives they do use are non-toxic, the resin itself is made from sugar from cereal crops. The uses have been for blow molding, injection molding, extrusion coatings and some thermoforming, however it is not foamable.

•Cargill: *EcoPLA*

Address: P.O. Box 5698  
Minneapolis, MN 55440  
(612) 742-6324, fax: 612/742-7915  
Contact: Michael Chanen

Products is made from PLA (polylactic acid) and is a biodegradable and compostable plastic. Feedstock is mainly corn and beets. They have done commercial trials on thermoforming, injection molding, cast and blown film, nonwoven fabrics, paper coatings, and extrusion.

•BioPlastics, Inc

Address: 9400 E. Iliff Ave., Suite 252  
Denver, CO 80231  
(303) 369-9545, fax: 303/369-9546  
Contact: Carl Dick

They hold the patent for a thermoplastic which utilizes sugars and agricultural fibers. The sugars represent meltable, moldable binders and the fibers provide mechanical strength and stiffness.

•Eastman Chemical Company: *Cellulose Acetate*

Address: P.O. Box 431  
Kingsport, TN 37662  
(615) 229-3510, fax: 615/229-1673  
Contact: Sam Repass

They are developing a new cellulose acetate material with a fast rate of biodegradation than previous formulations. It is made from 70% wood pulp and 30% anhydrides and acids from coal.

## Appendix B: Dinkytown Businesses/Map Codes

Map Code	Business	Contact Name	Address and Phone
A1	University Technology Center	Barry	1313 5th St. SE (612) 379-3800
B1	Dinkytown Grocery		1308 5th St. SE (612) 331-7250
B2	Song Tanh Restaurant	Dat	418 13th Ave. SE (612) 379-3121
B3	Fowl Play Bar	Mike	1301 4th St. SE (612) 623-3535
B4	Dreamhaven Books	Lance	1309 4th St. SE (612) 379-8924
B5	US Post Office	Gene	1313 4th St. SE (612) 378-2113
B6	First Bank	Sherry	1315 4th St. SE (612) 379-9498
B7	SR Gifts and Jewelry		1319 4th St. SE (612) 331-8680
B8	Lindblom's Jewelry	Mark	1321 4th St. SE (612) 331-5268
B9	International Style and Tan	Tom	1323 4th St. SE (612) 623-9319
B10	Camdi Restaurant	Kiet	1325 4th St. SE (612) 331-4194
B11	National Camera Exchange	Mike	1327 4th St. SE (612) 379-7208
B12	Dinkytown Tobacco Shop		405 14th Ave. SE
B13	Rocky Rococo Restaurant	Pat	407 14th Ave. SE (612) 378-1513
B14	George's Campus Bakery	George	409 14th Ave. SE (612) 378-1898

Map Code	Business	Contact Name	Address and Phone
B15	Espresso Royale Caffè	Dan	411 14th Ave. SE (612) 623-8127
B16	Al's Breakfast	Al	413 14th Ave. SE (612) 331-9991
B17	Simms Hardware	Lynn	417 14th Ave. SE (612) 331-1231
B18	Jerry Raskins Needle Doctor	Jerry	417 14th Ave. SE (612) 378-0543
B19	Bon Appetit	Samir	421 14th Ave. SE (612) 378-1513
B20	Dinkytown Tub	Tim	423 14th Ave. SE (612) 378-0299
B21	Podium Music	Paul	425 14th Ave. SE (612) 331-8893
B22	The Book House	Kristin	429 14th Ave. SE (612) 331-1430
B23	House of Hanson	Laurel	433 14th Ave. SE (612) 331-9908
C1	Burger King	Jean	416 14th Ave. SE (612) 331-1408
C2	CD Exchange	Bill	412 14th Ave. SE (612) 623-8299
C3	BW-3 Bar and Grill	Jeff	410 14th Ave. SE (612) 331-2999
C4	Paris Little Hair House	Paris	414 14th Ave. SE (612) 378-0439
C5	Vescio's Restaurant	Frank	406 14th Ave. SE (612) 378-1747
C6	Dave's Dinkytown Hairstylists LTD	Dave	404 14th Ave. SE (612) 331-5533
C7	Gold Country Apparel	Scott	400 14th Ave. SE (612) 379-2940

Map Code	Business	Contact Name	Address and Phone
C8	Alpha Print	Ali	1407 4th St. SE (612) 379-8535
C9	Campus Cards	Karen	1411 4th St. SE (612) 379-1040
C10	SCCU	Nancy	1413 4th St. SE (612) 291-3700
C11	Nelson's Office Supply	John	1417 4th St. SE (612) 331-5969
C12	McDonalds	John	407 15th Ave. SE (612) 331-6590
C13	Dinkytown Wines and Spirits	Irv	1412 5th St. SE (612) 379-0299
C14	Subway	Cindy	1412 5th St. SE (612) 331-6716
C15	Dinkytown Video	Mickey	1412 5th St. SE (612) 379-0420
D1	Annie's Parlor	T.J.	315 14th Ave. SE (612) 379-0744
D2	Ragstock	Micheal	315 14th Ave. SE (612) 331-6064
D3	Campus Frame Shop	Gerald	315 14th Ave. SE (612) 331-5760
D4	Brueggers Bagels	Tim	319 14th Ave. SE (612) 623-9522
D5	Atomic Tattoo	Sean	321 14th Ave. SE
D6	University Computer Center	Brent	321 14th Ave. SE (612) 623-9493
D7	Kinkos Copies	Dave	325 14th Ave. SE (612) 331-3080
D8	Insignia		327 14th Ave. SE (612) 331-2919



Map Code	Business	Contact Name	Address and Phone
D9	Maya Market	Donna and Tom	327 14th Ave. SE (612) 331-6027
D10	Tom the Tailor	Tom	327 14th Ave. SE (612) 379-7686
D11	Campus Drug	Bud	329 14th Ave. SE (612) 331-2955
D12	Aid to SE Asia	Steve	1316 4th St. SE (612) 378-9491
D13	Dinkydale Deli	Maria	1316 4th St. (612) 331-5166
D14	Dinkytown Antiquarian Books	Larry	1316 4th St. SE (612) 378-1286
D15	Dinkytown Family Chiropractic		1316 4th St. SE (612) 379-1808
D16	Fast Eddie's Shoe Repair	Jim	1316 4th St. SE (612) 623-4464
D17	James Hunt Designs	James	1316 4th St. SE (612) 623-1123
D18	Kismit Unknown	Gurmeed	1316 4th St. SE (612) 379-1961
D19	Magus Books and Herbs	Roger	1316 4th St. SE (612) 379-7669
D20	Shuang Cheng Restaurant	Daniel	1316 4th St. SE (612) 378-0208
D21	Hair by Stewarts	Kim	1312 4th St. SE (612) 331-1218
D22	Mauer's Photography	John	1308 4th St. SE (612) 331-8211
D23	Dinkytown Optical	Larry	1304 4th St. SE (612) 331-7100
D24	Dinkytown Bike and Skate	Will	1306 4th St. SE (612) 623-0990

Map Code	Business	Contact Name	Address and Phone
D25	Autographics Copies	Skott	1300 4th St. SE (612) 331-7200
D26	Blue Serge Tailors	Mary	1302 4th St. SE (612) 623-7927
D27	The Hair Shaft	Al	1302 1/2 4th St. SE (612) 331-3260
D28	Milos on Fourth	Milo	1312 1/2 4th St. SE (612) 379-2852
D29	Pizza Hut	Tom	1301 University Ave. SE (612) 623-9210
E1	Purple Onion Cafe	Pat	326 14th Ave. SE (612) 378-7763
E2	Dinkytown News	Indra	320 14th Ave. SE (612) 331-7741
E3	Cumming's Used Books	Jim	318 14th Ave. SE
F1	Starbucks Coffee	Ryan	1500 4th St. SE (612) 379-0913
F2	Erberts and Gerberts	Bob	1500 4th St. SE (612) 623-9485
F3	\$1 Rose	John	316 15th Ave. SE
F4	Twin City Federal	Kathy	1405 4th St. SE (612) 379-8597
F5	Big 10 Restaurant	Saeed	1501 University Ave. SE (612) 331-3687
F6	Council Travel Service	Karen	1501 University Ave. SE (612) 379-2323
F7	Espresso 22	Gibbs	1501 University Ave. SE (612) 378-9555
F8	Hannaville Hair Co.	Dan	1501 University Ave. SE (612) 623-4302

Map Code	Business	Contact Name	Address and Phone
F9	Hong Kong Express	Cindy	1501 University Ave. SE (612) 623-9380
F10	Paradigm Course Resource (copy center)	Gary	1501 University Ave. SE (612) 379-4590
F11	Slice of New York Restaurant		1501 University Ave. SE (612) 623-4288
F12	Student Book Store	Mark	1501 University Ave. SE (612) 378-0457
F13	Taco Bell	Jamie	1501 University Ave. SE (612) 559-7338
F14	UPS Information Center	Steve	1501 University Ave. SE (612) 378-0525
F15	US Army Recruiting Station	Jeffery	1501 University Ave. SE (612) 623-3188
F16	Western Development	Steve	1501 University Ave. SE (612) 623-0266

## Businesses Surveyed for the Dinkytown Recycling Questionnaire and Map Codes

Business	Contact Name	Address and Phone	Map Code
Annie's Parlor	T.J.	315 14th Ave. SE (612) 379-0744	D1
Autographics Copies	Skott	1300 4th St. SE (612) 331-7200	D25
Big Ten Restaurant	Saeed	1501 University Ave. SE (612) 331-3687	F5
Bon Appetit	Samir	421 14th Ave. SE (612) 378-1513	B19
The Book House	Kristin	429 14th Ave. SE (612) 331-1430	B22
Brueggers Bagels	Tim	319 14th Ave. SE (612) 623-9522	D4
Burger King	Jean	418 14th Ave. SE (612) 331-1408	C1
BW-3 Bar and Grill	Jeff	412 14th Ave. SE (612) 331-2999	C3
Campus Drug	Bud	329 14th Ave. SE (612) 331-2955	D11
Chateau Cooperative	Gary	425 13th Ave. SE (612) 425 13th Ave. SE	(no code-- not on map)
Council Travel	Karen	1501 University Ave. SE (612) 379-2323	F6
Cumming's Used Books	Jim	318 14th Ave. SE	E3
Dinkydale Deli	Maria	1316 4th St. SE (612) 331-5166	D13
Dinkytown News	Indra	320 14th Ave. SE (612) 331-7741	E2

<b>Business</b>	<b>Contact Name</b>	<b>Address and Phone</b>	<b>Map Code</b>
Dinkytown Video	Mickey	1416 5th Ave. SE (612) 379-0420	C15
Dinkytown Wines and Spirits	Irv	142 5th St. SE (612) 379-0299	C13
Erberts and Gerberts	Bob	1500 4th St. SE (612) 623-9485	F2
Espresso Royale Caffè	Dan	411 14th Ave. SE (612) 623-8127	B15
Espresso 22	Gibbs	1501 University Ave. SE (612) 378-9555	F7
Fast Eddie's Shoe Repair	Jim	1316 4th St. SE (612) 623-4464	D16
First Bank	Sherry	1315 4th St. SE (612) 379-9498	B6
Fowl Play Bar	Mike	1301 4th St. SE (612) 623-3535	B3
Gold Country Apparel	Scott	400 14th Ave. SE (612) 379-2940	C7
Hair by Stewarts	Kim	1312 4th St. SE (612) 331-1218	D21
Hong Kong Express	Cindy	1501 University Ave. SE (612) 623-9380	F9
House of Hanson	Laurel	433 14th Ave. SE (612) 331-9908	B23
International Style and Tan	Tom	1323 4th St. SE (612) 623-9319	B9
Kinkos Copies	Dave	325 14th Ave. SE (612) 331-3080	D7
Kismit Unkown	Gurmeed	1316 4th St. SE (612) 379-1961	D18
Mauer's Photography	John	1308 4th St. SE (612) 331-8211	D22

<b>Business</b>	<b>Contact Name</b>	<b>Address and Phone</b>	<b>Map Code</b>
McDonalds	John	407 15th Ave. SE (612) 331-6590	C12
Magus Books and Herbs	Roger	1316 4th St. SE (612) 379-7669	D19
National Camera Exchange	Mike	1327 4th St. SE (612) 379-7208	B11
Nelson's Office Supply	John	1417 4th St. SE (612) 331-5969	C11
Paradigm Course Resource (copy center)	Gary	1501 University Ave. SE (612) 379-4590	F10
Pizza Hut	Tom	1301 University Ave. SE	D29
Podium Music	Paul	425 14th Ave. SE (612) 331-8893	B21
Purple Onion Cafe	Pat	326 14th Ave. SE (612) 378-7763	E1
Ragstock	Micheal	315 14th Ave. SE (612) 331-6064	D2
Rocky Rococo Restaurant	Pat	407 14th Ave. SE (612) 378-1513	B13
Shuang Cheng Restaurant	Daniel	1320 4th St. SE (612) 378-0208	D20
Simms Hardware	Lynn	417 14th Ave. SE (612) 331-1231	B17
Song Thanh Restaurant	Dat	418 13th Ave. SE (612) 379-3121	B2
Starbucks Coffee	Ryan	1500 4th St. SE (612) 379-0913	F1
Student Book Store	Mark	1501 University Ave. SE (612) 378-0457	F12
Subway	Cindy	1412 5th St. SE (612) 331-6716	C14

<b>Business</b>	<b>Contact Name</b>	<b>Address and Phone</b>	<b>Map Code</b>
Taco Bell	Jamie	1501 University Ave. SE (612) 559-7338	F13
Tom the Tailor	Tom	327 14th Ave. SE (612) 379-7686	D10
University Technology Center	Barry	1313 5th St. SE (612) 379-3800	A1
Vescio's Restaurant	Frank	406 14th Ave. SE (612) 378-1747	C5
Western Development	Steve	1501 University Ave. SE (612) 623-0266	F16

## Appendix C: Blank Surveys

Andy Williams, Intern  
Marcy-Holmes NRP  
Room 138 UTec Center  
1313 SE Fifth Street  
Minneapolis, MN 55414

April 23, 1997

Dear Sirs:

Marcy-Holmes Neighborhood Revitalization Program is currently in the process of creating a pilot program design for cooperative commercial recycling. As a part of this process, I am surveying all business associations in St. Paul and Minneapolis. Please answer the following three questions:

1) Does your business district have a cooperative recycling program?

\_\_\_\_\_ Yes                      \_\_\_\_\_ No

2) Are you in the planning stages of designing a cooperative recycling program?

\_\_\_\_\_ Yes                      \_\_\_\_\_ No

3) Would you be willing to send more information regarding your recycling efforts?

\_\_\_\_\_ Yes                      \_\_\_\_\_ No

Please use the enclosed stamped envelope for your responses and/or information regarding your recycling efforts. Thank you so much for your time.

Sincerely,

Andy Williams, Intern  
Marcy-Holmes NRP

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



Cooperative Recycling Questionnaire:

Dinkytown Business District

Date: \_\_\_\_\_

Business Name: \_\_\_\_\_

Contact: \_\_\_\_\_

Address: \_\_\_\_\_

Position: \_\_\_\_\_

Type of Business: \_\_\_\_\_

Phone: \_\_\_\_\_

1. Please provide a rough estimate of the different types of materials you throw away and recycle.

Material	% , volume, or weight disposed	% , volume, or weight recycled
Glass		
Food Waste		
Metals (alum. and tin)		
Office Paper		
Newspaper		
Cardboard		
Plastic		
Other		

2. Who is your current trash hauler? \_\_\_\_\_

3. What is your monthly cost for waste disposal? \$ \_\_\_\_\_ included in rent \_\_\_\_\_

4. What is the size of your dumpster, and how often is it emptied? 1. \_\_\_\_\_ 2. \_\_\_\_\_

5. Is the dumpster shared or is it just for your use? \_\_\_ shared \_\_\_ private use

5a. If shared, how many businesses?

6. How frequently would pick-up of recyclables need to be for your business?

\_\_\_ Monthly      \_\_\_ Twice a month      \_\_\_ Weekly      \_\_\_ Other

7. What are your primary difficulties with recycling?

\_\_\_ Do not know if recycling is economical

\_\_\_ Lack of time to maintain program

(over please)

- Lack of employee participation
  - Lack of storage space
  - Contamination of materials
  - Recycling more expensive than disposal
  - Lack of information about who will recycle the material, and requirements for pick-up
- Other (describe) \_\_\_\_\_

8. Please tell me whether your business participates in the following waste prevention practices:

<u>Activity</u>	<u>Always</u>	<u>Sometimes</u>	<u>Never</u>	<u>N/A</u>
-Reusing and encouraging refillable/reusable food and beverage containers?				
-Printing or copying on both side of paper?				
-Reducing junk mail?				
-Reusing packaging material? (peanuts, etc.)				
-Reusing file folders?				
-Donating old furniture or other worn items?				
-Reducing styrofoam packaging?				
-Currently donating food to food reuse group? (e.g. 2nd Harvest, hog farms, etc.)				
-Other?				

9. Are you willing to pay for recycling service?  Yes  No  Unsure

10. If recycling meant transporting your own materials to the nearest drop-off center, would you do it?

Yes  No

11. Are you interested in participating in a recycling pilot project sponsored by the Dinkytown Business Association?  Yes  No  Unsure

12. The DBA and Marcy-Holmes NRP plans to organize a dumpster dive in the next month. Can I survey your dumpster (only Marcy-Holmes and U of M will conduct the dive)?  Yes  No

13. What day (it is best to come just before trash pick-up)? \_\_\_\_\_

14. If you were to serve on a cooperative recycling committee created to assure the success and continuation of cooperative recycling in Dinkytown, how often would you prefer to meet (meetings would be short)?

Quarterly  Every two months  Monthly  Twice a month

15. Are there any concerns or questions you have regarding this questionnaire and/or cooperative recycling? \_\_\_\_\_

Follow-up Questions: Cooperative Recycling

Dinkytown Business District

Date: \_\_\_\_\_

Business Name: \_\_\_\_\_

Contact: \_\_\_\_\_

Address: \_\_\_\_\_

Position: \_\_\_\_\_

Type of Business: \_\_\_\_\_

Phone: \_\_\_\_\_

1. When carrying waste and/or recyclables from your building to the dumpster, how far are you willing to walk for disposal?

Two Dinkytown blocks

One Dinkytown block

Half a block

Just outside your building (e.g. the dumpster is right next to the building)

2. How far to walk is too far?

\_\_\_\_\_

3. Would you walk across the street to dispose of your waste or recycle?

Yes

No





**Product**

**Weight or volume percent present**

Glass

- clear
- brown
- green
- blue
- drinking and window glass

\_\_\_\_\_

Plastics

- #1's - PETE (polyethylene terephthalate)  
bottles
- #2's - HDPE (high-density polyethylene)  
unpigmented bottles  
colored bottles
- #3's - V (polyvinyl chloride)
- #4's - LDPE (low-density polyethylene)  
film
- #5's - PP (polypropylene)
- #6's - PS (polystyrene)  
foam  
rigid
- #7's - Other or unknown

\_\_\_\_\_

\_\_\_\_\_

Food waste

Yard waste

Other Products

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Appendix D: Business Association Questionnaire Results

From early March to late April, surveys were mailed to Minneapolis and St. Paul business associations. Names and addresses were obtained from Dennis Rock of the Minneapolis Community Development Agency (MCDA), the Midway Chamber of Commerce in St. Paul, and from St. Paul's Department of Planning and Economic Development. What follows is a list of those businesses who responded to the survey and their answers. These three questions were asked:

- 1) Does your business district have a cooperative recycling program? Yes/No
- 2) Are you in the planning stages of designing a cooperative recycling program? Yes/No
- 3) Would you be willing to send more information regarding your recycling efforts? Yes/No

Table 1: Minneapolis Associations				
Association Contact and Address	Question 1	Question 2	Question 3	Additional Information
Rand Larson, Chairperson Johnson Street Business Association 2847 Johnson St. NE Minneapolis, MN 55418	Yes	No	No	
Richard Rose, Secretary/Treas. Southeast Homebased Business Association PO Box 13244 Minneapolis, MN 55414	Yes	No	Yes	Located throughout the Southeast. They use the Minneapolis recycling system.
Cindy Fitzpatrick, Executive Director Uptown Business Association 1422 Lake St W. #202 Minneapolis, MN 55408-2616	Yes	No	Yes	Information on the history of this program has been obtained.
Karen Knudsen, Executive Director 50th & France Business & Professional Association PO Box 24122 Edina, MN 55424	Yes (on the Edina Side only)	No	Yes	Mrs. Knudsen sent technical information on their recycling program in Edina.

Association Contact and Address	Question 1	Question 2	Question 3	Additional Information
Cheryl L. Bolden Bloomington-Cedar Lake Commercial Club 1522 E. Lake St. Minneapolis, MN 55407-1720	No	No	Yes	
David Luger, Chairperson Linden Hills Business Association 4374 Dart Ave. S. St. Louis Park, MN 55424	No	No		Mr. Luger expressed interest in our efforts.
Joe Fleischman, Secretary Plymouth Ave. Business Association %HIRED 1200 Plymouth Ave. N Minneapolis, MN 55411-4085	No	No	Yes	
Robert Rutscher, President North East Business Association 1618 Central Ave. NE Minneapolis, MN 55418	No	No	No	
John Sulzbach, Co-Chairperson Longfellow Business Association %CLG Enterprises 3838 Dight Ave. Minneapolis, MN 55406	No	No	Yes	Longfellow's NRP Plan lists a cooperative recycling program as a goal. Nine haulers have expressed interest in cooperating.
Ed Janseen, President Kim Havey, Coordinator Northeast Economic Development Council 2308 Central Ave. NE Minneapolis, MN 55418	No	No	N/A	
Tim Jordan, Acting President 4th & Lake Street Business Association	No	No	Yes	
Gwen Pfeifer, Community Coordinator 5144 13th Ave. S. Minneapolis, MN 55417				Must contact Mike Mauch, President of the newly formed Diamond Lake Bus. Assoc., for information (823-4358).



Association Contact and Address	Question 1	Question 2	Question 3	Additional Information
Jean Coleman, Project Manager Franklin Ave. Business Association 1009 E. Franklin Ave. Minneapolis, MN 55404	No	No	N/A	
Anne Arthur, Executive Director Lake Street Council 2800 Lake Street E Minneapolis, MN 55406-1930	No	No	Yes	Mrs. Arthur expressed interest in our efforts.
Shana M. Ford, President South Chicago Ave. Business Alliance %Norwest Bank 4712 Chicago Ave. Minneapolis, MN 55407	No	No	Yes	
Nicholas J. Puzak 59 Barton SE Minneapolis, MN 55414	No	No	Yes	
Tom Berthiaume, Chairperson Nicollet Ave. Business Association %Parallel Productions 2010 1st Ave. S Minneapolis, MN 55404	No	No	Yes	
Joanne Kaufman, Executive Director Warehouse Business Association 322 1st Ave. N Lolev Minneapolis, MN 55401	No	No	N/A	

(next page please)

**Table 2: St. Paul Associations**

Association Contact and Address	Question 1	Question 2	Question 3	Additional Information
<p>Mike Gombold Mounds Park Business Association 60 Bates St. Paul, MN 55106</p>	Yes	No	No	<p>According to Mr. Gombold: "The businesses in the Mounds Park Association have only paper and cardboard waste to recycle. The commercial refuse services we use supply separate dumpsters for paper products and cardboard."</p>
<p>Andrew Nath White Bear Ave. Business Association P.O. Box 9328 St. Paul, MN 55109-0328</p>	No	No	N/A	<p>Mr. Nath expressed an interest in learning more about cooperative recycling.</p>
<p>Richard Malloy Payne Arcade Business Association c/o ESND 900 Payne Avenue St. Paul, MN 55101</p>	No	No	N/A	<p>Mr. Malloy said a cooperative recycling program would be good for his business district. However, he did not know if he could implement it.</p>
<p>Anne Briseno R.E.D.A. 176 Concord St. St. Paul, MN 55107</p>	No	No	No	<p>Their district council has cooperative recycling, says Ms. Briseno.</p>
<p>Rick Aguilar Smith-Dodd Business Association c/o The Squire 602 Smith Ave. S. St. Paul, MN 55107</p>	No	No	N/A	<p>Mr. Aguilar expressed interest in cooperative recycling. He also said he needed more information before starting such a program.</p>
<p>Char Mason Grand Avenue Business Association 1043 Grand Avenue, #135 St. Paul, MN 55105</p>	No	No	N/A	
<p>Ellen Waters Midway Chamber of Commerce Executive Director 1600 University Avenue, Suite 4 St. Paul, MN 55104</p>	No	No	No	<p>Ms. Waters recommended that we contact University United at 647-6711. She says they have started a waste program.</p>

## Appendix E: Dinkytown Questionnaire Results/Explanations

From late February to mid-March, a sample of Dinkytown business owners were either interviewed in person by the recycling pilot program intern or asked to fill-out the questionnaire and return them to the intern. Thirty-four personal interviews were conducted and seventeen questionnaires were handed out, completed, and returned. Thus, fifty-one businesses out of ninety-six total were surveyed (see Appendix B for a list of these businesses). What follows is a summary of the results for each individual question (see Appendix C for a copy of the survey).

Question 1: Please provide a rough estimate of the different types of materials you throw away and recycle.

Business Owners were asked to provide the percentages of each material and whether or not they recycled those materials. Five categories of businesses have a significant sample: small restaurants (e.g. Taco Bell in the Dinkydome and Bon Appetite), large restaurants/food stores (e.g. BW3 Bar and Grill and Fowl Play), copy centers, book stores (used and new), and coffee shops. All five categories have a total of thirty-one businesses. Each category includes average figures. The largest figures are listed in bold.

Percentages Disposed:

Material	Small Restaurants (6)	Large Restaurants/Food Stores (9)	Copy Centers (2)	Book Stores (4)	Coffee Shops (4)
	<b>Disposed</b>	<b>Disposed</b>	<b>Disposed</b>	<b>Disposed</b>	<b>Disposed</b>
Glass	6%	5%	0%	7%	5%
Food Waste	17%	<b>25%</b>	0%	5%	<b>26%</b>
Metals (alum. and tin)	9%	2%	0%	0%	5%
Office Paper	4%	4%	<b>52%</b>	<b>17%</b>	9%
Newspaper	6%	2%	0%	3%	4%
Cardboard	<b>25%</b>	15%	0%	0%	6%
Plastic	6%	4%	0%	5%	3%

**Other:**

Packing Paper.....Student Book Store.....15%

Paper Cups, Napkins, Fast Food Containers, Bagged Lunches...Espresso Royale Coffee...50%

Coffee Grounds, Milk Cartons, Napkins.....Purple Onion Coffee.....52%

Food Waste from other area restaurants (brought in by customers).....Purple Onion Coffee.....25%

Paper Food Containers, Napkins, Straw Wrappers.....Rocky Rococo's.....50%

Napkins, Paper Portion Cups, Logo Paper.....BW-3 Bar and Grill.....3%

Styrofoam Containers (bowls, cups).....Dinkydale Deli.....one 2 yd. dumpster per wk.

Wrappers, Burger Boxes, Napkins, Straws, Cups, Fry boxes.....Annie's Parlor.....50%

Average Figure for Wrappers, Napkins, etc. in Large Restaurant Category.....38%

Percentages Recycled:

Material	Small Restaurants (6)	Large Restaurants/Food Stores (9)	Copy Centers (2)	Book Stores (4)	Coffee Shops (4)
	Recycl	Recycl	Recycl	Recycl	Recycl
Glass	7%	7%	0%	3%	5%
Food Waste	0%	15% (Song Thanh said 25%--outlier) <sup>1</sup>	0%	0%	0%
Metals (alum. and tin)	15%	3%	0%	5%	1%
Office Paper	0%	5%	90%	3%	5%
Newspaper	0%	15%-- (only House of Hanson/outlier)	0%	11%	7%

<sup>1</sup>In the case of an outlier, one answer out of 51 is not significant for an accurate conclusion. Or one answer is drastically greater or smaller than the others, and, thus, results are skewed.

Material	Small Restaurants (6)	Large Restaurants/ Food Sores (9)	Copy Centers (2)	Book Stores (4)	Coffee Shops (4)
Cardboard	27%	35% only Song Thanh/outlier	3%	51%	14%
Plastic	10%- only Subway	5%	0%	0%	3%
Other:					
Drop-Off Site for Used Books (money produced from resell is given to charity).....Book House					
Cooking Oil Recycled.....Annie'sParlor					

Conclusions or Key Findings

For the businesses in these five categories, office paper, food waste, and cardboard appear to account for the majority of the Dinkytown waste stream as a whole. According to business owner perceptions, these three materials are disposed of in significant quantities to warrant further attention. In addition, the "other" category shows the importance of reducing "dining waste" such as straw wrappers, napkins, and paper food containers. A pilot program for Dinkytown recycling should emphasize the importance of reducing and recycling these materials.

Question 2: Who is your current trash hauler?

(Note: Percentages are based on individual responses regardless of shared contracts between Dinkytown businesses.)

Trash Hauler	Percentage of Businesses Using Hauler	
Aagard	25%	(13 out of 51 businesses)
BFI	24%	(12 businesses)
Boone Trucking	6%	(3 businesses)
Twin Cities Sanitation	2%	(1 business)
Vasko	2%	(1 business)
Waste Management	12%	(6 businesses)
Unanswered/Other	14%	(7 businesses)
Unsure	15%	(8 businesses)

Conclusions or Key Findings

During the bidding process for haulers, cooperative recycling implementors will need to consider the waste hauling companies which Dinkytown businesses use. A new program may have greater success at the start if the majority of Dinkytown businesses do not have to switch haulers. Some businesses may need to wait until old contracts have ended before they can join the cooperative program.

Question 3: What is your monthly cost for waste disposal?

Monthly cost for waste disposal is best broken into type and size of business and shown as a range and an average. The same five categories in Question 1 are used for this question

Type of Business	Range of Monthly Costs (including recycling service if applicable)	Average Monthly Costs (including recycling service if applicable)	Hauling Costs Included Rent	Unsure/ Other/No Response
Small Restaurants	\$60 to \$230/month	\$69/month (3 businesses)	2 businesses	2 businesses
Large Restaurants/Food Stores	\$189 to \$650/month	\$329/month (9 businesses)		3 businesses
Copy Centers	\$25 to \$90/month	\$57.50/month (2 businesses)		1 business
Book Stores	\$25/month	\$25/month (1 business)	1 business	2 businesses
Coffee Shops	\$60 to \$200/month	\$153/month (3 businesses)		1 business

Conclusions or Key Findings

A recycling program should focus on reducing unnecessarily high costs. The table for question 3 shows that high costs are associated with large restaurants in particular. The reduction and recycling of cardboard and food waste may help reduce hauling costs by reducing total waste weight.

Question 4, 5, and 5a: What is the size of your dumpster, and how often is it emptied? Is it shared or for individual use? If shared, how many businesses?

For these questions, it is best to list all businesses who know this information. Some who responded did not have dumpsters at their location. They are excluded.

Name of Business and Map Code	Size and # of Waste Dumpsters	How often emptied?	Size and # of Cardboard Dumpsters	How often emptied?	Size and # of smaller recycling bins	How often emptied?	Shared or individ. use?
Annie's Parlor (D1)	One 1.5 yd	4 time/wk	One 2-3 yd. for commingled cardboard, cans, bottles	1 time/wk	One 90 gal. dumpster for glass	Once/month	Indiv.
Auto-graphics (D25)	One 2 yd	1 time/wk	none	n/a	none	n/a	share w/ 3
Brugger's Bagels (D4)	One 3 yd	3 time/wk	One 2 yd.	1 time/wk	One 50 gal. for glass	Once/wk	Indiv.
Bon Appetit (B19)	One 2 yd	1 time/wk	none	n/a	none	n/a	Indiv.
Burger King (C1)	One 6 yd	Unanswered	One/no answer to size	Unanswered	none	n/a	Indiv.
BW-3 Grill and Pub (C3)	One 6 yd	5 time/wk	One mid-size	1 time/wk	Three 30 gal. bins for cans, newspaper, glass	1 time/wk	Share w/ 2
Campus Drug (D11)	One 3 yd	3 time/wk	One 3 yd.	2 time/wk	none	n/a	Share with bus. upstairs
Cheatu Cooperative (not on map)	Two 2 yd	3 time/wk	Do recycle this: didn't get info.		Do recycle: didn't get info		Indiv.
Dinky-dale Deli (D13)	One 2 yd	3 time/wk	none	n/a	none	n/a	share w/ 7

Dinkytw Wine/ Spirits (C13)	One 4 yd	Unanswered	Cardboard and Alum: two 2 yd	Unansw ered	Two 90 gal. for plastic, glass, metal	Unans wered	share w/ 2
Erberts and Gerberts (F2)	One/un- sure of size	2 time/wk	One/unsure of size	2 time/wk	none	n/a	share w/ Starbucks and Dinkydo me
Espresso Royal (B15)	One 6 yd	1 time/wk	One 6 yd. Commingle d for cardboard, plastic,metal , office paper	1 time/wk	One for glass/no size given	2 time /mo.	share w/ Camdi, Sims, Bon App./3
Fast Eddie's Shoe Repair (D16)	Two 2 yd	3 time/wk	none	n/a	none	n/a	share w/ 9
First Bank (B6)	One 2 yd	1 time/wk excl. paper	none	n/a	none	n/a	indv.
Fowl Play (B3)	One 3 yd	2 time/wk	One 3 yd	1 time/wk	Twelve 55 gal drums- glass	Unans wered	indv.
Hair by Stewarts (D21)	One 2 yd	1 time/wk	none	n/a	none	n/a	indv.
House of Hanson (B23)	One 2 yd	2 time/wk	Newsprnt, crdbrd,metal are recycled				
Internatio nal Style and Tan (B9)	One/unsu re of size	1 time/wk	One/unsure of size	2 time/wk	none	n/a	share w/ 4 or 5 (Esp.Roy. runs it)
Magus Books and Herbs (D19)	One 2 yd	3 time/wk	recycle metal and cardboard/no info. on size	n/a	none	n/a	share w/ 7
McDon- ald's (C12)	One 3 yd	1 time/wk	One 2 yd.	1 time/wk	none	n/a	indv.



Mauer's Photography (D22)	One 2 yd	1 time/wk	Uses commingled recycling for glass, metal, office paper, newsprnt, plastic				
National Camera Exchange (B11)	One 2 yd	1 time/wk	Glass, metal, office paper, newsprnt, crd board moved to another store				
Pizza Hut (D29)	Three 1.5 yd	2 time/wk	Two 2 yd	2 time/wk	Two 90 cu. ft. for cans and plastic	2 times/wk	indv.
Purple Onion (E1)	One 3 yd	1 time/wk	none	n/a	none	n/a	indv.
Ragstock (D2)	One 2 yd	unsure	Cardboard goes to main office	unsure	none	n/a	indv.
Rocky Rococo's (B13)	One 3 yd	2 time/wk	Share cardboard recycl w/ C. Royale	Unanswered	30 gal. bins for commingled glass, plastic, cans	Unanswered	indv.
Shuang Cheng Restaurant (D20)	Three 2 yd	4 time/wk	Recycles cardboard	unanswered	none	n/a	indv.
Starbuck (F1)	One 2 yd	3 time/wk	recl: cardboard, glass, some off. pap. and some plastic	2 time/wk	Special: donates pastries and expired coffee	indv.	
Student Book Store (F12)	One 2 yd	1 time/wk				indv.	
UTEC Center (A1)	One 10 yd	3 time/wk	One 10 yd	2 time/wk	Plastic, glasses, metal also recycled	indv.	

Vescio's (C5)	One 6 yd	5 time/wk	recycl. cardboard /size unanswered	3 time/wk	glass, metal, plastic	shared w/ 2 others	
Western Development/ Dinky-dome (F16)	One 6 yd	5 time/wk	One 6 yd	2 time/wk	90 gal. for glass/also: metals, office paper, newsprint		

Conclusions or Key Findings

Information on the size and number of dumpsters will allow efficient design and implementation of a recycling program. Generally, those who generate the largest amounts of waste have the larger waste containers. These businesses should be the focal point for a cooperative recycling program.

Question 6. How frequently would pick-up of recyclables need to be for your business?

Business owners were asked if they would like recyclables picked up monthly, twice a month, weekly, or at a different time. Below are the results from all fifty-one surveys:

Type of Business	Monthly	Twice a Month	Weekly	Other
Small Restaurants			5	2
Large Restaurants/ Food Stores	1	2	6	3
Copy Centers			2	1
Book Stores	1	1	1	1
Coffee Shops	1		2	1
Other Businesses (e.g. Kismet Unknown, Tom the Tailor, Campus Drug)	5	3	6	7
Percentages of all Businesses	16%	12%	43%	29%

Conclusions and Key Findings

This table shows that pick-up of recyclables will need to occur at least once a week. If large waste generators are included in a new program, then the number of pick-ups per week could increase. Of course, this depends on space availability for larger dumpsters in each zone.

Question 7: What are your primary difficulties with recycling?

Businesses were asked if the following factors hindered their recycling efforts. Next to the factors, percentages of "yes" responses are listed.

<b>Do not know if recycling is economical</b>	3%	(2)
<b>Lack of time to maintain the program</b>	13%	(9)
<b>Lack of employee participation</b>	11%	(8)
<b>Lack of storage space</b>	17%	(12)
<b>Contamination of materials</b>	11%	(8)
<b>Recycling more expensive than disposal</b>	4%	(3)
<b>Lack of information about who will recycle the material, and requirements for pick-up</b>	17%	(12)
<b>Other</b>	24%	(17)

(next page please)

The "Other" Category

Seventeen businesses mention difficulties other than those listed on the survey. Twelve of these businesses cited reasons which were mentioned more than once.

"Other" Category	Number of Businesses
Hazardous for employees to transport glass or florescents to drop-off site	2
Not easily available as an option	2
Lack of knowledge about what can and can't be recycled/lack of knowledge from employees	2
Lack of: building owner, tenant, or customer participation	4
Total percentage of recyclables in waste stream small	2

Conclusions or Key Findings

Three main concerns are apparent: 1) lack of information about who will recycle and requirements for pick-up, 2) lack of storage space, and 3) lack of owner, tenant, customer participation. This report and the work of a recycling implementation committee will hopefully resolve these issues.

Question 8: Does your business participates in the following waste prevention practices?

Activity	Always	Sometimes	Never	N/A
Reusing and encouraging refillable/reusable food and beverage containers?	18% (9)	20% (10)	35% (18)	27% (14)
Printing or copying on both sides of the paper?	22% (11)	27% (13)	6% (3)	45% (22)
Reducing junk mail?	10% (5)	16% (8)	49% (24)	25% (12)
Reusing packaging material? (peanuts, etc.)	27% (13)	18% (9)	18% (9)	36% (18)
Reusing file folders?	60% (30)	4% (2)	6% (3)	30% (15)
Donating old furniture or other worn items?	14% (7)	14% (7)	2% (1)	69% (34)
Reducing styrofoam packaging?	4% (2)	10% (5)	12% (6)	73% (36)
Currently donating food to food reuse group?	4% (2)	2% (1)	40% (19)	53% (25)
Other?	5	1		

Question 8 Separated Out by Business Category

Activity	Small Restaurants (7)	Large Restaurants/ Food Stores (12)	Copy Centers (3)	Book Stores (4)	Coffee Shops (4)
Reusing and encouraging refillable/reusable food and beverage containers?	Always.....2 Sometimes..3 Never.....1 N/A.....1	Always.....3 Sometimes..2 Never.....7 N/A	Always Sometimes Never.....1 N/A.....2	Always Sometimes..1 Never.....3 N/A	Always.....3 Sometimes Never.....1 N/A
Printing or copying on both sides of the paper?	Always Sometimes..3 Never N/A.....4	Always.....2 Sometimes Never.....1 N/A.....9	Always.....3 Sometimes Never N/A	Always.....1 Sometimes..2 Never N/A.....1	Always.....1 Sometimes..1 Never N/A.....2
Reducing junk mail?	Always Sometimes..1 Never.....4 N/A.....2	Always.....1 Sometimes..3 Never.....7 N/A.....1	Always Sometimes Never.....3 N/A	Always Sometimes Never.....3 N/A.....1	Always Sometimes..1 Never.....2 N/A.....1
Reusing packaging material? (peanuts, etc.)	Always.....1 Sometimes..1 Never.....3 N/A.....2	Always Sometimes Never.....5 N/A.....7	Always.....2 Sometimes..1 Never N/A	Always.....3 Sometimes..1 Never N/A	Always.....1 Sometimes..1 Never N/A.....2
Reusing file folders?	Always.....4 Sometimes..1 Never.....1 N/A.....1	Always.....7 Sometimes..1 Never.....2 N/A.....3	Always.....3 Sometimes Never N/A	Always.....2 Sometimes Never N/A.....2	Always.....2 Sometimes Never N/A.....2
Donating old furniture or other worn items?	Always.....1 Sometimes..1 Never N/A.....5	Always.....2 Sometimes..3 Never.....2 N/A.....5	Always.....1 Sometimes..2 Never N/A	Always.....1 Sometimes Never N/A.....3	Always Sometimes Never N/A.....4
Reducing styrofoam packaging?	Always Sometimes..1 Never.....2 N/A.....4	Always.....1 Sometimes..2 Never.....3 N/A.....6	Always Sometimes Never.....1 N/A.....2	Always Sometimes Never.....1 N/A.....3	Always Sometimes..1 Never N/A.....3
Currently donating food to food reuse group?	Always Sometimes Never.....6 N/A.....1	Always.....1 Sometimes Never.....9 N/A.....2	Always Sometimes Never N/A.....3	Always Sometimes Never N/A.....4	Always Sometimes..1 Never.....3 N/A
Other?	Always Sometimes Never N/A	Always Sometimes Never N/A	Always Sometimes Never N/A	Always.....1 Sometimes Never N/A	Always Sometimes Never N/A

Conclusions or Key Findings

Question 8 shows that there is room for improvement with regards to waste prevention practices. For small restaurants, large restaurants, and coffee shops, it would be particularly appropriate to promote food reuse as well as the use of refillable/reusable food and beverage containers. For all categories, reducing junk mail may be a priority.

Question 9: Are you willing to pay for recycling service? Yes/No/Unsure

	Yes	No	Unsure
Willing to pay for recycling service?	57% (29)	10% (5)	33% (17)

Conclusions or Key Findings

Out of 51 businesses, only five said they would definitely not pay for recycling service. 17 were unsure. A cooperative program will need to clearly communicate the cost benefits and convenience of recycling and reuse programs. Thus, those who said they were unsure might reconsider. Never the less, 57% of businesses are willing to pay for service. This percentage is significant.

Question 10: If recycling meant transporting your own materials to the nearest drop-off center, would you do it? Yes/No

	Yes	No
Transport own materials to drop-off center?	35% (18)	65% (33)

Conclusions or Key Findings

The results of question 10 clearly show that cooperative recycling in Dinkytown will need to be convenient. A significant portion (65%) said they would not transport materials to the nearest drop-off center. Drop-off sites need to be a short walk from each business.

Question 11: Are you interested in participating in a recycling pilot project sponsored by the Dinkytown Business Association?

A majority of business owners from the sample would participate in a recycling pilot project.

	Yes	No	Unsure
Interested in participating in a pilot project?	65% (33)	6% (3)	29% (15)

Conclusions or Key Findings

Thirty-three out of fifty-one businesses would participate in a recycling pilot project. Again, the design and implementation of a cooperative program need to be easy to understand, and the cost and convenience factors should be expressed in a clear manner. A clear and simple program will hopefully interest the fifteen businesses who said they were unsure.

Question 12 and 13: The DBA and Marcv-Holmes NRP plans to organize a dumpster dive in the next month. Can I survey your dumpster (only Marcv-Holmes and the DBA will conduct the dive)? What day?

Six waste surveys or "dumpster dives" were conducted in Dinkytown during March and April. See Appendix F for waste survey results.

Question 14: If you were to serve on a cooperative recycling committee created to assure the success and continuation of cooperative recycling in Dinkytown, how often would you prefer to meet (meetings would be short)? Quarterly/Every two months/Monthly/ Twice a month

Most owners requested that the meetings occur on a quarterly basis. Some suggested that these meetings take place either before or after DBA general membership meetings.

	Quarterly	Every two months	Monthly	Twice a month	Did not respond
How often prefer to meet?	47% (24)	16% (8)	25% (13)	2% (1)	10% (5)

Question 15: Are there any concerns or questions you have regarding this questionnaire and/or cooperative recycling?

Many important issues were raised as the result of this last question (issues are not listed in order of importance).

**Issue 1:** Some managers of chain stores will need permission from their central office before they can participate in cooperative recycling (e.g. Hair by Stewarts and Ragstock).

**Issue 2:** Disposal of lamplights and florescents

**Issue 3:** Cooperation of customers to separate recyclables (especially at fast food restaurants).

**Issue 4:** Some reiterated that their participation depended on the cost of the program. Others would participate if they could save money.

**Issue 5:** Others strongly expressed their interest if the program is convenient (e.g. receptacles are easily accessible and the program does not require much added time beyond current responsibilities).

**Issue 6:** The speed at which the program is organized depends on how rapidly some individual business owners can change haulers.

**Issue 7:** For others, space for dumpsters is a major concern. If a cooperative program is created, then which businesses will need to give up space (possibly valuable parking space) for dumpster placement? And of those

businesses which give up space, will they be reimbursed for their contribution?

**Issue 8:** Will smaller businesses, in the end, pay higher rates under this program? Or will the program make adjustments for the amount of waste generated by each individual business?

**Issue 9:** One owner suggest that businesses receive a sticker/decals for their door/window to publicize program participation.

**Issue 10:** The same owner recommended cooperative yard waste pick-up in the spring. Possibly, compost pick-up could occur once or twice during the spring, summer, and fall.

**Issue 11:** The MPIRG program for Dinkytown did not succeed. If the main reason for this failure was due to a lack of dumpsters close to each business, then how do we solve the space and cost issues if more dumpsters are needed?

**Issue 12:** Another owner suggested that recycling be made available for people on the street.

**Issue 13:** Two restaurant owners who researched food reuse as a possibility could not initiate the program because requirements were too strict and time-consuming. For instance, Second Harvest Farms only picked up once a week and required that food waste be kept in a walk-in cooler. The owner did not like the idea of storing food waste with fresh food. Curt Johnson with Second Harvest, however, said his company can pick-up six days a week, and food can be stored outside.

Another issue not brought up by these owners is the level of education and time required for food reuse. Employees must know which materials can and cannot be emptied into the food waste bin. Food separation can be time-consuming.



## Cooperative Recycling Follow-Up Questions/Results

The follow-up questionnaire was designed to shed some light on dumpster placement and zone designation. Business opinions regarding how far they are willing to walk for recycling and disposal are important considerations for infrastructure. On June 3 and 6, sixteen businesses were asked the following three questions:

1. When carrying waste and/or recyclables from your building to the dumpster, how far are you willing to walk for disposal?

Two Dinkytown blocks

One Dinkytown block

Half a block

Just outside your building (e.g. the dumpster is right next to the building)

2. How far to walk is too far?

\_\_\_\_\_

3. would you walk across the street to dispose of your waste or recycle?

Yes

No

The following is a table of respondents and their answers. The opinions of major waste generators such as BW-3, Fowl Play, and Autographics are particularly important. Please see Appendix B for the contact names and addresses which correspond to each business.

Business	Question 1	Question 2	Question 3
Autographics	one block	over a block	yes
Book House	half a block	a block	yes
Bruegger's Bagels	just outside the building	beyond outside the building	no
BW-3 Bar and Grill	half a block	over half a block	no

(next page please)

Business	Question 1	Question 2	Question 3
Campus Drug	two blocks for recyclables and just outside the building for waste	over 2 blocks for recyclables and beyond the building for waste	no--waste yes--recyclables
Dinkydale Deli	half a block	over a block	yes
Dinkytown News	two blocks with car	a block is too far to walk	yes
Dinkytown Wine and Spirits	just outside building	beyond just outside the building	no
Fast Eddie's Shoe Repair	one block	more than one block	no
Fowl Play	just outside the building	any location not on the property (bins must be on property)	no
Nelson's Office Supply	half a block	two blocks	yes
Purple Onion Cafe	half a block	will walk farther if other businesses willing to compromise as well	yes, but bins must have vehicle access
Rocky Rococo's Restaurant	just outside the building	more than half a block	yes for recyclables no for waste
Simms Hardware	half a block	a block	no
Song Tanh Restaurant	just outside the building	beyond the building	no
Vescio's Restaurant	half a block	one block	no

## Appendix F: Dumpster Dive Results/Explanations

In the late winter and spring of 1997, six dumpster dives in Dinkytown were conducted. Estimated amounts of different material types were taken visually.<sup>1</sup> Units in cubic feet were used, and percentages were extracted from cubic feet. A summary of each dumpster dive follows.

### I. Student Book Store

Address: 1501 University Avenue SE  
Phone: 378-0457

Date of Dumpster Dive: March 12, 1997

Personnel Present at Dumpster Dive: Kelly Luck, OEA; Ken Brown, OEA; Leah Cutter, former Executive Director of the DBA; Victor Raymond, Coordinator for Marcy-Holmes NRP; Andy Williams, Recycling Pilot Program Intern

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<sup>1</sup>This method is more accurately referred to as a "waste survey". This report uses the term "dumpster dive" in its place, however. "Dumpster dive" is more colloquial and, thus, more easily understood.

**Table 1: Materials Readily Measurable by Volume**

<b>Material</b>	<b>Estimated % of Waste Stream (From Cu. Ft.)</b>	<b>Est Volume in Cu Ft</b>	<b>Additional Information</b>
Bubble Wrap	9.4%	2 Cu. Ft.	
Blown Foam	3.5%	0.75 Cu. Ft.	Blown foam is used to pad books for transport. The Student Book Store reuses a small percentage of it.
Low Grade Paper	37.6%	8 Cu. Ft.	Low grade paper includes mostly packing paper plus copy paper, stationary, notebook paper, etc
Paperboard	4.7%	1 Cu. Ft.	Paperboard is a light-weight cardboard (e.g. cereal boxes)
Shrink Wrap	4.7%	1 Cu. Ft.	
Newsprint	20.1%	4.25 Cu. Ft.	
Bathroom Tissue and Paper Towels	4.7%	1 Cu. Ft.	
Peanut Packaging	1.2%	0.25 Cu. Ft.	
Miscellaneous	14.1%	3 Cu. Ft.	
<b>Weight and Percent Totals</b>	<b>100%</b>	<b>21.25 Cu. Ft.</b>	

Remaining materials were not easily measurable in cubic feet. The amounts of each material are listed.

Table 2: Materials Not Readily Measurable by Volume	
Material	Amount of Material
Aluminum Cans	3 cans
HDPE Containers	one 1 gallon container
Padded Envelopes	2 envelopes
Glass Bottles	3 bottles
Packing Tape	1 roll
Receipts	less than 10
Disposable Paper Cups	between 10-15 cups
PETE Bottles	8 bottles
Furnace Filter	5 filters
Folders	1 folder
Plastic Bags	negligible amount
Plastic Cups	negligible amount

**Comparisons of Perceived Percentages from the Questionnaire and Percentages from the Dumpster Dive:**

Question 1 on the Cooperative Recycling Questionnaire asked businesses to identify the percentages and types of materials they throw away and recycle (please see Appendix C for a blank questionnaire). For the Student Book Store, the results of the dumpster dive show that there are three categories with the largest percentages: low grade paper (37.6%), newsprint (20.1%), and miscellaneous (14.1%). The questionnaire provides results for comparison. The owner estimated that 2% of his waste was newsprint, a difference of 18.1%. He also estimated that 15% of his waste was packing paper. The majority of the category "Low Grade Paper" on the waste survey includes packing paper.

With regards to the Student Bookstore, a waste reduction program should focus on packing paper and newsprint. First, the store may want to consider reducing and reusing its packing paper and then recycling it. This store already recycles newsprint and cardboard, two large portions of their waste stream. Judging by how much newsprint was in their waste dumpster, they may want to consider closely monitoring how much newsprint is actually recycled. The categories for plastic bottles and tin/aluminum cans are too small for this store to recycle on its own.

Note: The company which distributes candy and soda to the Student Book Store is Fritze-Fresh. Fritze-Fresh utilizes reusable crates for transport of candy and soda. Other businesses in Dinkytown may want to consider supporting businesses which use reusable transport packing or other reusable products.

## II. Purple Onion (Coffee Shop)

Address: 326 14th Ave. SE

Phone: 378-7763

Date of Dumpster Dive: March 12, 1997

Personnel Present at Dumpster Dive: Kelly Luck, OEA; Ken Brown, OEA; Andy Williams, Recycling Pilot Program Intern

Note: Only one half of Purple Onion's dumpster was analyzed. Waste near the bottom was not easily accessible. Thus, weights and percentages are calculated based on these figures.

<b>Table 1: Materials Readily Measurable by Volume</b>			
<b>Material</b>	<b>Estimated % of Waste Stream (From Cu. Ft.)</b>	<b>Est Volume in Cu Ft</b>	<b>Additional Information</b>
Low Grade Paper	5.9%	1.25 Cu. Ft.	
Newsprint	8.3%	1.75 Cu. Ft.	
Paper Towels	15.3%	3.25 Cu. Ft.	
Paper Cups	8.3%	1.75 Cu. Ft.	
Coffee Grounds	10.4%	2.2 Cu. Ft.	
Single Use Milk Cartons	37.6%	8 Cu. Ft.	
Compost	1.2%	.25 Cu. Ft.	
Miscellaneous	13.0%	2.75 Cu. Ft.	
<b>Weight and Percent Totals</b>	<b>100%</b>	<b>21.2 Cu. Ft.</b>	

Table 2 on the next page lists materials not easily measurable in cubic feet.

**Table 2: Materials Not Readily Measurable by Volume**

<b>Material</b>	<b>Amount of Material</b>
Aluminum Cans	3 cans
Clear Glass	7 bottles
Brown Glass	2 bottles
PETE Bottles	3 bottles
HDPE Bottles	5 milk bottles
Books	2 books
Light Bulbs	7 incandescent florescent lamps
Packing Tube	1 tube
Drinking Glass	1 glass
Cardboard Box	1 box

**Comparisons of Perceived Percentages from the Questionnaire and Percentages from the Dumpster Dive:**

Coffee grounds (10.4%), paper towels (15.3%), and single-use milk cartons (37.6%) are the largest categories of the Purple Onion's waste stream. According to the questionnaire results for the Purple Onion, the owner estimated that 52% of his waste stream was coffee grounds, paper towels, and single-use milk cartons combined. The dumpster dive provides proof that the owner's perceptions are accurate. It showed that 63.3% of the waste stream included these three elements combined, a difference of 11.3%.

There are solutions available to reduce these forms of waste. As far as this individual business is concerned, a composting program could divert coffee grounds from the waste stream. In the case of paper towels, both reduction and composting could be utilized. Finally, single-use milk cartons could be replaced with bulk milk containers and reusable glasses. Further research would be necessary to determine the cost-effectiveness of implementing these practices.

**III. Gray's Campus Drug and Upstairs Businesses (Tom the Tailor, Maya Market, Insignia)**

Address: 329 14th Ave. SE  
Phone: 331-2955

Date of Dumpster Dive: March 17, 1997

Personnel Present at Dumpster Dive: Andy Williams, Recycling Pilot Program Intern;  
Jessica Bierbrauer, OEA Intern

Note: Unfortunately, the dumpster (2.5 yd.) was only one-fourth to one-half full on the date of the waste survey. In addition, there appeared to be a large portion of household waste present in this dumpster. Results may be skewed.

<b>Table 1: Materials Readily Measurable by Volume</b>			
<b>Material</b>	<b>Estimated % of Waste Stream (From Cu. Ft.)</b>	<b>Est Volume in Cu Ft</b>	<b>Additional Information</b>
Low Grade Paper	39.4%	6.5 Cu. Ft.	Mainly copy paper, stationary, mail
Receipts	6.1%	1 Cu. Ft.	
Boxboard	24.2%	4 Cu. Ft.	Boxboard consisted mainly of candy boxes
Plastic Bags	6.1%	1 Cu. Ft.	
Plastic Wrappers	12.1%	2 Cu. Ft.	
Bathroom Waste	6.1%	1 Cu. Ft.	
Cigarette Butts	1.5%	0.25 Cu. Ft.	
Lunch Waste	1.5%	0.25 Cu. Ft.	
Cat Litter	3.0%	0.5 Cu. Ft.	
Weight and Percent Totals	100%	16.5 Cu. Ft.	

Table 2 on the next page lists materials not easily measurable in cubic feet.



**Table 2: Materials Not Readily Measurable by Volume**

Material	Amount of Material
Aluminum Cans	3 cans
Clear Glass	2 bottles
Brown Glass	12 bottles
PETE Bottles	8 bottles
HDPE Bottles	2 bottles
PP (Polypropylene) Container	1 yogurt container
Glossy Catalogues	3 catalogues
Grocery Brown Bags	10 bags
Steel Cans	5 cans (all under 1 gal.)
Milk Cartons	2 cartons
Rag	1 rag
Egg Carton	1 carton
Academic Course Guide-glossy on outside, newspaper inside	1 guide
Parmesan Cheese Container	1 container
Cigarette Packs	5 packs
Notepad	1 notepad
Plastic Storage Container Lids	3 lids (9" by 5")
Waxed Paper Cups	5 cups

**Comparisons of Perceived Percentages from the Cessionaire and Percentages from the Dumpster Dives:**

The drugstore owner believed that cardboard (80%) and office paper (10%) comprised the largest portion of his waste stream. Campus Drug already recycles cardboard. Perhaps office paper can be recycled as well. The dumpster dive confirmed that indeed low grade paper (which includes office paper) was a large portion of the Campus Drug waste stream. Low grade paper (39.4%) and boxboard (24.2%) were found in abundance.

Low grade paper and cardboard are prime targets for recycling in this case. Reduction and reuse of paper before recycling is ideal. Boxboard, however, may introduce some dilemmas. There are limited recycling markets for boxboard. Thus, haulers may or may not collect this material.

**IV. Dinkydale Businesses (Dinkydale Deli, Fast Eddie's Shoe Repair, Kismet Unknown, Magus Books and Herbs, Aid to SE Asia, Dinkytown Antiquarian Books, Dinkytown Family Chiropractic, James Hunt Designs)**

Address: 1316 4th St. SE  
 Phone: 529-2222 (Phil Greenburg, owner)

Date of Dumpster Dive: March 18, 1997

Personnel Present at Dumpster Dive: Andy Williams, Recycling Pilot Program Intern; Victor Raymond, Marcy-Holmes NRP Coordinator

Note: A substantial portion of the waste in these dumpsters came from the Dinkydale Deli. There are two dumpsters at this site (both 1.5 yards). The first was half full and the second was one-sixth full at the time of the waste survey.

<b>Table 1: Materials Readily Measurable by Volume</b>			
<b>Material</b>	<b>Estimated % of Waste Stream (From Cu. Ft.)</b>	<b>Est Volume in Cu Ft</b>	<b>Additional Information</b>
Low Grade Paper	14.5%	3 Cu. Ft.	
Newsprint	3.6%	.75 Cu. Ft.	
Styrofoam	43.4%	9 Cu. Ft.	Mainly styrofoam cups and bowls
Food Waste	21.6%	4.5 Cu. Ft.	
Corrugated Cardboard	2.4%	.5 Cu. Ft.	
Packaging Peanuts	14.5%	3 Cu. Ft.	
Weight and Percent Totals	100%	20.75 Cu. Ft.	

Table 2 on the next page lists materials not easily measurable in cubic feet.

<b>Table 2: Materials Not Readily Measurable by Volume</b>	
<b>Material</b>	<b>Amount of Material</b>
Clear Glass	1 single use juice bottle
Brown Glass	5 single use bottles
PETE Bottles	3 bottles
HDPE Bottles	One 1 gal. milk container
Tin Cans	1 can
Flatware	3 pieces
<b>Dr. Pepper Post Mix Fountain Syrup Container (corrugated cardboard on outside, mylar plastic on inside)</b>	1 container
Waxed Paper Cups	2 cups

**Comparisons of Perceived Percentages from the Questionnaire and Percentages from the Dumpster Dive:**

Styrofoam (43.4%), low grade paper (21.6%), and food waste (14.5%) appear to comprise the majority of materials in Dinkydale's waste stream. According to the owner of the Dinkydale Deli, the largest producer of waste among all Dinkydale businesses, they are aware that styrofoam and food waste account for a large portion of the waste stream.

Areas that the deli should concentrate on include reduction of styrofoam, food waste, and low grade paper. Perhaps reusable bowls and cups can be used in place of styrofoam. Changing practices in the kitchen and participating in a food reuse program could reduce food waste. Finally, low grade paper can be recycled or composted rather than disposed.

## V. Fowl Play Bar

Address: 1301 4th St. SE

Phone: 623-3535

Date of Dumpster Dive: April 21, 1997

Personnel Present at Dumpster Dive: Andy Williams, Recycling Pilot Program Intern; Victor Raymond, Marcy-Holmes NRP Coordinator

Note: Fowl Play has one 3 yard dumpster. It was three-fourths full when the dumpster dive was conducted. Of this amount, seventy-five percent was analyzed due to wet or damaged waste at the bottom of the dumpster.

Table 1: Materials Readily Measurable by Volume			
Material	Estimated % of Waste Stream (from Cu. Ft.)	Est Volume in Cu Ft	Additional Information
Popcorn	25.8%	5 Cu. Ft.	
Mixed Food Waste (french fries, coffee grounds. etc.)	36.1%	7 Cu. Ft.	
Wet Paper Towels	5.2%	1 Cu. Ft.	
Miscellaneous Trash	11.6%	2.25 Cu. Ft.	
Newsprint	2.6%	0.5 Cu. Ft.	
Straws	0.6%	0.125 Cu. Ft.	
Wet Paper Waste	14.2%	2.75 Cu. Ft.	
Broken Glass	2.6%	0.5 Cu. Ft.	
Half and Half single use containers (very small)	1.3%	0.25 Cu. Ft.	
Totals	100%	19.38 Cu. Ft.	

Table 2 on the next page lists materials not easily measurable in cubic feet.

**Table 2: Materials Not Readily Measurable by Volume**

Material	Amount of Material
Clear Glass	3 bottles
Brown Glass	11 bottles
Green Glass	1 bottle
Gin Glass Bottles	3 bottles
HDPE Bottles	3 bottles
Tin Cans	3 cans
Bar Glass	5 broken bar glasses
Pizza Box	1 pizza box
Cigarette Packs	2 Packs
Cardboard Box	1 box
Bagel	1 bagel
Plastic Plate	1 plate
Beer Bottle Caps	approx. 20 caps
Plastic Cups	34 cups

**Comparisons of Perceived Percentages from the Questionnaire and Percentages from the Dumpster Dive:**

Mixed food waste (36.1%), popcorn (25.8%), and wet paper waste (14.2%) appear to make up the majority of this waste stream, excluding recyclables. According to Fowl Play's questionnaire, they already recycle glass and cardboard. They may also want to consider joining a food waste reuse program. Efforts which include proper education and signage can reduce paper waste.

Unfortunately, perceived estimations were not received in percentages at the time the owner was questioned. Therefore, it is difficult to compare perceived percentages and actual percentages in this case. This is the fault of the interviewer.

## VI. Autographics Copy Center (plus Dinkytown Bike and Skate and Dinkytown Optical)

Address: 1302 4th St. SE

Phone: 331-7200

Date of Dumpster Dive: April 25, 1997

Personnel Present at Dumpster Dive: Andy Williams, Recycling Pilot Program Intern

Note: Autographics has one 2 yard dumpster. It was full at the time of the dumpster dive. The entire dumpster was analyzed.

Table 1: Materials Readily Measurable by Volume			
Material	Estimated % of Waste Stream (From Cu. Ft.)	Est Volume in Cu Ft	Additional Information
Copy Paper (used and unused)	34.5%	9.5 Cu.. Ft.	
Newsprint	9.2%	2.5 Cu. Ft.	
Copy Paper Wrappers (post-consumer recycled paper material)	14.5%	4 Cu. Ft.	
Mail and Receipts	1.8%	.5 Cu. Ft.	
Miscellaneous Paper	25.5%	7 Cu. Ft.	
Miscellaneous Trash	14.5%	4 Cu. Ft.	
Totals	100%	27.5 Cu. Ft.	

Table 2 lists materials not easily measurable in cubic feet.

**Table 2: Materials Not Readily Measurable by Volume**

<b>Material</b>	<b>Amount of Material</b>
Clear Glass	1 single-use bottle
Brown Glass	1 single-use bottle
PETE Bottles	2 bottles
HDPE Bottles	1 bottle
Aluminum Cans	6 cans
Pizza Box	1 box
Styrofoam Container	3 containers
Glossy Cardboard Box for Bike Helmet	1 box
Small Paperboard Boxes	20 boxes
Small Cardboard Boxes	1 box
Mid-Size Cardboard Boxes (OCC)	8 boxes
Metal Pipe	1 pipe
Bike Tires	3 tires
Bike Tire Inner Tubes	21 inner tubes
Old T-Shirt	1 old T-Shirt
Padded Mailing Envelopes	2 envelopes
Waxed Paper Cups	7 cups
Plastic Wrappers	5 wrappers
Plastic Bags	1 bag
Toner Plastic Containers (25% recycled content)	6 containers
Glossy Magazines	2 magazines
Window Blinds	1 set of blinds
Broken Bike Lock	1 broken bike lock
Tire Spokes	1 set of spokes
Bike Parts	3 small parts
Sock	1 sock
Bike Chains	3 chains

### Comparisons of Perceived Percentages from the Questionnaire and Percentages from the Dumpster Dive:

Copy paper (34.5%), miscellaneous paper (25.5%), and copy paper wrappers (14.5%) make up the majority of this waste stream, excluding recyclables. According to Autographic's questionnaire, 99% of their waste stream is disposed office paper (compared to 60% from the dumpster dive). Office paper recycling could substantially reduce dumpster waste. Specifically, there are some good ideas Autographics may want to explore if they have not already. These involve the three R's.

- Reduce. Employees should meet to brainstorm paper reduction ideas. For instance, Autographics could actively promote double-sided copying.
- Reuse. For Autographics and almost all other businesses for that matter, scratch paper is suitable for memos and draft copies.
- Recycle. Used copy paper can be separated from other waste at the point of disposal and then brought to an outdoor receptacle.
- Purchasing Recycled Products. Autographics, with the assistance of a recycling coordinator and committee, should research companies which sell paper with the greatest percentage of post-consumer recycled content possible. Buying products with recycled content creates a demand for recycled raw materials and helps sustain healthy markets for recyclables. This is also referred to as "closing the loop".

All of these methods should boost positive customer awareness assuming adequate promotion. And reduction of paper waste should create a cost savings.

Cardboard recycling may also reduce some dumpster waste. However, since Autographics is not a major generator of cardboard, the cardboard dumpster may not be located right next to Autographics. In the case of the bike shop, old bike parts may be of use to some other business through a salvage establishment or a materials exchange program. For instance, Freewheel Bicycle in Minneapolis has a public shop which takes parts. The major drawback with this, however, is that someone would need to transport the materials to Freewheel.



## Appendix G: Case Studies

Dinkytown Recycling Pilot Program  
Andy Williams, Intern  
June 1997

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### **The Calhoun Square Recycling Program: Interview with Greg Hibbs, Building Manager April 16, 1997**

#### The Program's History

Gregory Hibbs, building manager for the 60 businesses of Calhoun Square, started what is perhaps the nation's first retail cooperative recycling program in 1989. The impetus for this effort was the result of rapidly rising tipping fees in the late 1980s. Hibbs interviewed various haulers with the intention of reducing waste hauling costs. His current hauler at the time as well as others could not offer him recycling for businesses. Only Aagard seemed interested in working with Calhoun Square.

#### Implementation

At that time, haulers did not provide recycling containers.<sup>1</sup> Thus, Hibbs sought the assistance of Liberty Diversified. They developed prototypes specifically for Calhoun. With the support of individual store managers, a recycling committee was formed. Each member of the committee was assigned three or four stores. For each store, members trained employees.

For every memo written about the program, Calhoun Square used an easily-recognized logo. Thus, anyone who received a memo on Calhoun Square recycling would identify the program with a logo.

#### Problems with the Program During Implementation

Pride and enthusiasm were high during implementation, but certain "bugs" had to be solved before efficient recycling could occur.

- Contamination at restaurants was an issue.
- Old designs of the restaurants did not include built-in facilities for recycling.

#### Materials They Recycle

At the present time, Calhoun Square utilizes co-mingled recycling. They recycle glass, plastic, and aluminum (all co-mingled). Cardboard and newsprint are each recycled separately. Hibbs says there is no cost difference between co-mingled and source-separated recycling. This is surprising. Usually, co-mingled recycling is more expensive.

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<sup>1</sup>Today, this is not a problem. Most haulers provide containers.

### Problems with the Program After Implementation

Once recycling became second nature, it became a management problem for the Calhoun Square office. Hourly employees do not have a vested interest in recycling. Some are unwilling to "go the extra mile" for the program. Below are some of the issues with which Calhoun Square must cope.

- Pride in the program has dissipated. There is minimal pressure on employees to recycle and little supervision of materials in the waste stream, at the individual store level.
- Constant education of employees is required, particularly restaurant employees.

### Cost Savings

Initially, through waste reductions, Calhoun Square saved \$15,000 in 1992. Unfortunately, as hauling fees decreased, savings began to drop. In 1993, they saved \$14,000, and, in 1994, they saved \$12,000. Currently, says Hibbs, Calhoun Square is saving half or less of what they saved at the program's start. And, with the addition of labor costs, cost savings are negligible.

### Lessons Which the DBA Can Learn From:

- Cost Savings most likely will not come from common methods of recycling. More materials should be reduced, reused, or recycled to create a cost savings (e.g. reduction and reuse of food waste). This is in addition to the cost savings produced from a common hauler contract through the DBA.
- A stable system for the constant education of business owners and employers must be developed. Incentives for continuing owner and employee participation must also be developed. Incentives can maintain enthusiasm for recycling. Human nature dictates that rewards be provided for enthusiastic participants.
- Implementation of a cooperative recycling program in Dinkytown should be sensitive to a lack of facilities built specifically for recycling.
- **Stable management** must oversee the program at least during implementation.

### Advice Greg Hibbs provided regarding Dinkytown:

- The DBA should remain sensitive to container abuse from members of the general public. Thus, containers should remain **locked** when not in use. **Graffiti** is also cause for concern. The Uptown recycling program often faces this problem.
- Must show business owners that they will save money if they switch haulers, *beyond a doubt*.
- It may not be legally possible to combine waste disposal and recycling into a cooperative program.
- The DBA ought to have the expertise for negotiating a better deal with haulers before the bidding process begins.

Dinkytown Recycling Pilot Program  
Andy Williams, Intern  
June 1997

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## **The EnvironMentors Program: Environmental Consultation and Resources**

### Description of EnvironMentors

EnvironMentors is a program sponsored by the North East Business Association and the Northeast Economic Development Council designed to encourage waste prevention by changing company practices. Practices which improve a businesses profitability and competitiveness are stressed.

### Services Provided

Volunteers, or "mentors", with EnvironMentors may visit individual businesses. During these visits, they ask questions geared toward reducing waste and preventing pollution. EnvironMentors also provide a resource library as well as consultation services. Any business owner may browse through written information about environmental programs in the state of Minnesota.

### Consultation is Non-threatening

Mentors with the program are business people and are not affiliated with regulatory enforcement agencies. Site visits are confidential.

### How this applies to Dinkytown

Eric Hudson seems more than willing to provide assistance where needed. EnvironMentors and other agencies may be able to answer some questions during cooperative program implementation.

For further information contact:

Eric J. Hudson  
EnvironMentors  
1618 Central Avenue NE  
Minneapolis, MN 55413  
Phone: (612) 789-4352

**Food Waste Reuse:  
Interview with John Polanski, MnTAP  
April 18, 1997**

Summary of the Interview

According to John Polanski, Second Harvest may provide food reuse service to Dinkytown restaurants for a monthly service fee. Service would include use of second harvest's 32 gallon barrels and transport of food waste to their hog farm. Each time pick-up trucks arrive, full barrels are taken and replaced with clean barrels. All food materials except coffee grounds and excessive amounts of salt are acceptable.

Assistance Available

John Polanski is willing to provide a free presentation to DBA restaurant owners. Polanski's session would include slides about Second Harvest and food waste success at the Thunderbird Restaurant and Hotel in Bloomington. Such a meeting could be scheduled in early June and may also involve presentations by associates with Second Harvest.

Reuse Test

If there is sufficient interest generated, sign-up sheets for a reuse test could be passed out during the meeting. Polanski suggested that Second Harvest lend out containers for the use of Dinkytown Businesses. Thus, the DBA would know if there are sufficient amounts of food waste generated to start a longer pilot program with actual pick-ups. In addition, employers and employees would know how much effort a program such as this requires.

Positive Aspects of Hog Farm Reuse

- By subtracting food waste from the waste stream, Dinkytown businesses should see **significant** decreases in disposal costs. For instance, the Thunderbird Restaurant and Hotel in Bloomington saves \$100 recycling approximately 540 tons of food waste each month.
- Food waste is an untapped source of nutrients for hogs. Since a hog's digestive system is similar to that of humans, hogs are a natural consumer source for excess food.
- By separating food waste from the general waste stream, restaurant owners and managers can more easily evaluate their food waste. Thus, they can stop wasteful practices before those practices begin--**saving money** in the long-term. The Thunderbird Restaurant reduced **20%** of their food waste.

**Second Harvest Farms: A Food Reuse Group**  
**Interview with Curt Johnson**  
**May 7, 1997**

Curt Johnson, a representative of Second Harvest Farms, provided insight into his program and its feasibility in Dinkytown. Essentially, Second Harvest Farms is a business which picks up food waste from restaurants. Food waste is then fed to hogs on their farm.

Dinkytown Eating Establishments Eligible for Participation

Almost all restaurants are eligible for the program. Fast food restaurants have a difficult time separating wrappers, napkins, cups, etc. from food waste. Coffee houses may not want to participate due to the abundance of coffee grounds in their waste.

Fees and Materials Involved

Start-up costs should be relatively inexpensive for Dinkytown restaurants:

- Second Harvest provides 32 gallon containers with lids at no charge. Each container is cleaned and sanitized before it is returned to each business.
- A charge of \$3.00 per full container covers the pick-up costs as well as cleaning and replacing containers.
- There are no penalties for contamination.

Pick-Up Times

Second Harvest will take food waste six times a week (Mon.-Sat.). Thus, businesses will not need to store containers in their walk-in coolers. Food waste may be stored outside until pick-up.

Possible Concerns

Businesses will need to tackle these issues daily:

- Silverware, paper products, and plastic are often tossed in with food waste. Resulting contamination usually occurs when these materials are separated from plates for washing. Dishwashers need to take care when tossing materials.
- High employee turnover may create problems. Constant retraining of new employees may be necessary.
- Excessive amounts of salt and coffee grounds are inappropriate.



**We're Waiting To Hear From You!**

Reduce Reuse Recycle  
**Second Harvest**  
 Farms, Inc.  
 Recycling Food Products

434-9044

DAN JOHNSON  
 CURTIS JOHNSON  
 DAVE JOHNSON  
 MICK JOHNSON



Printed On Recycled Paper

Reduce Reuse Recycle  
**Second Harvest**  
 Farms, Inc.  
 Recycling Food Products



**A Total  
Recycling  
Program**

## Food Recycling . . .

This is how our food recycling program works. We provide you with 32 gallon covered containers for edible food by-products. Second Harvest Farms then picks up your containers each day and replaces them with sanitized ones.

Second Harvest Farms then takes the food-by-product to our hog farm and processes it according to Federal regulations.

We are licensed by the United States Department of Agriculture and the farm is inspected monthly by the State. It is an environmentally safe way to use the food by-product.

This is a TOTAL recycling program where NO material goes back to a landfill or burner.

## What The Program Can Do For You . . .

- \* We save you money in your disposal costs.



- \* No start up fees.
- \* Reduces odor and leaks from your container.
- \* Prevents usable food material from going to the landfills or burn facilities.
- \* Containers are replaced daily with sanitized containers.
- \* No sales tax on food recycling program.

\* Reduces water bills on sink

## Starting The Program . . .

You should notify your refuse hauler that the food recycling program is going to start.

You and your hauler will adjust your costs according to the size of your container and the frequency of pickups.

We will send monthly statements that reflect our charges of \$3.00 for each container. This charge covers the costs of picking up the material, cleaning and replacing the containers.

We are proud to bring this program to you as we know you will realize savings in your disposal costs.

If you have questions please feel free to call us at 434-9044. Our office hours are 9:00 a.m. to 4:00 p.m. Monday through Friday.



# Solid Waste Management and Reduction in the Restaurant Industry

Minnesota Technical Assistance Program ■ CASE STUDY

Company	The Thunderbird Hotel and Convention Center, Bloomington, Minnesota.
Industry	Restaurant and banquet service.
Waste stream	Solid waste: food, cardboard, glass, aluminum and steel cans.
Process	Commercial restaurant meal preparation. Food waste, cardboard and containers made of glass, aluminum and steel are disposed of in the Dumpster at a cost of \$60 per ton.
Change	Food waste is collected for recycling as animal feed; cardboard, glass, aluminum and steel are separated and recycled.
Cost	\$45 per month to recycle cardboard, glass, aluminum and steel; \$225 per month to recycle food waste. No new staff were added. (Note: these costs are for 1995.) One-time purchase cost of \$5,000 for a cardboard baler; no other equipment was purchased for handling wastes.
Savings	Solid waste was reduced by 50 percent, resulting in disposal cost savings of \$459 per month. The rate at which the Dumpster was filled decreased from five days to two to three weeks. After monitoring food waste generation, food preparation was changed to reduce unnecessary waste. This resulted in a 20 percent reduction in food waste.

## Background

The Thunderbird Hotel and Convention Center in Bloomington, Minnesota, prepares meals for its restaurant patrons and caters meals for banquet events. Meals are prepared from food that arrives either unpackaged or in aluminum and steel cans or glass containers.

A recycling program was started primarily because of the rising cost of waste disposal, which had doubled in one year from \$35.75 per ton in 1990 to \$95.00 per ton in 1991. This cost was reduced to \$60 per ton in 1995. (Note: this wide fluctuation in cost shows the volatility of tipping fees.)

## Waste Reduction Process

### Solid Waste Recycling

The hotel's recycling and waste reduction program began by separating out recyclable materials from the Dumpster. This included cardboard, glass, and aluminum and steel cans. A cardboard baler and containers for the glass and cans were placed next to the Dumpster making it easier for employees to remember to recycle rather than discard recyclable materials.

Recyclable materials are picked up by independent haulers at a cost that is substantially less than disposal costs. Therefore, reducing the amount of waste placed into the Dumpster generates cost savings. The only costs incurred to implement the recycling program were from the time spent training employees to recycle, and a one-time purchase cost of a cardboard baler (approximately \$5,000).

Page 1

(continued)

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The amount of materials recycled and cost savings generated by eliminating disposal costs (\$60 per ton) are:

- **Cardboard:** Approximately two, 150-pound bales of cardboard are generated each day, or 4.5 tons per month. Cost savings = \$270 per month.
- **Glass:** Approximately ten, 100-pound barrels of glass are generated each week, or 2 tons per month. Cost savings = \$120 per month.
- **Aluminum and steel cans:** Approximately ¼ ton of cans is generated each month. Cost savings = \$15 per month.

Total cost savings = \$405 per month. The cost to have these materials picked-up for recycling is \$45.00 per month. Therefore, actual savings = \$360 per month.

### Food Waste Recycling and Reduction

The next objective of the waste reduction program was to reduce the amount of food waste discarded in the Dumpster (Note: a garbage disposal was not used to dispose of food waste). The head chef used a computerized system for monitoring food inventory, the amount of food used per meal and the percentage of waste per meal. This helped minimize food waste generated in food preparation, but it did not completely eliminate food waste.

A local food by-product recycling firm, Second Harvest Farms, worked with the head chef to establish a food recycling program. Second Harvest Farms provides containers (labeled with a recycling logo) that are conveniently located at meal preparation and dishwashing sites. The close location to work areas provides a quick and easy place for staff to discard food. Filled containers are picked-up six times a week by Second Harvest Farms, which eliminates the need for long-term storage of food waste. Second Harvest Farms hauls the food waste to a local livestock farm where it is used as hog feed.

When routinely checking the amount and type of food being disposed of in the recycling containers, the head chef saw that useable food was being discarded. As a result, food preparation procedures were changed, resulting in a 20 percent reduction in the total volume of disposed food.

The amount of food waste recycled and the cost savings generated by eliminating disposal costs are:

- **Food:** Approximately 18 150-pound barrels per week, or 5.40 tons per month. Cost savings = \$324 per month.

Total cost savings = \$324 per month. The cost to have these materials picked-up for recycling is \$225 per month. Therefore, actual savings = \$99 per month.

### Conclusion

The hotel's recycling program eliminated food waste, cardboard, glass, aluminum and steel from the Dumpster, and reduced the hotel's total amount of disposed waste by 50 percent. This saved a total of \$459 per month in disposal costs in 1995. However, according to the head chef, the continued success of this program requires daily management of the recycling area and the support of employees in order for the program to work effectively.

### More Information

If you have questions about this case study or would like assistance with your waste reduction efforts, call MnTAP at 612/627-4646, or 800/247-0015 if calling from greater Minnesota.

*Special note: This case study was originally published in December 1991, when tipping fees were \$95 per ton. At that time, actual cost savings (after costs for recyclables pick-up) were \$919.50 per month. Tipping fees can vary greatly from year to year, and result in either reduced or increased cost savings.*

Dinkytown Recycling Pilot Program  
Andy Williams, Intern  
June 1997

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## Cooperative Recycling in Uptown: "Uptown Recycles"

### Background

Success of the Calhoun Square Recycling Program (started in 1990) and a survey of 250 Uptown businesses conducted by the Minnesota Public Interest Research Group (MPIRG) increased interest in starting a cooperative recycling program led by the Uptown Business Association.

### Steps of Source-Separated Recycling Program

- 1) The Uptown Association, with 150 members, solicited bids from recycling haulers. Aagard Sanitation, Inc. won the contract.
- 2) After months of planning, the project started in May 1990. It began with collection of corrugated cardboard, glass, and office paper in one quadrant of a 10-block area. Thereafter, one quadrant was added every two months. Cans were added when the second quadrant joined the program.
- 3) After two months, those responsible for the program checked up on participants and found them still enthused.
- 4) "Uptown Recycles" continues to operate today.

### Problems Encountered

- Contamination in the beginning stages plagued the program. To prevent this, program leaders placed locks on all containers and sent a stern letter to participants. Eventually, business owners and their owners became accustomed to recycling, and thus contamination was no longer an issue.

### Food Waste Reuse in Uptown

According to Curt Johnson with Second Harvest Farms, the following Uptown businesses utilize his services. With this program, food is sent to hog farms for consumption.

Restaurants using Second Harvest: Annie's Parlour Uptown, Green Mill, Amber's, and Old Chicago.



**King County**  
**Solid Waste Division**  
Department of Natural Resources  
Yesler Building  
400 Yesler Way, Room 600  
Seattle, WA 98104-2637  
(206) 296-6542

## Waste-Free Fridays Program Summary

Waste-Free Fridays is a program which rewards residents for reducing waste. Sponsored by the King County Solid Waste Division, the campaign joins with businesses to offer incentives for preventing waste on Fridays. Each quarter of the year focuses on a specific behavior, and features one business partner. The waste reduction behaviors are simple, designed to show residents how easy reducing waste can be. During 1996, the program focused on the following:

- *Reusable mugs:* Bruegger's Bagel Bakeries offered free drip coffee to customers who brought a reusable mug to any of their 12 locations.
- *Grasscycling:* Twenty-five Toro lawnmower dealers offered \$60 off mulching mowers purchased on Fridays.
- *Double-sided copying:* Kinko's Copy Centers doubled their discount on 2-sided copies at 26 locations.
- *Holiday waste reduction:* Ticketmaster offered discounts on tickets to over 50 different events, encouraging residents to give an experience instead of stuff wrapped in wasteful packaging.

The King County Solid Waste Division joined with two media sponsors to promote the program: KBSG radio and TCI cable. These sponsors provided an additional \$500,00 in free media time, above a paid schedule of advertising. Overall, the private sector contribution to the program is more than \$1 million.

Sales for each participating retailer, and consequently, the desired waste reduction behaviors, have increased during Waste-Free Fridays. Bruegger's Bagel Bakeries showed an increase of 239% in cup refills and 342% in durable mug sales during the first week of the promotion. Refills stayed at about 100% above normal during the three months of the promotion. During the second quarter, Toro dealers showed 27% higher sales than average. Kinko's Copy Centers rates of 2-sided copying increased 78% over the previous year's rates. And, during the fourth quarter, Ticketmaster sold 3,000 tickets on Waste-Free Fridays – 500 tickets per Waste-Free Friday.

Waste-Free Fridays has been a popular program among King County residents and businesses, and has garnered much media attention. The program has continued into 1997 with the following partners:

- **First Quarter:** Bruegger's Bagels offered free drip coffee to anyone with a durable mug, plus half-off the regular price of a durable mug, good at any of their 25 locations.

- Second Quarter: Eagle Hardware and Garden Stores offer discounts on a variety of products that conserve resources, from soaker hoses to compost bins, to weed mats. This quarter is co-sponsored by Seattle Public Utilities, the Local Hazardous Waste Management Program in King County, and the Water Conservation Coalition of Puget Sound.
- Third Quarter: Fred Meyer grocery and variety stores will offer discounts on a variety of products that reduce waste while grocery shopping, from reusable bags to bulk foods.
- Fourth Quarter: Ticketmaster will again discount tickets to events to encourage giving experiences instead of stuff during the holidays.

KBSG radio and TCI Cable have continued as media sponsors, providing free air-time for the program.

Waste-Free Fridays is a trademark owned by the King County Solid Waste Division. The program is available for use by other jurisdictions through a licensing agreement.

For more information about the Waste-Free Fridays program, call Suzette Riley at (206) 296-4352.

# Appendix H: Recycling Markets

*Revenues from selling recycled materials are an important component in the comparison of benefits and costs for recycling programs that can be implemented by governments and private recyclers. An understanding of a commodity's price history and a price forecast are important tools when deciding which materials to include in your collection program and how to allocate revenues from the sale of materials.<sup>1</sup>*

As with almost any industry, market fluctuations affect national and world recycling markets. Recycling cooperatives should understand that factors such as demand, supply, and seasonal changes can either increase or decrease prices for different materials at varying times.

In 1996, recycling operators faced some tough times.

*...exports were down across the board (except for used aluminum beverage cans), the domestic ferrous scrap market was fairly healthy, and prices for recovered paper and plastics (especially PET) were sick.<sup>2</sup>*

Although recycling markets have suffered in the past year, they will rebound. Over time, the cyclical nature of recycling markets creates price decreases and increases which eventually average together. In the long-term, the DBA should see recycling costs which are equal to or less expensive than disposal costs. Beyond cost issues, the DBA and other associations wishing to begin recycling programs should realize the environmental benefits and positive publicity which recycling programs can create.

Despite the cyclical nature of the recycling market, public support for recycling is very strong. A survey conducted by the Council on Packaging in the Environment found that the majority of 1,000 adults surveyed believe the environment is a very or extremely serious issue.<sup>3</sup> A Dinkytown recycling cooperative can benefit from this support.

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<sup>1</sup>From website: [www.cwc.org/briefs/publicpolicy.html](http://www.cwc.org/briefs/publicpolicy.html), "Recycled Material Prices-Two Decades Past and Future" Public Policy, April 1994.

<sup>2</sup>Meg Lynch, "Recycling in 1996: Trends and Issues." Resource Recycling, (December 1996) 33.

<sup>3</sup>Lynch 33.

## Appendix I: Source Reduction

# Myths and Realities of Source Reduction

Although source reduction - *the reduction of the amount and/or toxicity of waste at or before the point of generation* - is at the top of the solid waste management hierarchy, it is given little attention by consumers, government and business. This is partly because individuals are unfamiliar with what source reduction is and how they can put the principle of source reduction into practice. In an effort to set the record straight on the benefits of source reduction, this fact sheet highlights some of the common myths about source reduction along with the realities of this emerging resource conservation and waste reduction strategy.

- MYTH:** Source reduction and recycling are incompatible.  
**REALITY:** Source reduction and recycling combine to achieve overall goals of disposal cost savings, waste reduction, resource conservation and environmental protection. For example, there are numerous examples of source reduced packaging that is made with recycled materials and will be recycled.
- MYTH:** Source reduction achievements cannot be measured.  
**REALITY:** Although there is still a need to further develop and standardize measurement techniques, a variety of approaches can be used by consumers, government and industry to analyze source reduction progress and measure results.
- MYTH:** Implementing source reduction is costly for businesses.  
**REALITY:** Source reduction can save raw material and transportation costs and increase efficiency, through reductions and improvements in purchasing, handling, storing, and disposing of materials. Also, implementation costs are often far less than the long term savings.
- MYTH:** Companies must sacrifice product quality and service in order to reduce waste.  
**REALITY:** Source reduction is regularly achieved without quality or service compromises, sometimes resulting in improved product performance, greater efficiency, and enhanced public relations.
- MYTH:** We don't need to reduce waste since garbage disposal is a free service.  
**REALITY:** Waste disposal is a service that requires staff, equipment and other costs, but may *appear* free because many programs are paid for through general tax revenues, creating little incentive to reduce waste.

**MYTH:** Source reduction is inconvenient for consumers and will require having to do with less.

**REALITY:** Consumers regularly practice source reduction in a number of simple ways already and with education and incentives can do more (e.g., buying more durable items or purchasing in bulk, reusing items more often, repairing broken materials, practicing backyard composting and participating in other community source reduction programs).

**MYTH:** We don't need to worry about waste generation because we have plenty of landfill space.

**REALITY:** U.S. EPA projects that waste generation will increase to more than 262 million tons in 2010, up from 209 million tons in 1994. Also, since 1960, the waste generated by Americans has increased at more than twice the rate of population growth. While adequate landfill capacity exists in the short term, source reduction will reduce the need for new or expanded disposal facilities.

**MYTH:** The public is not interested in buying source reduced products or packages.

**REALITY:** There are numerous examples of strong consumer preference for source reduced products - such as concentrates, refills for cleaners, soaps, thinner products like baby diapers, and lighter weight, more compact consumer electronics.

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*A program of the National Recycling Coalition (NRC), the Source Reduction Forum's goal is to conserve resources and reduce waste by encouraging the efficient use of materials, developing and promoting source reduction and reuse strategies, and further integrating these strategies with recycling. The Forum is coordinated by a steering committee of national source reduction experts from commercial, government, university, and non-profit sectors. Staff support is provided by the NRC. Grant support is provided by U.S. EPA*

# Integrating Source Reduction and Recycling

a program of the  
National Recycling  
Coalition, Inc.

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Although some would ask which is better, source reduction or recycling, the right answer is both. The best way to use less resources and minimize waste generation and disposal is to source reduce first and recycle what is left. If that is impossible, then the answer depends on the specific details. In any case, the goal is to use raw materials as efficiently as possible and reduce waste in the process.

So let's look at some details of a simple example of how to do both.

Take office copy paper. It can be double-sided copied - a source reduction technique - or it can be recycled. Obviously, double-sided copying and recycling is the best answer.

Let's assume that a 10 page report could be double-sided copied on 5 sheets of paper or single-sided copied on 10 sheets. Let's also assume that the average recycling rate for office paper is 40%. Here's how they compare:

<u>System</u>	<u>Sheets Used</u>	<u>Sheets Recycled</u>	<u>Sheets Disposed</u>
1. Recycle only (40% rate of 10 sheets)	10	4	6
2. Source reduce only (double-sided copied)	5	0	5
3. Recycle and source reduce (40% of 5 sheets)	5	2	3

Obviously, the best answer for this illustration is to do both. First source reduce, then recycle what's left.

For source reduction to be most effective it needs to be better integrated with reuse and recycling. In many cases, successful source reduction initiatives have actually grown out of recycling programs. Since most local governments and businesses have already established recycling programs, they can begin to focus more attention on source reduction and reuse. Simple strategies include:

- Including source reduction and recycling in waste reduction goals. Some states give credit to communities toward their recycling goals for implementing specified source reduction activities and businesses can incorporate source reduction into company goals.
- Providing incentives to reduce waste that are also compatible with recycling programs, such as "pay as you throw" programs or user-fee based systems in combination with recycling programs.



- Building on public awareness created by recycling programs to promote the complementary strategies of source reduction and reuse. An effective strategy is to piggyback source reduction onto already successful and familiar recycling efforts, including public education initiatives and on-site assessments of business waste reduction opportunities.
- Designing products, taking into consideration reducing the amount of materials used and ensuring that the materials used contain recycled content and are recyclable. By conducting an analysis of the waste stream, companies and government offices can identify opportunities to increase efficiency, reduce packaging and waste, use recycled-content materials, and recycle what is left over.
- Banning materials from collection or disposal, thereby creating an incentive to reduce waste and/or recycle materials. Bans are most effective where communities have established source reduction programs to convey the benefits of waste reduction and recycling programs to handle material diverted from the waste stream.
- Dedicating adequate resources to source reduction, reuse and recycling. To maximize waste reduction efforts, use creative program initiatives that encourage collaboration between departments and offices and educate staff about how to integrate these waste reduction options.

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# Business and Source Reduction

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According to the U.S. Environmental Protection Agency (EPA), our country's commercial sector generates between 35% and 45% of the municipal solid waste stream. This means that businesses and institutions generated almost 100 million tons of garbage in 1994.<sup>1</sup> Office products, paper packaging, shipping containers, used equipment and furniture, and cafeteria

waste are all examples of the items commonly thrown away each year. Even with increased recycling and composting efforts, the U.S. EPA projects that the amount of waste disposed will increase by 2010. Clearly, source reduction efforts are needed to stop this waste at the source and prevent its generation in the first place.

Despite the trend of increasing waste generation, many large and small businesses across the country have made a commitment to reduce, reuse and recycle their waste. Thousands of companies have established successful recycling programs and are committed to buying recycled products. Many of these companies are expanding their programs to include source reduction and reuse initiatives.

This fact sheet is designed for businesses interested in how to reduce waste and improve their bottom line. It includes ideas for source reduction and examples of companies that have been successful reducing waste and cutting costs.

## WHY CONSIDER SOURCE REDUCTION AND REUSE?

Source reduction and reuse offer numerous benefits both to businesses and to society in general.

*Businesses can gain a competitive advantage by reducing waste at the source while doing their part to protect the environment.*

### WHAT IS SOURCE REDUCTION?

Source reduction means preventing waste before it is produced.

### WHAT IS REUSE?

Reuse means finding similar or new uses for items that might otherwise be discarded.

Source reduction and reuse can:

- save money through reduced purchases.
- reduce the amount of waste requiring collection and disposal.
- increase efficiency and productivity.
- lead to energy conservation and savings for the company.
- enhance the business' image in the community and with its customers.

## WHAT CAN A COMPANY DO?

- **Establish a Source Reduction Policy.**  
A commitment to reducing waste often begins with a clearly defined philosophy and policy to conserve resources and protect the environment. Support from top management is key to successful programs.
- **Conduct a Waste Assessment.**  
A waste assessment can help identify the weight, volume and types of materials generated and evaluate potential source reduction and reuse options. A waste assessment may also help improve recycling and composting programs. Companies can evaluate their purchasing, manufacturing and distribution processes for opportunities to use less material, reduce waste and increase productivity.
- **Organize Teams to Carry Out Source Reduction Initiatives.**  
Employees can work in teams to develop simple and innovative practices that can be used to reduce waste. This can lead to expanded, more comprehensive source reduction programs down the road.
- **Redesign Products to Reduce Waste.**  
Companies can design for source reduction by creating products with less packaging and that are durable and reusable. By reducing the amount of material and toxicity generated in the design of products, businesses reduce the burden of managing these products when they are thrown away.
- **Form Partnerships.**  
Companies may enhance reduction efforts by forming partnerships with other groups interested in source reduction. Successful corporate partnerships include working with waste haulers, materials suppliers, business trade associations, local government agencies, economic development programs and other businesses that have successfully implemented source reduction.

*Continues on reverse*

- **Measure Progress and Share Results.**  
Once the initiative is underway, businesses should be sure to measure progress and share the lessons they learn with other companies. Business can learn from one another about what makes a successful source reduction program and gain insight into potential source reduction initiatives.
- **Reach Out to Customers.**  
Companies should communicate with their customers about their source reduction efforts and encourage consumers to give feedback. This will help justify implementing source reduction programs and may help to overcome any concerns about source reduction impacts on product quality or customer service.

After a closer look, companies may identify a number of potential source reduction and reuse strategies.

*Some simple strategies include:*

- encouraging the use of e-mail.
- practicing double-sided copying.
- reusing routing envelopes to send internal mail.
- using jumbo rolls of paper toweling and toilet tissue.
- using rechargeable laser printer cartridges.
- encouraging employees to use reusable coffee mugs.
- investigating opportunities for the use of reusable shipping containers.
- implementing a furniture/equipment reuse or donation program.
- reusing packaging materials.
- routing memos, magazines, and newspapers.

## SOURCE REDUCTION AND REUSE BUSINESS SUCCESS STORIES

### AT&T

AT&T uses jumbo rolls of paper toweling and toilet tissue in its facilities. The company also packaged some of its products in smaller, recyclable corrugated boxes, replacing larger boxes not fully used. Each ton diverted by the initiative saves the company approximately \$150 in waste hauling and disposal costs. The company also has a "default service is duplex" program at its copying center, meaning that all documents will be copied double-sided unless the client requests otherwise. If it meets its company wide goal of increasing the duplexing rate to 50 %, the company could reduce paper use by 77 million sheets annually, resulting in about \$385,000 in reduced costs.

*Source: How to Reduce Waste and Save Money: Case Studies from the Private Sector, New Jersey Department of Environmental Protection, 609/984-3438.*

### Federal Express Corporation

Federal Express, the overnight express delivery company, has saved \$20 million through a number of source reduction strategies, including reducing the thickness of the paperboard used to manufacture the 9-1/2" x 12-1/2" FedEx envelope. The company has reduced the weight of the envelope 40% since it first came on the market. The company is also looking at ways to increase the recyclability of the envelope - by eliminating the polyethelene film that is laminated to one side of the package. FedEx has also targeted other sources of paper, paperboard and its polyethelene shipping containers to reduce waste and enhance its environmental commitment.

*Source: Indiana Institute on Recycling, 812/237-3000; Indiana Waste Prevention Faxline, 800/603-6277.*

### Target Stores

Target Stores, a national chain of more than 600 retail stores, has long been a leader in waste prevention and recycling. For Target's softlines merchandise, the company has set a goal to become "trashless," and saved millions of dollars eliminating unnecessary packaging and reusing packaging that is produced. Target reduced its use of various transport packaging materials by 12,820,000 pounds in 1994 and continued its mission to go paperless by expanding the use of electronic data interchange (EDI) and e-mail. This involved including new vendors in the policy of paperless purchase orders via EDI.

*Source: Waste WiSe 1996 Program Champions, 800/EPA-WISE*

<sup>1</sup> E.P.A. defines commercial generators as "retail and wholesale establishments, hotels, office buildings, airports and train stations, hospitals, schools, and other institutions and similar sources. No industrial process wastes are included, but normal MSW such as packaging, cafeteria and washroom wastes and office wastes from industrial sources are included." *U.S. EPA Characterization of Municipal Solid Waste: 1995 Update, pg. 119-20.*

## FOR MORE INFORMATION

Contact the National Recycling Coalition at 703/683-9025 ext. 405 for more information about the Source Reduction Forum.

# Local Governments and Source Reduction

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Local governments provide a range of valuable programs and services to the community. Municipalities also own and operate numerous buildings, disposal facilities, vehicle fleets, hospitals, correctional facilities and offices, and in this capacity, generate waste and emit pollutants. By reducing waste generation in government facilities, local governments have a tremendous opportunity to lead by example and serve as a model to the community.

City and county governments also can actively promote source reduction to members of the community—consumers, businesses, schools and other major waste generators. Through public education programs, workshops, technical assistance programs and other strategies, municipal leaders can help people stop and think about the impacts of the waste they generate and demonstrate how to practice source reduction. Local governments can educate consumers how to use their power in the marketplace wisely, by shopping with source reduction in mind. By forming partnerships with businesses, cities and counties can also work with companies to show how waste prevention benefits their bottom line and can increase productivity.

**WHAT IS SOURCE REDUCTION?**  
Source reduction means preventing waste before it is produced.

**WHAT IS REUSE?**  
Reuse means finding similar or new uses for items that might otherwise be discarded.

The good news is that while source reduction efforts have largely been "waste minimization" and "pollution prevention" on the manufacturing level, a growing number of cities and counties have also initiated source reduction and reuse programs. Communities across the country—large and small, urban and rural—are learning that source reduction programs can save money and conserve valuable natural resources.

Communities as diverse as Trinity County, California (pop. 14,500) and New York City, New York (pop. 7 million) have taken steps to reduce the volume and toxicity of their wastestream. Still others are just learning how source reduction can benefit their community. Source

reduction programs can save money through reduced purchases, reduce the amount of waste requiring collection and disposal, provide local businesses a service that helps save them money and help the community understand the importance of waste reduction.

This fact sheet is designed to help local governments establish new and innovative programs and presents examples of the kinds of successful programs happening across the country.

## STEPS FOR SETTING UP A PROGRAM

Many communities with effective source reduction programs followed the strategies below when setting up their program.

- **Set a Source Reduction Policy with Specific Goals.**  
A clear statement of policy is a good first step in planning for source reduction. Setting specific goals and developing a plan to measure progress and results will spur community-wide source reduction activities.
- **Set priorities.**  
By assessing the composition of the wastestream, communities can target materials that comprise a major portion of the wastestream, are difficult to recycle, are easy to reduce, or have a significant negative environmental impact.
- **Secure staffing.**  
Be creative when setting up a program to take advantage of limited budgets and staff. If there aren't resources to hire a source reduction program coordinator, see if responsibilities can be allocated to existing staff; recycling staff are typically suitable and can take advantage of their existing contacts and expertise.
- **Identify Budgetary Resources.**  
Communities have funded source reduction in a variety of ways, such as through the general fund, a designated income stream, disposal tipping fees, a percentage of the recycling budget, grants from federal or state government, and environmental taxes or fees. Some communities have been successful using volunteers to assist with programs.

*Continues on reverse*

- **Gain Support.**

A targeted and comprehensive education program is critical to the success of any waste prevention effort. City and county staff can reach out to residents, local businesses and elected officials through workshops, utilizing electronic media, local newspapers, free videos at video stores, transit advertising and direct mail.

- **Establish Partnerships.**

Successful partnerships on the local level may involve forming an internal or community-wide task force, collaborating with other city and county agencies, and working with local businesses, state extension offices, universities and non-profit organizations.

- **Implement Program.**

Some cities and counties will launch a community-wide, full scale initiative while others start more slowly, taking small steps to implement their program. Don't overwhelm your audience at once, but stay focused with a clear message and measurable goal.

- **Monitor and Evaluate Results.**

Despite the fact that measuring source reduction can be quite challenging, many communities have found both qualitative and quantitative ways to measure their program. Some have measured waste reduced through reuse programs and backyard composting efforts. Others have tracked the cost savings of their source reduction initiatives. Measuring source reduction over longer periods of time will help demonstrate reduction trends and success.

## WHAT ROLE CAN LOCAL GOVERNMENT PLAY?

There is no "cookie cutter" approach to source reduction; rather, local governments can choose from a variety of ways to successfully incorporate source reduction and reuse into their waste management programs.

## POPULAR LOCAL SOURCE REDUCTION PROGRAMS

The Source Reduction Forum has identified the following types of popular local source reduction programs:

- In-house programs
- Policies and economic incentives
- Educational efforts
- Educational and on-site business assistance programs
- Salvage and reuse programs
- Backyard composting and "grasscycling" programs

## PIONEERING PROGRAMS

- Kalamazoo, County, Michigan established an internal waste reduction committee with representation from all county departments. Written quarterly reports using, in effect, "peer pressure" have been very effective in tracking progress toward reduction goals and encouraging participation.
- Arlington County Virginia offered its residents a total of \$10,000 in rebates for low-emission mulching lawnmowers to reduce yard trimmings entering the solid waste stream. The county sold out of rebates in only 25 days.
- King County, Washington has established "Waste Free Fridays," where the city spotlights a different waste prevention activity on Fridays each quarter of the year. The campaign included free coffee to customers who bought a durable mug at Bruegger's Bagel Bakeries, discounts on mulching lawnmowers from Toro, and discounts on double-sided copying from Kinko's.
- Ramsey County, Minnesota has a Business Waste Assistance Program that offers on-site consultation and materials exchange opportunities for businesses. Focus group results have demonstrated an increasing awareness of the benefits of source reduction, credited in part to the program's aggressive promotion and outreach.
- Los Angeles, California supports L.A. Shares, a non-profit reuse operation that collects office furniture and supplies, arts and crafts, toys, tools, paints, and other items, and transfers these items to nonprofit organizations and schools in the city and Los Angeles County.
- The City and County of Denver, Colorado runs the Denver Recycles Master Composter Program, where individuals are trained in the science of backyard composting and provide 750 hours of public education to Denver homeowners.

## ORDER TODAY

More and more communities are finding source reduction and reuse are cost-effective options for addressing municipal solid waste concerns. For a full report on source reduction at the local level, contact the NRC to obtain a copy of *Making Source Reduction and Reuse Work in Your Community: A Manual for Local Governments*. This guide includes 22 case studies of the most innovative and effective programs in the country, as well as a discussion of lessons learned and "how to" strategies designed to help communities interested in establishing or expanding source reduction programs.

# Consumers and Source Reduction

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The amount of waste generated by Americans is increasing. The average person generates 4.4 pounds of garbage each day! This is expected to grow to 4.8 pounds per person per day by 2010.

Although thousands of communities across the country run successful recycling programs, this is only part of the solution for reducing the amount of solid waste

requiring disposal. We must look upstream and consider ways to reduce the amount of waste each of us generates. In the long run, actions we take today will reduce both disposal and cleanup costs in the future.

## WHAT CAN BE DONE?

Two major opportunities to build public interest in reducing trash are creating incentives to do so and conducting strong educational programs that promote the benefits of waste reduction. Today, in most communities, there is little reason for consumers

to make waste reduction a priority. Trash disposal is either thought to be 'free' (in other words, residents have no idea what they pay for it and are not billed directly), or homeowners have no influence on their bill. They pay the same monthly fee no matter how much they throw away.

Those cities that offer a variety of trash collection fees for different size trash cans, or the number of cans set out, usually report a marked reduction in the amount of household trash put out for collection. In other words, when trash becomes a financial issue in the household, like the water and phone bill, it then becomes a priority.

With some exceptions, the average household receives little information or education on how they can reduce their trash. While many communities have put forth considerable efforts to educate their citizens about recycling, far fewer have expended similar efforts to promote source reduction. Many states have banned yard trimmings from disposal and have produced some dramatic growth in consumer grasscycling (mulching) and backyard composting. However, few households know how they can reduce their trash.

### WHAT IS SOURCE REDUCTION?

Source reduction means preventing waste before it is produced.

### WHAT IS REUSE?

Reuse means finding similar or new uses for items that might otherwise be discarded.

## WHAT CAN YOU DO TO REDUCE WASTE?

How do you choose what to buy? Most of us select products based on the price and quality of an item. There are other factors to consider—ones that benefit the environment and future generations.

### CONSIDER THE FOLLOWING BEFORE YOU SHOP:

- **Make a list of the items you really need.**  
A list discourages impulse buying.
- **Bring your own reusable bags for shopping.**  
Reusable bags help to conserve energy and natural resources. And many stores give discounts for those who bring their own.
- **Plan for and research your larger purchases.**  
Information is available on the energy efficiency, reliability and durability of products such as refrigerators, stoves, televisions and automobiles.
- **Save money and resources - Rent!**  
Renting may be just the answer for items or equipment you only use once in a while. Power tools, landscaping equipment, boats, formal wear, computers and carpet cleaners are just some of the products which can be rented for temporary use. See the Yellow Pages under rentals.

### CONSIDER THE FOLLOWING WHILE YOU SHOP:

- **Purchase products with the least amount of packaging.**  
For example, buy toothpaste that is sold without the box or other items in the supermarket with little or no packaging.
- **Buy the large economy size of products that you use regularly and that won't spoil.**  
The larger sizes use less packaging per product and often cost less (in terms of per unit pricing) to purchase.
- **Buy products in concentrated form.**  
Concentrated frozen juices, fabric softeners and clothing detergents cut down on packaging.

*Continues on reverse*

- **Purchase durable and energy efficient items that are repairable.**  
Well made goods save money in the long run. Check warranties, repair services and availability of parts and accessories. Also, use rechargeable items and batteries, rather than replacing single-use batteries.
- **Buy products in reusable or refillable packaging.**  
Some detergent bottles, household cleaners and water bottles are made to be refilled and reused either by the consumer or the manufacturer.
- **Buy products made of and packaged in recycled materials.**  
Look for labels that note that the product or package is composed of recycled materials.
- **Consider a mulching mower if you are in the market for a new lawn mower.**  
Grass clippings make up a large portion of summer waste. Leave your clippings on the lawn when you mow. If you must collect the clippings, consider composting them in your yard with other organics.
- **Avoid buying products you don't really need.**  
Read rarely read magazines at the library, rather than subscribing to them.

### CONSIDER THE FOLLOWING AFTER YOU SHOP:

- **Reuse packaging whenever possible.**  
Margarine tubs, yogurt containers, coffee cans, grocery bags and jars can be reused to store foods, leftovers, screws and nails.
- **Reuse leftover materials to make something new.**  
Scrap lumber may be used to make birdhouses, mailboxes or other small carpentry projects. Fabric scraps may be used as gift wrap to make doll clothes or for dust cloths.
- **Sell or donate used books, clothing, furniture, bicycles and appliances to a consignment shop, thrift store or service organization, or local materials reuse program.**  
(NOTE: Contact the organization ahead of time to be sure that the item is acceptable).
- **Maintain and repair products instead of replacing them.**  
Refer to the Yellow Pages for the names of persons/businesses who repair and service various products or take a shot at fixing them yourself.
- **Start a compost pile in your backyard for yard trimmings.**  
Leaves, spent flowers and vegetable plants, weeds and shrub pruning all can be turned into useful soil amendment. Contact your county agricultural extension agent or local recycling office for more information.

- **React!**  
Let manufacturers and store owners know how you feel about their products. Use the manufacturer's 800 phone number or write to the address on the product label. Speak to the store manager about your preferences.
- **Contact companies or groups that send you unwanted mail and ask them to take you off their mailing list.**  
Also, ask mailers not to sell or rent your name to other companies or organizations.

## REDUCING TOXICITY: HOW TO MANAGE HOUSEHOLD HAZARDOUS WASTE

Household hazardous waste is classified as flammable, toxic, corrosive or reactive materials. Consider following these common sense tips regarding household hazardous waste.

- **Try to buy nonhazardous products for use at home.**  
Less toxic or non-toxic alternatives exist for many products.
- **If you must buy a product that has hazardous ingredients, buy only the amount you will need.**
- **Try to use up all the product you buy or give the unused portion to people or organizations that can use them.**
- **Read the instructions on labels for product safety, storage, use and disposal information.**  
Call the product manufacturer at their 800 phone number if listed. Look for key words such as "petroleum distillates," "solvents," or "flammable."
- **Learn how to properly recycle or dispose of household hazardous waste.**  
Household hazardous waste such as solvent cleaners, rechargeable batteries, waste oil, antifreeze, fluorescent bulbs and paint and pesticides containing lead and mercury should not be disposed of through sink drains. These hazardous wastes end up in the municipal waste water treatment facility or in your septic system.

### WHAT YOU CAN DO TO PROMOTE SOURCE REDUCTION

- Support your local source reduction program.
- Be an educated consumer.
- Practice backyard composting or grasscycling.
- Volunteer to help with source reduction initiatives.
- Attend packaging reduction workshops.
- Let companies know about your preferences.
- Practice source reduction in the home.

## Popular Ways for Businesses to Reduce Waste

Source reduction prevents waste at its source. When you do any of the following, you reduce waste:

- Reduce the material used to do any task.
- Reduce the toxicity of the material used to do any task.
- When safe, reuse a single-use product over and over again.
- Purchase reusable instead of single-use products.
- Use concentrates; buy in bulk when practical.
- Use refillable, repairable products.
- Participate in a waste exchange.

Here are 14 increasingly popular actions that are reducing waste and saving money for many institutions and businesses. The list of vendors is provided to aid you in your information-gathering efforts only and does not constitute endorsement by the Minnesota Office of Environmental Assistance (OEA).

### ■ Use solar-powered calculators and battery rechargers.

Solar-powered calculators eliminate the need for batteries. Solar-powered rechargers use sunlight, not generated electricity, to recharge batteries.

### ■ Use refillable pens, pencils and tape dispensers.

Americans throw out 1.6 billion single-use pens each year. Refillable pens and mechanical pencils often don't cost more over the long term, and their use prevents unnecessary waste.

If your company must use wooden pencils, hand-powered sharpeners are often as fast as electric sharpeners. Refillable tape dispensers eliminate the need for single-use ones.

### ■ Use reusable calendars.

Hard-surfaced, perpetual calendars can be wiped clean and reused year after year. By using water-based markers, you can avoid petroleum-based markers.

### ■ Use two-way envelopes.

If your office conducts a large amount of regular correspondence with other facilities, use two-way envelopes. These envelopes can be sent back and forth dozens of times before being recycled.

For billing, use convenient send-and-return envelopes. They look like standard envelopes, but after a slight twist they can be used again. For more information on send-and-return envelopes contact Tension Envelope at 800-966-5452. **Note:** If your envelopes need windows, order them without plastic.

### ■ Reuse file folders and binders.

Applying new labels extends the usefulness of file folders and binders. Unused mailing labels work, but if you plan to buy labels, get those with gum instead of adhesive. Gum labels don't contaminate recyclable paper.

### ■ Refurbish office equipment.

Many agencies and business are reusing office furniture instead of buying new furniture. Sometimes in-house maintenance people recondition the furniture; sometimes businesses that specialize in office furniture



repair-do the job. Look in the Yellow Pages under "Furniture - Repair and Refinishing - Office." Computers are also repairable. Businesses that recondition and sell them are now flourishing.

#### ■ Use bulletin boards.

Rather than routing memos, post information on bulletin boards or use computer networks for electronic mail.

#### ■ Change to cloth towel dispensers.

Changing to modern cotton towel dispensers in place of paper towels reduces solid waste, makes for tidier restrooms and can save money.

For more information: Look in the Yellow Pages under "Uniform Supply Services."

#### ■ Reuse printer toner and ribbon cartridges.

Remanufactured cartridges can cut these costs 50 percent yearly. Some remanufacturers use higher-quality replacement parts than those that are originally installed.

For more information: Look in the Yellow Pages under "Computer Supplies."

Questions to ask your vendor are:

- Do you refill or remanufacture cartridges?
- If you remanufacture, what parts do you replace?
- What do you do with the old parts and toner?
- Do you service both ribbon and toner cartridges or do you send one out?
- How long have you been in business?
- What does your guarantee cover?

#### ■ Change to fluorescent exit sign bulbs.

One fluorescent exit sign bulb outlives six to eight incandescent bulbs, creates less waste and requires dramatically less labor to maintain. In addition, fluorescent bulbs use a fourth of the electricity to produce the same amount of light. Both straight tube (mini-bi pin) and U-tube (PL) are available in convenient exit sign conversion kits. This measure

can result in significant cost savings and garbage reduction.

For more information: Look in the Yellow Pages under "Lighting Distributors." Suppliers that have contacted the OEA are:

Energy Saving Devices, St. Paul, 612-222-0849

Hetherington Industries, 215-949-3888

Progressive Technology in Lighting, 616-396-2556

Rising Sun, Inc., 303-927-8051

Compact fluorescent indoor and flood lights can also give excellent source reduction and cost savings. Use caution, however; some are sold with the ballast and bulb glued together as one unit. When the bulb burns out the entire assembly must be thrown out. To avoid this waste and expense, make sure the bulbs can be replaced.

Stay with tested, well-made, name-brand products. Inferior compact fluorescent lights with poor performance are on now the market.

Note: The Legislature amended Minn. Stat. 1990, Sect. 16B.126, in May 1991 to require fluorescent exit sign bulbs in all internally lit exit signs by Jan. 1, 1994.

#### ■ Convert four-bulb fluorescent fixtures to high efficiency two-bulb fixtures.

By replacing standard four tube-two ballast fixtures with rare-earth phosphor two-tube-one-electronic-ballast retrofits, Cable News Network reduced lighting costs by 63 percent. The modern tube produces 17 percent more light than the old. The new ballast is silent, eliminates any perceptible flicker and uses 75 percent less power. In addition, only half the waste is produced to fulfill the same lighting need.

Note: Old but still functional bulbs can be given away to citizens for reuse in their shops or garages. Itasca County Courthouse has such a reuse program for its lighting upgrade project (218-626-2857).

For more information: Look in the Yellow Pages under "Lighting Systems." Retrofit companies that have contacted the OEA are:

3M Lighting Services, St. Paul, 612-487-9917

Rising Sun, Inc., 303-927-8051

#### ■ Use reusable cafeteria dishware.

Reusable dishes are often cost-effective, even when dishwasher installation expense is included. A decrease in refuse-hauling cost can accompany the change because it can result in such a notable reduction of waste.

#### ■ Use least-waste milk containers.

Cardboard milk cartons are made of plastic coated paperboard and are not readily recyclable. In a landfill, they take up approximately 10 percent of their original volume and take decades to decompose.

If a dishwasher is in place to wash the reusable cups that go with serving milk from bulk dispensers, the change to bulk milk reduces a major component of cafeteria waste. It can also save money and teach reuse.

If a change to bulk milk is not possible, a change to reusable milk containers is effective. Reusable gallon and half-gallon milk containers are available in much of Minnesota, and pilot programs are under way to test reusable eight-ounce (single-serving) containers.

If bulk or reusable containers are not an option, plastic pouches are next best. Plastic pouches take up 1/25 the volume of paper cartons in a landfill and are made of LDPE, a relatively recyclable plastic.

For more information: Contact milk distributors in your area who carry these products. The OEA was contacted by the following dairies.

Kemp's Dairy, 800-356-1326, has information on bulk and pouch milk.

Schroeder Milk, 612-487-1471, has information on

reusable half-gallon and gallon containers.

Sauk Centre Cooperative Creamery, 612-352-6513, has information on reusable eight-ounce containers.

#### ■ Use reusable forced-air filters.

By installing completely reusable aluminum forced-air filters in Itasca County garages, the county saves approximately \$4,000 and eliminates more than 53 cubic yards of waste each year. Installing partially reusable forced-air filters in the county courthouse saves approximately \$800 and eliminates 26 cubic yards of waste each year.

For more information: Reusable filter suppliers that have contacted the OEA are:

Scan Air Filter, Inc., 612-825-2020

Twin City Filter Service, 612-722-9391

#### ■ Eliminate single-use cups.

Many offices and businesses have eliminated single-use cups in favor of employees using reusable cups. Progressive coffee shops are charging five cents less to customers who bring reusable cups.

#### ■ Reuse single-sided paper.

Use a box next to the photocopier for stacking single-sided photocopy paper "waste." With the simple use of a paper cutter and binding glue, this waste paper can be made into note pads. One company that sells binding glue is Merritt Products Co., 216-352-0697. The glue is not absolutely necessary. Employees can stack quarter sheets beside their phones for note paper.

Note: Print on both sides of a sheet of paper when appropriate.

#### ■ Eliminate aerosol spray cans.

Significant cost savings and waste reduction can result when businesses use concentrates and mix them in reusable pump-spray bottles. The Sawmill Inn, Grand Rapids, eliminated aerosol cans in favor

of refillable pump-sprays and found the change reduced waste and saved money.

## **Spread the word**

As your organization implements these or any other source-reduction activities, please contact the OEA so that the information can be made available to others.

## **For more information**

For further information on source reduction, call the Office of Environmental Assistance Clearinghouse at 612-215-0232, or 800-877-6300.

For technical assistance on source reduction for businesses or to give information on how your source reduction program is working, call Kenneth Brown, Minnesota Office of Environmental Assistance, 612-215-0241 or 800-657-3843 toll-free.

## Appendix J: Employee Incentive Programs

Any successful employee incentive program should reward with food, fun, fortune, or fame:

- Incorporate waste reduction accomplishments into employee performance evaluations.
- Publish special ads in the local newspaper telling the public how much waste you are keeping out of the local landfill. Give employees with outstanding ideas recognition in the "ad". This could take the form of them holding a certificate for their idea.
- Post a monthly "Waste Reduction Employee of the Month" in an area that is frequented by employees, like the lunch room.
- Give gift certificates for local restaurants, stores, gas stations to employees that suggest waste saving ideas. You might want to post an employee suggestion box.
- Get each area team involved in a monthly contest for best waste separation. Pick a day, unannounced, that someone will go around and check each area for quality separation. The area with the best separation gets rewarded with something like free pizza for lunch.
- Return pop cans collected at the facility for their scrap value, if possible. Keep revenue from the cans in a special fund for a party or something else that the employees want.

You could also award revenue or a percentage of revenue from a product like your recycled scrap white vinyl to an employee "party account."

- Award T-shirts printed with the company logo and some type of waste reduction slogan on it. There are companies that make T-shirts from 100% recycled plastic pop bottles. I can get you the names if you're interested in this type of novelty promotion.

From: Minnesota Waste Wise  
30 East 7th Street, Suite 1700  
St. Paul, MN 55101

# Waste Reduction Makes Headlines at Hibbing Newspaper Office

Over the past year, The Hibbing Daily Tribune has sought ways to improve their waste management practices. By implementing a few simple activities and encouraging employees along the way, this newspaper dramatically reduced their waste, saving over \$8,400 annually.

The newspaper began by developing a waste reduction team. A representative was chosen from each department to assist in the design of a waste reduction program. These representatives helped generate some simple activities that paid off big.

The newspaper reprogrammed their fax machine so that it would not automatically generate cover sheets. Surprisingly enough, this simple reprogramming prevents the use of approximately 9,100 pages of paper and will save the company nearly \$250 per year.

The Daily Tribune began

reusing their layout sheets. Rather than simply discarding the sheets after one use, the newspaper is reusing them as many as eleven times. This activity saves the company time and money by avoiding the cost of re-printing.

In addition to source reduction activities, the newspaper implemented a comprehensive recycling program.

The Daily Tribune recycles excess newsprint and office paper, film negatives, and aluminum plates. Prior to implementing the waste reduction program, the material was simply added to the overall cost of disposal. Today, the material generates revenue rather than expense. In the first week alone, the facility recycled 3,300 lbs. of material and earned \$100 for their efforts.

In order for these efforts to succeed, the newspaper realized it would need the support of the employees. The Daily Tribune took steps to increase employee participation. First, a graph which measures the amount of waste employees save is posted and continually updated. This allows employees to see the benefits of their waste reduction efforts.

Additionally, the newspaper has a suggestion box for ideas to improve the

From MNNV  
NEWSLETTER

company's waste management practices. When these ideas are used, the employee is rewarded with a gift certificate for dinner at a local restaurant.

The newspaper is now earning revenue from waste material that was once an expense. The program saves the Daily Tribune \$700 per month in disposal costs alone; proving employee support for waste reduction results in substantial cost savings.



# Appendix K: OEA Matching Grant Information

## Minnesota Office of Environmental Assistance Environmental Assistance Grants

### **Purpose of the program:**

The Minnesota Office of Environmental Assistance (OEA) and its predecessors have been offering grants to local governments, businesses, non-profits, schools, and community groups since 1984 for the improvement of waste related practices. In 1996 the OEA was given the authority to create a new broad-based grant program for a variety of environmental assistance activities. This new grant program replaces most existing OEA grant programs.

The purpose of these environmental assistance grants is to help organizations move toward more sustainable practices, with an emphasis on pollution prevention, recycling and environmental education.

### **Primary users of the program:**

The OEA will work with local units of government, private and non-profit organizations and businesses, educational institutions and community groups. Grant funds are available for the development and/or implementation of specific project activities not already underway within organizations. State agencies are not eligible to apply for OEA grants.

### **Assistance and resources available:**

Each year the OEA has approximately \$1.5 million available for grants. Each year, on July 1, the OEA will issue a Request for Proposal (RFP) describing funding priorities and the amount available for environmental assistance grants. The OEA will also list available grants on its web site at <http://www.moea.state.mn.us>. In addition, OEA staff will be available to assist potential applicants in developing projects and completing applications.

### **Program priorities:**

Currently the program focuses on four major goals consistent with the strategic plan and goals of the OEA.

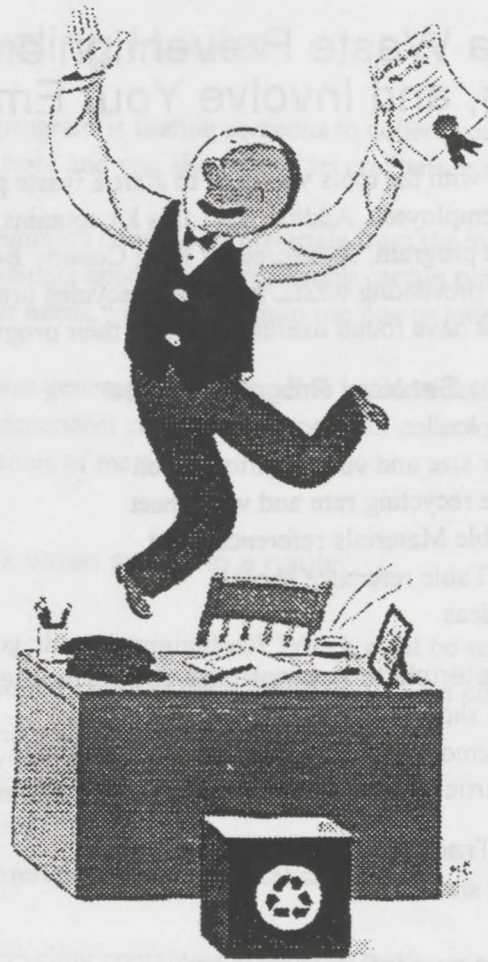
1. Assist those responsible for the generation and management of waste to reduce the amount of waste generated and ensure waste is reduced, recycled or managed appropriately according to the hierarchy.
2. Help Minnesota's businesses improve their economic efficiency through environmentally sound practices.
3. Promote environmentally sustainable attitudes and behaviors through education and information.
4. Promote sustainable, community-based solutions to environmental problems.

Specific priorities will be identified within the Request for Proposal, issued each July.

### **For more information contact:**

Nancy Skuta - (612) 215-0249  
[nancy.skuta@moea.state.mn.us](mailto:nancy.skuta@moea.state.mn.us)  
Erin Barnes-Driscoll - (612) 215-0211  
[erin.driscoll@moea.state.mn.us](mailto:erin.driscoll@moea.state.mn.us)  
<http://www.moea.state.mn.us>

January 1997



# Green Works

## Waste Reduction and Recycling Communications Kit

August 1996

 King County Solid Waste Division  
Green Works Business Recycling Program  
400 Yesler Way, Room 600  
Seattle, WA 98104  
(206) 296-8800

## How to Start a Waste Prevention and Recycling Program, Keep it Going, and Involve Your Employees

This kit will provide you with the tools you need to start a waste prevention and recycling program, keep it going strong and involve your employees. Additionally, this kit contains a number of items to assist you in joining the Green Works recognition program, sponsored by King County. Become an official "business in the Green" and be recognized for recycling, preventing waste, and using recycled products. This kit also provides samples of materials other companies have found useful in making their programs successful. Below is a list of those items:

### Section 1. Materials to Get Your Program Started

- A. Finding a recycling hauler
- B. Recycling container size and volume information
- C. Method to calculate recycling rate and worksheet
- D. Density of Recyclable Materials reference sheet
- E. Conversion Factor Table reference sheet
- F. Waste prevention ideas

### Section 2. Kick-Off Materials to Promote the Program Internally

- A. Kick-off suggestion sheet
- B. Sample Kick-off Memo 1 and 2 from management to employees
- C. Sample newsletter articles detailing a new recycling program

### Section 3. Employee Training Materials

- A. Training suggestion sheet
- B. Tips of the week
- C. Sample recycling program information sheet
- D. Clip Art Materials

### Section 4. Motivational Materials to Keep Employees Participating

- A. Keeping Employees Motivated and Enthusiastic
- B. Sample Newsletter Article 1 (Becoming a Green Works member)
- B. Sample Newsletter Article 2 (Becoming a Distinguished Green Works member)
- C. Sample newsletter articles from Green Works businesses

### Section 5. Publicity Materials to Promote the Program Externally

- A. Sample News Release 1
- B. Sample News Release 2 (Distinguished member)
- C. Samples of logos available to use on promotional materials

### Section 6. General Materials

- A. Green Works application booklet
- B. Guide to recycling services
- C. Green Works membership directory
- D. Guide to buying recycled products
- E. Order form for supplemental materials





## 1 A. Finding a Recycling Hauler

The first step to starting a recycling program is finding someone to collect your recyclables. There are many different recycling haulers to choose from and you should call several before making a decision

As a rule, haulers need to collect a minimum quantity of materials from the locations they serve to make it a feasible financial transaction. Some haulers specialize in collecting certain types of materials; others collect a wide range of materials. Depending on your needs, you may wish to use one or more haulers.

If the volume of materials your business generates is too small to be considered for an account with a recycling hauler, another option is to hire an independent collector. Independent collectors often provide collection service to businesses with relatively small quantities of materials.

The following are questions to ask when selecting a hauler:

- Which materials do you collect?
- Which recyclables can be mixed together (commingled)? Which must be separated?
- What is the minimum volume or weight required for our company to get collection service?
- How frequently will you pick up the materials?
- Do you provide a dumpster or other outside collection containers?
- Is there a fee for this dumpster or container?
- Do you provide bins for storing materials? Is there a rental charge for the storage bins?
- Do you provide in-door deskside recycling containers? If so, are they labeled with the materials accepted in your collection program?
- Do you offer free collection?
- What kinds of contaminants should be avoided?
- Do you provide signs and other educational materials?
- Can you provide references?
- Would you provide us with data on how much material we recycle? If so, how frequently would you provide us with this information?



To order a "Guide to Recycling Services" in King County for your locale, please call 296-8800.

Example 2			
Garbage			
1 garage	1 cubic	75%	1 bin/month
1 cubic	1 cubic	75%	24 cubic yards/month

## 1 B. Container Size

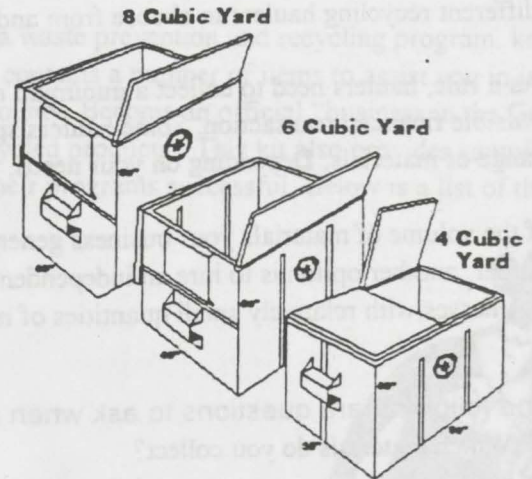
Use this information to help you determine the volume of your collection container.

All volumes are expressed in cubic yards

### Front Loaders

This is usually a stationary dumpster which must be approached by the garbage truck from the front.

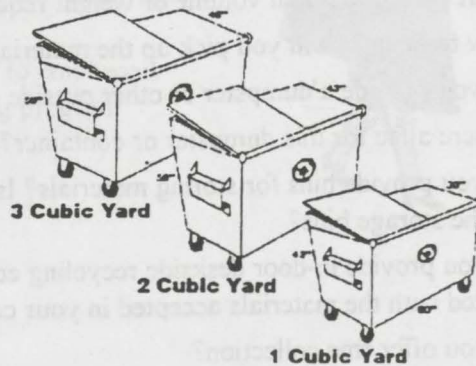
Length	Width	Height	Volume
6' 8"	2' 5"	3' 9"	1 cubic yard
6' 8"	3' 6"	4' 5"	2 cubic yards
6' 8"	4' 2"	4' 9"	3 cubic yards
6' 8"	4' 9"	5' 5"	4 cubic yards
6' 8"	5' 6"	5' 0"	6 cubic yards
6' 8"	5' 6"	6' 8"	8 cubic yards



### Dumpsters

These containers usually have wheels.

Length	Width	Height	Volume
8'	4' 8"	3' 10"	4 cubic yards
8'	5' 8"	4' 7"	6 cubic yards
8'	7' 0"	5' 6"	8 cubic yards
8'	7' 0"	7' 0"	10 cubic yards



### Toters

These containers are usually 90 gallons.

Length	Width	Height	Volume
30.5"	29.5"	39"	0.45 cubic yards



# 1 C. Method to Calculate Recycling Rate

1. Record the amount of material in each container before it is picked up.
2. Convert those estimations into cubic yards, pounds, or gallons (whichever is easiest to estimate) and calculate what percentage is recycled. Please refer to Sections 1 D and 1 E for density and conversion rates.
3. Use the collected data to calculate the approximate percentage.

Example: these numbers are hypothetical numbers for one week of recycling using gallons for estimate.

2 - 90 gallon containers of glass	180 gallons glass
4 - 90 gallon containers of plastic	360 gallons plastic
1 - 1 cubic yard dumpster of cardboard	206 gallons cardboard
<u>1 - 1 cubic yard dumpster of compostables</u>	<u>206 gallons compost</u>
<b>Total recycling</b>	<b>952 gallons recyclables</b>

<u>3/4 - 4 cubic yard dumpster of garbage</u>	<u>618 gallons garbage</u>
<b>Total garbage and recycling</b>	<b>1570 gallons</b>

**Recycling Percentage: 62 percent**  
*( 952 gallons recyclables ÷ 1570 gallons garbage x 100 = 62 percent )*

## Recycling / Disposal Tally Sheet

To determine how much your company is recycling, track your garbage and your recyclables with this tally sheet. Make sure that the volumes of garbage and of recyclables are in the same units of measurement, or easily convertible. A handy tip to remember is that an average of 205 gallons equals 1 cubic yard; please refer to Sections 1 D and 1 E for more specific information regarding densities and conversion factors for recyclable materials.

First, multiply the number of containers	by the container volume	Then, multiply by the percent full of each (total)	Finally, multiply by the number of pickups/ month	Total
Example 1: Recycling				
1 recycling container	4 cubic yards	50%	4 times/month	8 cubic yards/month

1 recycling containers x 4 cubic yds x 50% x 4 times/month = 8 cubic yards/month

Example 2: Garbage				
1 garbage container	8 cubic yards	75%	4 times/month	24 cubic yards/month

1 garbage container x 8 cubic yds x 75% x 4 times/month = 24 cubic yards/month



## 1 D. Density of Recyclable Materials

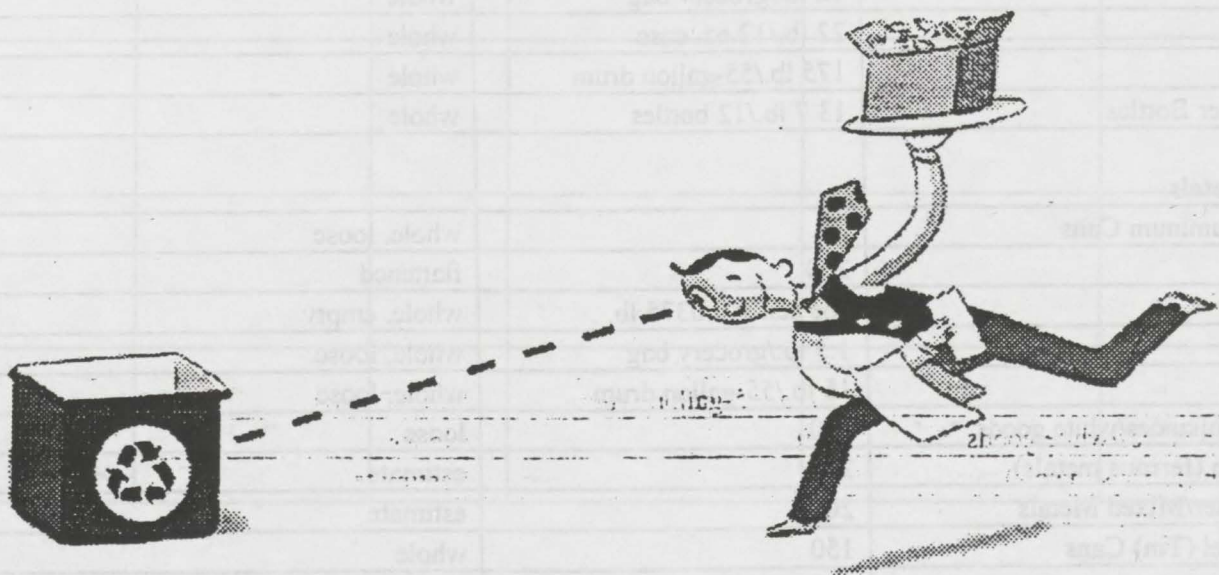
The density figures provided here are useful for estimating the weight and volume of materials generated at a business. Variations from these figures are common, as the density depends on a number of factors. Since the density of materials can be extremely variable, these figures in the table should be used as an average to determine a business approximate recycling rate.

Materials	Density - lb./cu. yd.	Comments
<b>Paper</b>		
Cardboard (OCC)	150	loose, flattened
	300	manually compacted
	700	baled
	50 boxes = 1 cu. yd.	
Computer Paper	550	loose
	1100	compacted
Milk Cartons	30	loose
Mixed Paper	150	loose
Newspaper	425	loose
	700	compacted
-	12" stack = 35 lb.	loose
Office Paper	350	loose
	one ream = 5 lb.	20# bond: 8.5" x 11"
	one case = 50 lb.	boxed
	800	compacted
Magazines	250	estimate
<b>Glass</b>		
All Colors	550	whole
	16 lb./grocery bag	whole
	22 lb./12 oz. case	whole
	175 lb./55-gallon drum	whole
Beer Bottles	13.7 lb./12 bottles	whole
<b>Metals</b>		
Aluminum Cans	70	whole, loose
	200	flattened
	one can = 0.0375 lb.	whole, empty
	1.5 lb./grocery bag	whole, loose
	16 lb./55-gallon drum	whole, loose
Appliances/white goods	200	loose
Iron (ferrous metals)	200	estimate
Other/Mixed Metals	200	estimate
Steel (Tin) Cans	150	whole
	850	flattened

# 1 D. Density of Recyclable Materials

continued

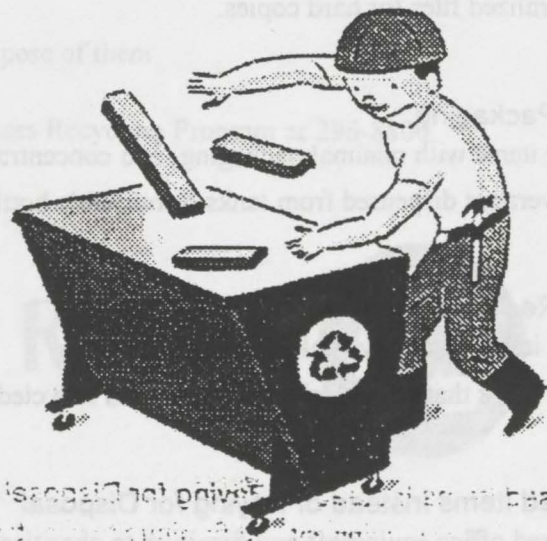
Materials	Density - lb./cu. yd.	Comments
<b>Plastics</b>		
Films (packaging)	25	estimate
	680	baled
HDPE (#2, milk, juice)	25	whole, loose
	900	whole, baled
PET (#1, soda)	35	whole, loose
	eight 2-liter bottles = 1 lb.	whole, loose
	500	whole, baled
Polystyrene	20	estimate
Mixed Plastics	50	whole, loose
<b>Other</b>		
Construction (CDL)	540	general
Food Wastes	425	not compacted
Grease	1475 lb./55-gallon drum	solid and liquid
Hazardous Waste	1500	assumes liquids
Oil	7 lb./gallon	
Textiles	240	loose
Tires/Other Rubber	200	estimate
	20 lb./tire	100 tires/1 ton
Wood Wastes	300	pallets/lumber
Yard Waste	350	depends on type
Commingled Recyclables	180	containers only (cans and bottles)



# 1 E. Conversion Factor Table

The conversion factors listed below may help you calculate gross weight from gross volume. Figures may vary depending on the specific processing used in your program, handling situations, and on how tightly you pack your materials.

Given Measure:	Converted to:
1 Liter	0.26 Gallons
1 Gallon	3.8 Liters; 0.0049 cu. yd.
Cubic foot	1,728 cubic inches
Cubic yard	27 cubic feet; 202 Gallons
Mixed Waste (loose)	200 lb./cu. yd. (average)
Mixed Waste (compacted)	800 lb./cu. yd. (average)
5.5 gallons	0.03 cu. yd.
13 gallons	0.06 cu. yd.
24 gallons	0.12 cu. yd.
30 gallons	0.15 cu. yd.
33 gallons	0.16 cu. yd.
35 gallons	0.17 cu. yd.
39 gallons	0.19 cu. yd.
90 gallons	0.45 cu. yd.
Computer paper box	0.03 cu. yd.
Copy paper box	0.036 cu. yd.
Small paper recycling box	1.04 cu. ft.
55-gallon recycling barrel	0.28 cu. yd.
Pickup truck bed	3.2 cu. yd.
Small flat bed truck	4.4 cu. yd.



## 1 F. Waste Prevention Ideas

The three aspects of the Green Works program are waste prevention, recycling, and buying recycled products. This checklist is designed to help you identify activities that you can do every day to reduce the amount of waste your company produces.

### Re-Use Materials

- Re-use single sided pages for draft and note paper.
- Establish a draft paper tray near laser printers and copy machines so single sided sheets can be reused.
- Re-use office supplies such as file folders, envelopes, boxes and containers.
- Re-use cardboard boxes.
- Re-use materials such as newspaper, tissue, polystyrene peanuts and foam pads from incoming shipments as alternatives to buying new packing material.
- Circulate or post memos instead of making copies for everyone.
- Use a mulching mower which eliminates the need to dispose of grass clippings.
- Use outdated letterhead and forms for in-house memos.



### Use Durable and Refillable Products

- Use durable dishware in employee kitchen or cafeteria.
- Use cloth items instead of paper towels, tablecloths, napkins and hand towels.
- Request that deliveries be shipped in returnable containers.
- Use rechargeable laser printer and copier toner cartridges.
- Use refillable pens and pencils.
- Instead of using a cover sheet for faxes, use a rubber stamp especially made for fax transmittal.
- Use rechargeable batteries, or solar powered electronics.
- Use centralized files for hard copies.

### Use Less Packaging

- Purchase items with minimal packaging, in a concentrated form and/or in bulk.
- Offer beverages dispensed from tanks or refillable bottles instead of individual packages.

### Purchase Recyclable Products

- Purchase items with recyclable packaging.
- Purchase items that are recyclable and contain recycled material.

### Donate Used Items Instead of Paying for Disposal

- Donate used office equipment and furniture to charities, material exchanges or schools.





## 2 A. Kick-Off Suggestions

Employee participation is the key to all successful recycling programs. So, it is important that your employees are excited and eager to participate in your new program. Many businesses have found that holding a kick-off activity generates the enthusiasm needed to ensure a successful program. Several suggestions for developing a kick-off activity are listed below. You can implement one, many, or all of these ideas to help make the introduction of your new recycling program the best it can be.

- **Create a Green Team** – a team of employees interested in being involved in the program. Members of this team can lead training sessions and help with program implementation. They will also be a good source of information about what works and what needs to be changed in the program.
- **Write a memo to all employees introducing the program.** A sample memo is included in this packet. Include an article explaining the program in your company newsletter. A sample newsletter article is also included in this packet.
- **Create a name or slogan for the program.** This consistency will keep the program on employees' minds.
- **Establish an environmental policy or mission statement** committing your company to recycling and preventing waste.
- **Create and display promotional posters in high-traffic areas.**
- **Create contests or incentives, such as:**
  - Holding an interdepartmental recycling challenge to see which department recycles best.
  - Holding an interdepartmental waste prevention challenge to encourage new ideas for preventing waste.
- **Throw a party to celebrate the start of the program.**
- **Post lists of recyclable items and how to properly dispose of them.**

For more ideas, call the King County Green Works Business Recycling Program at 296-8800.

Reduce  then Recycle 

## 2 B. Sample Kick-Off Memorandum 1

### MEMORANDUM

Date: Month, Day, Year  
To: All Company X Employees  
From: Person, Title  
Re: Recycling Program

Studies show that each office worker throws away an average of a half-pound of recyclable paper every day. That's the equivalent of X tons a year from our company alone. We need to put that paper to better use. To this end, we have started a recycling program. By recycling, we'll lower our garbage disposal costs, reduce the amount of waste we send to the landfill, and can feel good about our company's environmental efforts.

Participation in our program will require only small changes in your daily habits. You'll be given a container for storing (white, mixed, computer) paper. When your container is full, simply empty the contents into the floor container nearest to your desk. The locations of the floor containers will be: X location. Additionally, recycling containers for aluminum cans, tin cans, plastic bottles, and glass bottles and jars are located in the X location. Simply rinse out these recyclables and place them in the appropriate recycling containers.

Next to X  
Rooms X, Y

Thanks for participating. If you have any questions about the program, please contact Person X at 555-5555.

## 2 B. Sample Kick-Off Memorandum 2

### MEMORANDUM

Date: Month, Day, Year  
To: All Company X Employees  
From: Person, Title  
Re: Green Works Business Recycling Program

Everyone at Company X has done a great job of recycling, which has helped us reduce the amount of garbage we produce by X percent. I believe that we can recycle and reduce even more waste and become eligible to join King County's Green Works Business Recycling program.

By becoming a *Green Works Business in the Green*, we will join companies like Microsoft, Nintendo, and Larry's Markets as a model for recycling in our Puget Sound region. We will be recognized in local media spots for our commitment and efforts.

Currently, we recycle X percent of our waste, buy X number of recycled products, and reduce waste in a variety of innovative ways, such as.... To qualify as a Green Works business, we must recycle 40 percent of our waste, purchase at least three recycled products, and implement a minimum of three waste prevention strategies.

Over the next few months, Company X will strive to meet these goals. We are encouraging all staff to learn more about our current recycling program, and contact Person X with any questions or suggestions to help us reach our goal.

Thanks to everyone for participating. We hope to be a *Business in the Green* soon.

## 2 C. Sample Kick-Off Newsletter Article

### Every Little Bit Helps

Over the past few months, everyone at Company X has done a fantastic job of recycling and has helped us reduce the amount of garbage we produce by X percent.

We have decided to make joining King County's Green Works Program one of our company goals. Green Works assists businesses with their recycling and waste prevention efforts and provides recognition to businesses and employees for their hard work. Not only will our recycling program improve even more, we will also be recognized as a business that is concerned about our region's resources.

To become a "Business in the Green", we need to recycle at least 40 percent of our total waste, purchase at least three recycled products and practice at least three waste prevention strategies. Once we reach these goals, we will receive:

- A certificate signed by the County Executive and window decal;
- Mention in a County-wide recycling newsletter;
- Inclusion in public relations and promotional activities, which may include print ads in local publications and promotional spots on local radio programs;

We are not too far from that goal right now, so that's why every little bit helps. If you are interested in helping us plan ways to improve our waste prevention and recycling program, contact Person X at 555-5555.

If everyone does their part, Company X will soon be a Business in the Green.

## 2 C. Green Team News Articles

### Green Team Formed to Help Improve Recycling Effort at SPI

*December 9th, 1994, Bellevue*

A committee formed to help Software Production, Inc. better recycle started work on a comprehensive program that in the end was hoped to raise the level of recycled waste to better than 75%.

"The Green Team" started meeting in December 1994. Composed of Jim Gibbons, Grant Kenn, Gabrielle Wilkerson, Richard Williams, and Dan McCloy, the team started out by composing a mission statement and goals.

The mission statement is as follows: *SPI is dedicated to reducing waste and reusing all possible materials through a simple and cost effective recycling program, providing for an ecologically conscious and responsible organization that is committed to the preservation of the environment.*

The goals set form by the committee are as follows:

- To reduce overall costs

- To become "Green Works Recognized" (short term)
- To become "Distinguished Business in Green Works" (long term)
- To develop a program within 90 days

Two of the four goals have been met at this time, the cost and implementation goals, while the application for Green Works recognition must wait until the program has run 90 days.

The long term goal will take more diligent work from the committee and SPI employees. A list of what is needed for "Distinguished Business in the Green" will be printed in later newsletters.

In March, the team lost a member when Dan McCloy resigned to pursue other job interests. Bruce Clifton was asked to join as a representative from warehouse #2.

###

### SPI Takes Steps to Help Environment, Starts New Recycling Program

*March 1, 1994, Bellevue*

On March 1st, Software Production took a large step towards saving the environment by implementing a comprehensive recycling program.

At the time of the implementation, SPI was only recycling cardboard and broken pallets. While this effort equaled 50% of generated waste recycled, it was not nearly enough.

A committee was formed in December 1994 to look into more items and better ways to recycle. The committee met every Friday for three months in an effort to make the implementation as easy as possible.

The "Green Team" as the committee is called started with a mission statement and goals. The most paramount was to have a program started in 90 days. With the March 1st start up date, this goal was met.

*continued on next page*

## SPI Takes Steps to Help Environment, Starts New Recycling Program

*continued*

Commercial Waste Reduction & Recycling Company (CWRR) was the vendor selected to help us with this task. They provide a simple co-mingle program where all proscribed items go into one bin located at all desks, workstations and waste generating equipment in the building.

Large bins were provided outside building #1 and warehouse #2 by CWRR along with internal cardboard bins for offices. The production area was provided with specially marked garbage cans for recycling.

The office bins are emptied three times a week by the janitorial service and production areas leave added the dumping of the recycle bins to their normal end of the shift routine clean ups.

###

### 3 A. Training Suggestions

In order to have a successful workplace recycling program, employees should be knowledgeable about recycling. They should be provided with information about what can and cannot be recycled and how to properly dispose of items. Also, in order to get employees motivated about the program, it is important they feel a valuable part of maintaining the program. The following suggestions are designed to meet those needs. Below you will find tips for training employees in the art of recycling and in the basics of the Green Works program.

- **Hold a casual and fun, but mandatory, meeting for all employees.** Make sure to ask for input from employees and to answer questions. Your employees will become more involved in the program if they are asked to make suggestions and contributions to the program.
- **Give an employee quiz** to find out how much they know about recycling and waste prevention. Give a prize to the most knowledgeable employee.
- **Ask Green Works staff to assist with the training session.** A slide presentation and staff talks are available through the Green Works program.
- **Ask your recycler to assist with the training.** Recyclers can give information that is not available elsewhere and are very helpful in training sessions.
- **Post, e-mail, or circulate both a waste prevention checklist and a buying recycled checklist.**
- **Post recycling and waste prevention "Tips of the Week"** to remind employees about the program. Tips and suggestions on ways to post them are included in this kit.
- **Include information about your company's waste prevention and recycling program** in employee orientation training materials (i.e., training sessions, videos and/or manuals).

For more ideas, call the King County Green Works Business Recycling Program at 296-8800.



## 3 B. Tips Of The Week

Tips of the week are a great way to keep employee motivation high. They remind everyone in the company to be aware of their actions. Tips of the week can be used in a number of ways, such as posting one in a copy room or kitchen, or listing them in a staff newsletter. Some companies use email to distribute tips, while others have put tips in paycheck envelopes. Be creative - there are many ways to distribute messages.

### Fax Facts

Condense fax cover sheets to one half page, or better yet, use a fax stickie.

### Waste Free Wrapping

Ream wrappers aren't recyclable - either throw them away or use them for stuffing in packages.

### Take a Memo, Please

Outdated letterhead and envelopes can be used for internal memos and scratch paper.

### Wait a Minute Mr. Postman

Envelopes can be easily reused by putting new labels over the address.

### To Duplex Is Not Complex

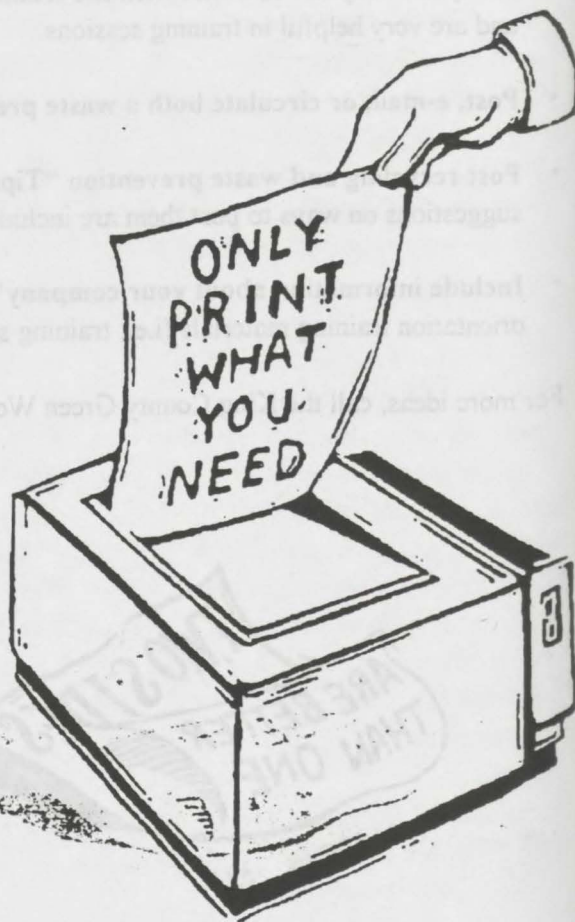
Make double-sided copies whenever possible.

### Once is Never Enough

Use durable cups - our office has a supply of ceramic mugs in the kitchen or bring in your own favorite cup instead of using disposable cups.

### Your "Trash" may be Your Co-Workers "Treasure"

To save resources and dollars, let others know if you have excess supplies, paper, etc. Or place unwanted items in the \_\_\_ box located in the \_\_\_.





### 3 C. Recycling Program Info Sheet for Employees

Dear Employees:

You probably already do some recycling at home. We're proud to announce that our company will soon start recycling too. We will also launch a waste prevention program to help us cut back on the amount of waste we generate in the first place.



Our waste prevention and recycling program will begin on:

We will be recycling the following materials:

**Most paper, including:**

Computer Paper	White Paper	Colored Paper
Fax Paper	Blueprints	Envelopes
Junk Mail	Newspapers	Unwaxed Cardboard
Window Envelopes	Post-its	Calendars
Magazines	Telephone Books	Books

Clean, empty aluminum beverage cans

Clean, empty plastic beverage containers

Clean, empty tin cans

Materials NOT Accepted:

Any of the materials listed above which are contaminated by food (for example: pizza or donut boxes, paper plates, plastic forks and plastic/styrofoam/paper food containers.)

Other materials that are not accepted include:

Food	Liquids	Facial Tissue
Light Bulbs/Tubes	Styrofoam	Glass Bottles
Ceramics	Paper Towels/Napkins	Kitchen Waste

If you have any questions, contact your recycling coordinator (name) at the following extension:

If you have suggestions, please tell your recycling coordinator.

Waste Prevention:

We will be taking the following steps to cut down on the amount of natural resources we use:

- 1.
- 2.
- 3.

## 4 A. Keeping Employees Motivated and Enthusiastic

Workplace recycling programs often start off well but die out after the initial enthusiasm is lost. The aim of this section is to suggest ways to keep employees motivated and enthusiastic about recycling. If this occurs, recycling will become second nature and your recycling program will continue to flourish. If employees know that they are doing a good job and that their efforts are appreciated, they'll keep the program going strong.

- Include recycling on staff meeting agendas. This will keep the program visible and give a regular reminder to employees to recycle. In addition, this will help with spotting and dealing with problems that arise.
- Hold spot garbage can audits, and give a prize to the person with the lowest level of recyclable items in their garbage can.
- Publicize your program to employees through the company newsletter. Sample newsletter articles are included in this kit.
- Organize a local waste prevention campaign or activity in your community. The excitement will rub off on your employees and your own recycling program will work better than ever.
- Regularly post recycling levels for employees to view.
- Label all recycling bins properly.
- Post signs above printers and copy machines reminding employees to recycle their unwanted copies and make double-sided copies.
- Print on recycled paper and display the recycled paper logo on all materials.
- Organize a competition with a neighborhood business to see who can recycle the most. Acknowledge the winner as the greenest of them all.
- Present an award for the Green Employee of the Month - the employee who has shown exemplary environmental behavior. The recipient should receive some kind of recognition, whether it is their name on a plaque a gift certificate to a local restaurant, or a day-off with pay.

For more ideas, call the King County Green Works Business Recycling Program at 296-8800.

## 4 B. Sample Newsletter Article 1

### Being Green Really Works

Thanks to your recycling efforts over the past few months we are proud to announce that Company X is now a member of King County Solid Waste Division's Green Works Business Recycling Program.

In striving to reach our goal of becoming a Green Works business, we have attained a X percent recycling rate. Not only are we recycling more, but we have also expanded our overall procurement program to include more recycled products.

As a member of Green Works, we received a certificate and decal proclaiming our recycling success. Stop by and see them posted at X location. We will be featured in the X date issue of *Recycling Works*, the Green Works newsletter.

Over the next few months, Company X will strive to attain the Distinguished level, and eventually become a Green Works Partner. Stay tuned for the latest news about our recycling program, or better yet, let us hear your suggestions for improving our program even more!

Congratulations and thanks to everyone at Company X, a *Business in the Green*. We couldn't have done it without you. Keep up the good work.

## Sample Newsletter Article 2

### A Step in the Right Direction

Thanks to the recycling and waste prevention habits of everyone here, Company X has been a successful Green Works Business in the Green since date. Now it's time to take the next step - becoming a Distinguished member.

To achieve Distinguished status, Company X must implement at least six waste prevention strategies, recycle at least 60 percent of its total waste and purchase a minimum of six recycled products. Right now, we are recycling X percent of our waste, purchasing X recycled products, and reducing waste in X number of ways.

The planning stage of this program is just getting underway. Anyone interested in helping develop strategies to achieve these goals should contact Person X. With your help, we can do even more to serve as a model for business recycling in the Puget Sound region.

Thanks again, you're all doing a great job!

## 4 C. Example Newsletter Articles

These are excerpts from Green Works members company in-house newsletters.  
Software Productions, Inc., King County

### Recycling Program Information Sheet

The Green Team is pleased to announce that a comprehensive recycling program is being implemented at Software Production. This information sheet provides the mission and goals of the team as well as details of the program.

Who is "The Green Team": The Green Team is your recycling "team". We represent the employees of Software Production and have developed a program of recycling that will both be easy to use and help out the environment. The team is composed of Jim Gibbons, Grant Kenn, Gabrielle Wilkerson, Richard Williams, and Dan McCloy.

*Mission Statement: SPI is dedicated to reducing waste and reusing all possible materials through a simple and cost effective recycling program, providing for an ecologically conscious and responsible organization that is committed to the preservation of the environment.*

Goals: The Green Team has the following short and long term goals.

- To reduce overall costs
- To become "Green Works Recognized" (short term)
- To become "Distinguished Business in Green Works" (Long term)
- To develop a program within 90 days

What is "Green Works": Green Works is funded by the King County Solid Waste Division and is a cooperative effort involving the Business and Industry Recycling Venture of the Greater Seattle Chamber of Commerce and the King County Suburban Cities. To be "Green Works Recognized" a company must:

- Develop 3 strategies to prevent waste
- Recycle 40% of its waste
- Buy 3 recycled products

As a *Business in the Green* our company will be publicized in local newspapers, business publications, consumer media and through special promotions. Membership in Green Works is recognition in a region that supports environmentally responsible businesses.

The Program: Commercial Waste Reduction & Recycling Company (CWRR) will be providing us with a simple commingle program. We will be given interior corrugated containers which will be placed alongside your current wastebasket. Larger containers will be provided around the production area and copiers etc.

On the back of this form we have provided a list of items that are accepted and a list of items that are not accepted. Please refer to this list if you have any confusion about what to recycle. Our Janitorial Service will be emptying these containers into containers provided by CWRR.

The Future: The Green Team will publish a quarterly recycle newsletter providing information on Green Works status, ideas, and general information. Your recycling suggestions should be placed in the suggestion box in HR. We appreciate and will review all suggestions. An employee that provides a suggestion that is implemented will be recognized in the newsletter and be given a "Green Team" t-shirt.

Thank you for your participation!

## 4 C. More Example Newsletter Articles

Group Health Cooperative, King County

### Recycling and the Cooperative

*Robert Schuweiler*

#### Group Health adopts 40% recycling goal

Did you know that Washington State adopted a recycling goal of 50 percent? And that the Coop has joined this effort with a 40 percent recycling goal for 1996?

On September 6, 1995, a team of Group Health employees and key suppliers met to review the past, present, and future of environmental issues at GHC. At this meeting, the team decided to make a system-wide effort to recycle 40 percent of the GHC waste stream in 1996. (GHC currently recycles 20 percent of its waste-stream)

To facilitate this effort, the Environmental Action '96 campaign is being designed to produce information in support of Group Health operations.

#### The Green Works Program

In addition, Group Health is supplementing this initiative by endorsing the Green Works Program. Green Works is a regional program

supported by King, Snohomish, and Kitsap Counties, as well as Seattle's Business and Recycling Venture. Green Works staff are eager to help start, assist or enhance recycling programs in the Group Health patient care system.

Once a facility reaches the 40 percent recycling position, they will become a certified Green Works member and will receive:

- A certificate and window decal signed by county executives.
- Mention in recycling newsletters with the county.
- Inclusion in public relations and promotional activities

If you would like to help Group Health meet or exceed its recycling goal, please contact:

King County: Lisa Sepanski, 296-4489  
Snohomish County: Rey Sundal, 388-6488  
Kitsap County: Vickie Bushnell, 895-4867  
Seattle: Matt Fikejs, 389-7304

5 A. Sample News Release 1

FOR IMMEDIATE RELEASE:  
Month Date, Year

FOR INFORMATION:  
First Name Last Name  
Phone Number

Company X Named Business In The Green

CITY, STATE -- King County Solid Waste Division's Green Works Program recently awarded Company X the status of *Business in the Green* because of the company's waste prevention and recycling efforts.

The award recognizes Company X for utilizing three waste prevention strategies. recycling over 40 percent of its waste and purchasing at least three recycled products.

In an effort to preserve natural resources, Company X implemented X, Y and Z strategies.

Company X estimates it will recycle X number of tons this year. For every ton of paper it recycles, Company X saves 17 trees, 7,000 gallons of clean water, 60 pounds of pollutants, 3 cubic yards of landfill space, 300 gallons of oil and enough energy to heat the average home for six months.

Company X first implemented its recycling program in Month Year.

Company X boilerplate.

###

S  
5 B. Sample News Release 2

FOR IMMEDIATE RELEASE:

Month Date, Year

FOR INFORMATION:

First Name Last Name

Phone Number

## Company X Distinguishes Self As Green Business

CITY, STATE -- Company X was recently awarded the status of *Distinguished Business in the Green* by King County Solid Waste Division's Green Works Program.

the  
The award honors the efforts of Company X in the areas of waste prevention, recycling, and the use of recycled products in the work place.

its  
Company X first became a Green Works member in Month Year. Since that time, the company has renewed its environmental commitment by increasing its recycling and waste prevention goals. Company X recycles over X percent of its waste, regularly purchases at least X number of recycled products and utilizes at least X number of strategies that decrease the amount of waste produced.

X  
ons of  
With every ton of paper it recycles, Company X saves the equivalent of 17 trees, 7,000 gallons of clean water, 60 pounds of pollutants, 3 cubic yards of landfill space, 300 gallons of oil and enough energy to heat the average home for six months.

###

## 6 E. Materials Available

Please check the boxes next to materials you would like to receive.

### Guides

- | Guides   | Description  |
|--|--|
| <input type="checkbox"/> Business Waste Reduction and Recycling Handbook                   | 35 page book explaining how to set up a recycling and waste reduction program.                     |
| <input type="checkbox"/> Recipes to Prevent Waste in the Restaurant                        | An 8 page guide full of cost-effective waste prevention strategies for the restaurant environment. |
| <input type="checkbox"/> Guides to "Waste Reduction and Recycling Services in King County" | City and material specific information on recycling service providers.                             |

### Fact Sheets and Booklets

- |  |  |
|--|--|
| <input type="checkbox"/> Waste Prevention:<br><i>In the Work Place</i>           | Fact Sheet highlighting simple ways to reduce waste in the work place.   |
| <input type="checkbox"/> Waste Prevention:<br><i>In the Real Estate Industry</i> | Fact Sheet that describes recycling and waste prevention strategies specific to the real estate industry (one page, double sided). |
| <input type="checkbox"/> Waste Prevention:<br><i>Vermicomposting</i>             | Booklet describing how to set up a vermicomposting system (16 pages).  |
| <input type="checkbox"/> Waste Prevention:<br><i>Bulk Dispensing Systems.</i>    | Booklet describing the costs and benefits of bulk product dispenser systems (7 pages)  |
| <input type="checkbox"/> Waste Prevention:<br><i>Re-usable Dry Cleaner Bags</i>  | Fact Sheet discussing the pros and cons of starting a durable dry cleaner bag program.   |
| <input type="checkbox"/> Waste Prevention:<br><i>Reusable Trolley Bags</i>       | Fact Sheet on Nordstrom's re-usable garment bag program.   |
| <input type="checkbox"/> Waste Prevention:<br><i>Materials Exchange</i>          | Fact Sheet on setting up a materials exchange within multi-tenant properties.  |
| <input type="checkbox"/> King County's<br><i>Recycling Works Newsletters</i>     | Select issues featuring information on recycling services, recycled products and articles on King County Green Works members       |

### Posters (limit 10 per customer while supplies last)

- |   |   |
|---|---|
| <input type="checkbox"/> "It's In Your Hands" | A 20" x 10" poster  |
| <input type="checkbox"/> "Choose Recycled"    | An 18" x 24" poster graphic illustration of an employee at desk with recycled products. |

### Camera Ready Art

- |   |   |
|---|---|
| <input type="checkbox"/> "Make Double Sided Copies" | Artwork to copy on sticky labels for use on copier machines and printers. |
|---|---|

### Videos

- |   |  |
|---|--|
| <input type="checkbox"/> "It All Adds Up" Video               | An 11 minute video featuring local Green Works members who have adopted cost-saving waste prevention strategies in their work place. Primarily for small businesses. |
| <input type="checkbox"/> Green Works Brochure and Application | Booklet explaining the Green Works recognition program, how to join and the types of recognition your company will receive.  |

### Materials Available for Purchase

- |   |
|---|
| <input type="checkbox"/> Video: "It All Adds Up" (11 minutes). \$10 per copy. |
|---|



## 6 E. Additional Materials Order Form and Evaluation Form

Please answer the following questions:

1. Did you find these materials useful?

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2. Are there any other materials that you would find useful?

---

---

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3. Do you have any other comments?

---

---

---

4. Do we have your permission to use your comments as a quote?

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---

---

Name: \_\_\_\_\_

Name of Business: \_\_\_\_\_

Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_

*Please mail back to King County Business Recycling Program at 400 Yesler Way, Room 600, Seattle, WA 98104*

## 6 E. Additional Materials Order Form and Evaluation Form

Please answer the following questions:

1. Did you find these materials useful?

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---

---

2. Are there any other materials that you would find useful?

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---

---

3. Do you have any other comments?

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4. Do we have your permission to use your comments as a quote?

---

---

---

Name: \_\_\_\_\_

Name of Business: \_\_\_\_\_

Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_

*Please mail back to King County Business Recycling Program at 400 Yesler Way, Room 600, Seattle, WA 98104*

# Glossary

## Important Terms and Agency Descriptions

Note: Several term definitions were taken from *Resourceful Waste Management: A Guide for Minnesota Metropolitan Area Businesses and Industries* (see Bibliography for further description).

**Audobon Composting Project** -- more commonly referred to as the Minnesota Source-Separated Composting Project. From February 1995 to September 1995, Select businesses in the Twin Cities Metropolitan Area participated in a composting pilot designed to determine the environmental impact, cost benefits, and the feasibility of such a program

**B.A.R.T.E.R. (Businesses Allied to Recycle Through Exchange and Reuse)** -- currently a program of the Minnesota Technical Assistance Program (MNTAP), B.A.R.T.E.R. was originally a part of MPIRG (Minnesota Public Interest Research Group). From 1987 to the mid-90s, BARTER examined the potential for waste reduction, reuse, and recycling in small businesses

**commingled recycling** -- collecting and storing recyclable materials together in the same container, as opposed to collecting and storing each material type separately; does not include collecting garbage and recyclables together

**composting** -- the microbial process that breaks down organic waste into a humus-like soil amendment

**contaminant** -- a substance that must be removed in the process of recycling material into usable products which can render otherwise recyclable materials unrecyclable (e.g., a single ceramic coffee mug can cause a ten-ton load of glass bottles to be rejected by the end market)

**cooperative recycling** -- a program in which small neighborhood businesses share recycling containers, contracts, administrative costs, and responsibilities in exchange for resource conservation, reduced costs, and enhanced public image

**corrugated cardboard** -- a sturdy three layer paperboard shaped into parallel and alternating ridges and grooves; used for most shipping boxes

**dumpster dive** -- colloquial term for waste survey--visual analysis of a business's waste stream designed to determine materials which can be reduced, reused, or recycled

**end market** -- mills, manufacturers and other facilities which acquire recyclable materials for conversion into new products or materials

**environmentally friendly** -- something that has little or no adverse effect on the

environment; used frequently (and often misleading) in marketing products to differentiate between alternatives that pose differing threats to the environment

**EnvironMentors** -- a program with the North East Business Association which provides business consultation and a resource library for the areas of waste reduction and pollution prevention

**food waste reuse** -- reducing food waste found in the waste stream by reusing it as a different product: feed for hogs, compost, or food for human consumption

**hog farm reuse** -- a form of food waste reuse in which food is used as feed for hogs

**human consumption reuse** -- a form of food waste reuse in which certain foods are donated to charitable organizations who provide meals for the less fortunate

**IMPIRG (Minnesota Public Interest Research Group)** -- an organization and lobbyist dedicated to the environment and consumer rights in the state in Minnesota

**low grade paper** -- includes materials which cannot be recycled such as paper towels, tissue waste, or food wrapping

**Marcy-Holmes NRP Action Plan** -- A report describing the goals and objectives of the Marcy-Holmes neighborhood as they apply to the areas of housing, environment, economic development, and crime and safety

**Minnesota Office of Environmental Assistance (OEA)** -- a government agency dedicated to the reduction of waste and the enhancement of environmentally-friendly practices in the state of Minnesota

**Minnesota Technical Assistance Program (MnTAP)** -- a nonregulatory program which assists Minnesota businesses in identifying and implementing options to prevent waste generation and manage waste properly. Services are provided at no charge

**Minnesota Waste Wise** -- a nonprofit, voluntary waste reduction education program, with a membership base of 600 businesses, designed to help businesses of all types and sizes learn how to create less waste, reuse more, and find new markets for waste materials

**mixed municipal solid waste (MSW)** -- garbage, refuse, and other solid waste from residential, commercial, industrial, and community activities that the generator of the waste aggregates for collection, but does not include auto hulks, street sweepings, ash, construction debris, mining waste, sludges, tree and agricultural wastes, tires, lead-acid batteries, motor and vehicle fluids and filters, and other materials collected, processed and disposed of as separate waste streams (Minnesota Statute 115A.03, Subd. 21)

**non-recycled paper** -- typically low grade papers such as paper towels, tissue waste, or food wrapping. These cannot be recycled but may be compostable

**office paper, high grade** -- white and pastel bond, typing, computer, copy or stationary-quality paper; plain white envelopes; index cards; all must be free of labels, stickers, cellophane windows, tape, or attached plastic items; no carbon, tracing, glossy, or coated paper; no paper towels, tissue waste, or food wrapping

**office paper, mixed grade** -- high-grade white and colored paper that may have labels, stickers and cellophane; glossy paper, manila envelopes and file folders are often acceptable; no carbon paper, paper towels and tissues, or plastic items attached to materials

**recycling** -- creating products from recyclables instead of virgin materials by acquiring those materials and processing them

**recycling loop (or "closing the loop")** -- a process of both sending materials to be recycled and buying recycled materials thus ensuring a demand and healthy markets for recyclables

**reduction (or source reduction)** -- an activity that prevents waste at its source, which includes reducing the amount of material used and/or the toxicity of the material used to accomplish any task; reuse of a product in its original form; and use of repairable, refillable or durable products that result in a longer useful life

**reuse** -- after serving their original function, using products again in their present form

**St. Paul Neighborhood Energy Consortium** -- a coalition of community organizations serving St. Paul area residents and businesses and designed to provide information, services, and programs that contribute to an environmentally responsible community

**source-separated recycling** -- separation of recyclable materials by the waste generator prior to collection

**"soy" ware** -- biodegradable plasticware (disposal utensils, plates, cups, etc.) made from a soy or corn product and suitable for composting

**three R's** -- the elements of Reduce, Reuse, Recycle which, when practiced together, can save natural resources and money

**Twelve Baskets Program** -- a charitable organization in St. Paul which accepts certain food donations for human consumption

**waste audit** -- an analysis more accurate than the waste survey in which individual materials from the waste stream are weighed and recorded

**waste survey** -- colloquially referred to as "dumpster dive" --visual analysis of a business's waste stream designed to determine materials which can be reduced, reused, or recycled

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