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DEPARTMENT OF
PUBLIC WORKS

OFFICE OF THE DIRECTOR

CITY OF SACRAMENTO
CALIFORNIA

CITY HALL
ROOM 207
915 I STREET
SACRAMENTO, CA
95814-2673

916-449-5283

ADMINISTRATION
916-449-8747

APPROVED
BY THE CITY COUNCIL
MAR 20 1990
OFFICE OF THE
CITY CLERK
As amended

March 20, 1990

City Council
Sacramento, California

Honorable Members in Session:

SUBJECT: **MATTERS RELATED TO STAFF REVIEW, ANALYSIS, AND RECOMMENDATIONS ON THE SOLID WASTE ADVISORY COMMITTEE'S PHASE I REPORT ON RECYCLING -- REPORT BACK**

SUMMARY

This report, a series of ten individual reports. was prepared by City staff on various recycling matters and was presented to the Joint Budget and Finance/Transportation and Community Development Committees on March 13, 1990. The Joint Committee approved the recommendations of the attached individual reports and recommended that the City Council meet with the Board of Supervisors to discuss curbside recycling methods. This report is now submitted for City Council consideration.

BACKGROUND

See the attached Budget and Finance/Transportation and Community Development Committees report.

FINANCIAL DATA

See the attached Budget and Finance/Transportation and Community Development Committees report.

POLICY CONSIDERATIONS

See the attached Budget and Finance/Transportation and Community Development Committees report.

MBE/WBE EFFORTS

See the attached Budget and Finance/Transportation and Community Development Committees report.

RECOMMENDATION

It is recommended that:

A. The City Council approve:

1. Staff implementation of a City-wide Residential Curbside Recycling Program to be phased in over a maximum of four years;

2. Staff implementation of a Phase I Residential Curbside Recycling Pilot Program serving approximately one-quarter of City residents with monthly automated collection of commingled recyclables in a 60-gallon container with the option of adjusting the container size and collection frequency as experience dictates. It is also recommended that this method of residential recycling be discussed between the City Council and Board of Supervisors.

3. Staff implementation of the recycling education strategy outlined in the Attachment D report (Recycling Education Program).

4. Inclusion in future proposed budget considerations of initiating waste audits and waste reduction/recycling activities at City facilities.

5. Staff implementation of a City procurement policy favoring recycled goods and that the policy established provide for the same 5% preference established by the state. The policy guidelines shall be in consonance with those in the Attachment G report (Resolution Favoring the Procurement of Recycled Goods).

6. The City Attorney's recommendation that the City Council not adopt the SWAC's proposed resolution as formulated, but instead, should the Council choose to do so, direct the City Attorney to amend the *"Organization and Procedures Manual on Legislative Matters Affecting the City of Sacramento"* to reflect the policy suggested by SWAC.

7. The submittal of Attachment I report (Environmental Coordination for Recycling and Solid Waste Reduction) for information only.

8. Staff recommendation not to pursue implementation of a cooperative purchasing agreement for garbage containers at this time as the City has no current needs in this area. When Solid Waste's next requirement for garbage containers comes around, staff will explore the possibility of cooperative purchasing with the state or another local agency.

9. The allowance to the Revenue Division and Public Works Department staff of 180 days to meet with legal staff and commercial waste haulers to develop a procedure for verifying that commercial waste haulers meet the recycling goals established by City Council Resolution No. 89-685.

B. The City Council not act on Attachment E report (Recycling Design Guidelines for the Zoning Ordinance). Although, this item was approved by the Joint Committee on March 13, 1990, it is necessary that the item be heard by the Planning Commission prior to City Council action; the Planning Commission has not heard the item. The item was scheduled to go before the Planning Commission on March 8, 1990; however, the Commission continued the item to April 12, 1990. Thus, this item would be brought back to Council after Planning Commission review.

Respectfully submitted,

Reginald Young
Deputy Director of Public Works

RECOMMENDATION APPROVED:

for Walter J. Slipe
City Manager

APPROVED:

for Melvin H. Johnson
Director of Public Works

Contact Person:
Reginald Young, Deputy Director of Public Works
449-5283

March 20, 1990
All Districts

Attachments

(2)

DEPARTMENT OF
PUBLIC WORKS

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CALIFORNIA

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March 13, 1990

Budget and Finance/Transportation
and Community Development Committees
Sacramento, California

Honorable Members in Session:

SUBJECT: MATTERS RELATED TO STAFF REVIEW, ANALYSIS, AND RECOMMENDATIONS ON THE SOLID WASTE ADVISORY COMMITTEE'S PHASE I REPORT ON RECYCLING -- REPORT BACK

SUMMARY

This report again transmits to the Joint Committees the series of ten individual reports prepared by City staff on various recycling matters and was first sent to the Joint Committees on November 14, 1989. The individual reports originally documented the results of staff's review analysis and recommendations of the recycling issues requested by City Council Resolution #89-685. The attached reports contain staff's recommendations after their participation in two Recycling Educational Programs (workshops). The public input from the workshops has been incorporated into staff's recommendations. This report also provides an executive summary of the ten recycling reports.

BACKGROUND

On November 14, 1989, staff submitted a series of reports to the Joint Committees under the encompassing title of "Matters Related to Staff Review, Analysis, and Recommendations on the Solid Waste Advisory Committee's Phase I Report on Recycling." At the November 14, 1989, meeting staff recommended that a series of recycling response reports be transmitted to the City's Solid Waste Advisory Committee (SWAC) for review and later comment at a public hearing. At that time, staff also recommended conducting a public educational workshop to inform the public, and interested agencies, of the rationale for staff's recommendations. The workshops were to be an opportunity to exchange ideas and receive recycling input from the aforementioned parties. Two Recycling Educational Programs were held, one on the afternoon of December 7, 1989; the second workshop in the evening of February 1, 1990. The general public and approximately 60 agencies and parties were notified of these workshops. The input received is provided in the several attached reports.

On August 29, 1989, the City Council passed Resolution #89-685 which required City staff to:

1. Review, analyze, and make recommendations on the recycling activities contained in the City's Solid Waste Advisory Committee's (SWAC) Recycling Action Plan titled, *"Subcommittee Phase I Report."*

2. Develop a pilot Curbside Recycling Program, which will serve at least one-quarter of the households in the City. The pilot Curbside Recycling Program is to be implemented subject to compliance by the California Environmental Quality Act (CEQA) by August 1, 1990.

The various staff reports, as submitted herewith, are consistent with the SWAC report format, i.e. the staff report designated as Attachment B responds to SWAC Exhibit/Resolution B; and staff report designated as Attachment C responds to SWAC Exhibit/Resolution C, and so on.

Recycling Goals -- Attachment B

SWAC Exhibit/Resolution B recommended specific City recycling goals. The November 14, 1989, staff report, Attachment B, identified the actions and policies that staff deemed essential to accomplishing the mandated goals. In addition to household recycling, the actions include continuous recycling education, recycling of commercial and industrial waste, large-scale and household composting, as well as enhancing the City's capability to market recyclable materials.

In addition to the above, staff now recommends that the 25% Residential Curbside Recycling Program be considered the first phase of a City-wide Residential Curbside Recycling Program. Thus, the City-wide program would be implemented as soon as fiscally and logistically practicable, but on a time line not to exceed four years.

The recommendation for this report is located on page 10.

Pilot Household Curbside Recycling -- Attachment C

SWAC Exhibit/Resolution C recommended the implementation of a pilot Curbside Recycling Program for a minimum of 25% of the City's households. City report, Attachment C, contains a detailed staff analysis of all aspects of household curbside recycling. In this report, the Public Works Department's Solid Waste Division concludes that either the once-per-week collection of commingled recyclables from a "blue box" container or the once-per-month collection of commingled recyclables from a "60-gallon auto-lift" container would be most effective for the City of Sacramento's pilot curbside collection program.

After receiving abundant input from the public and private agencies and the evaluation of same, the Solid Waste Division recommends the implementation of automatic lift recycling containers for phased City-wide Residential Curbside Recycling Program.

The recommendation for this report is located on page 14.

Recycling Education -- Attachment D

SWAC Exhibit/Resolution D recommended the implementation of a Recycling Educational Program. City staff's analysis and review concurs with the SWAC position that recycling education is relevant to the success of a recycling program. This report provides an overview of approaches which might train our citizens in a variety of waste reduction and recycling techniques. This training is oriented towards schools and neighborhood participation. The report also intimates that the Recycling Educational Program be the responsibility of the City's Solid Waste Division and; thus, that required personnel would be placed in that division.

The recommendation for this report is located on page 234.

Design Ordinance -- Attachment E

SWAC Exhibit/Resolution E recommended that City staff develop procedures whereby future commercial industrial or residential buildings, containing five or more living units, have their building permits mandate the availability of recycling space as a part of the development. The Planning Division has reviewed the SWAC exhibit and concurs with its premise. This report now contains draft recycling design guidelines that could be required of each new residential and commercial development prior to securing a building permit. This report also transmits a work plan for completion of the recycling design standards and a sample of a proposed recycling regulation section of the zoning ordinance.

The recommendation for this report is located on page 237.

Recycling at City Facilities -- Attachment F

SWAC Exhibit/Resolution F recommended the implementation of recycling methods at all City facilities. City Attachment F contains a City staff (General Services/Solid Waste) conclusion that recycling can be implemented at all but a few City facilities, as some recycling is currently being done.

The limitations on recycling are related to security facilities, e.g. police substations. While it may be possible to recycle from such facilities, unique recycling methods may be required because of security reasons. Recycling at City facilities, other than offices, i.e. corporation yards and parks, will require added analysis, but will be accomplished in a phased manner.

The recommendation for this report is located on page 259.

Establish a City Procurement Policy Favoring Recycled Goods -- Attachment G

SWAC Exhibit/Resolution G recommended that the City adopt a procurement policy favoring recycled goods. It also recommended that the City should extend a 10% preference to recycled products. The Purchasing Division recommends that the City adopt a 5% preference as established by the State of California and that the 5% preference for vendors, using recycled goods and materials, be based on meeting performance standards for each item bid.

The recommendation for this report is located on page 272.

City Support for State Legislation which Promotes Recycling -- Attachment H

SWAC Exhibit/Resolution H recommended that the City support State legislation which promotes recycling. The City Attorney's report, which responds to the SWAC's request, informs the Joint Committees that the City's policy on support of pending State legislation is outlined in the *"Organization and Procedures Manual on Legislative Matters Affecting the City of Sacramento."* The City Attorney recommends no change in the current procedures. However, the City Attorney's Office recommends that should the Council choose to support SWAC's position, the City Attorney should be directed to amend the aforementioned *"Organization and Procedures Manual on Legislative Matters."*

The recommendation for this report is located on page 279.

The Generation of Solid Waste -- Attachment I

SWAC Resolution I recommends that the City's environmental review procedures be examined to identify methods of improving the reduction of solid waste in the environmental assessment process. The Environmental Services Division of the Planning and Development Department has concluded that it will require, in the EIR Scope of Work, a detailed plan indicating measures that all projects will incorporate in their design to both reduce the waste stream and implement the recycling of materials.

The recommendation for this report is located on page 281.

Explore the Feasibility of Pooling Resources to Purchase a Variety of Garbage Can Sizes -- Attachment J

SWAC Exhibit/Resolution J recommended that the City contact San Jose and other jurisdictions to explore the feasibility of pooling resources to purchase a variety of garbage can sizes. City Attachment J reveals that the City cannot trade its existing 90-gallon containers without going to additional expense, as the City's name would have to be removed from container lids. The City of San Jose is not interested in purchasing waste containers of any size. However, there is a potential for the collaborative purchase of waste containers with the County of Sacramento.

The recommendation for this report is located on pages 283-284.

Recycling as a Condition of Franchise Renewal -- Attachment K

SWAC Exhibit/Resolution K recommended that prior to issuing or renewing a franchise for nonresidential solid waste collection and disposal services, the City shall require that such a franchise provide separate collection services for recyclable materials. The Revenue Division concurs with the SWAC request. However, the Division has concerns on several practical issues that need resolving before implementing the SWAC proposal. Therefore, this report identifies the dialogue that should proceed before any code/ordinance changes. Information obtained from licensed private haulers at the two educational workshops indicated their willingness to cooperate with the City on recycling as a requisite of permit renewal. Several haulers did express concerns regarding the City's ability to refuse disclosure of proprietary collection information they might provide.

The recommendation for this report is located on page 287.

FINANCIAL DATA

The implementation of some of the recycling issues in this series of reports can have considerable budgetary impact. Thus, staff is requesting additional time to identify the curbside residential recycling costs and report back in context of the Solid Waste budget hearings.

POLICY CONSIDERATIONS

The policy considerations shown in the individual reports should be approved by the Joint Committees and recommended to the City Council. Included among these policies are:

1. The approval of a full City-wide phased Curbside Recycling Program.

2. The approval of a 5% preference on the procurement of recycled goods.

MBE/WBE EFFORTS

Where applicable, MBE/WBE efforts are contained in the individual reports.

RECOMMENDATION

It is recommended that the Joint Committees approve the recommendations of the individual reports attached hereto and forward them to the City Council with the Committees recommendation that they be approved by the Council.

Respectfully submitted,

Reginald Young
Deputy Director of Public Works

RECOMMENDATION APPROVED:

For Solon Wisham, Jr.
Assistant City Manager

APPROVED:

Melvin H. Johnson
Director of Public Works

Contact Person:
Reginald Young, Deputy Director of Public Works
449-5283

March 13, 1990
All Districts

Attachment B

DEPARTMENT OF
PUBLIC WORKS

OFFICE OF THE DIRECTOR

CITY OF SACRAMENTO
CALIFORNIA

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March 13, 1990

Budget and Finance/Transportation
and Community Development Committees
Sacramento, California

Honorable Members in Session:

SUBJECT: **ISSUES RELATED TO ACCOMPLISHING RECYCLING GOALS**

SUMMARY

The November 14, 1990, version of this report identified those additional City Council actions which are essential to the accomplishment of its recycling goals. Subsequently, information from the educational programs and other sources indicate that the City should commit to a full City-wide Residential Recycling Program.

BACKGROUND

The evolution of recycling in Sacramento will be strongly influenced by AB 939 (Sher) and dictated by the mandates of City Council Resolution #89-685. This resolution launches a major effort to change the way our citizens handle their waste in order to reduce the quantities that must ultimately be disposed of as refuse. Our attention is shifting from systems that dispose of waste to systems that capture resources from waste. But, it is imperative that we remain cognizant of the fact that the City's recycling goals, and those of AB 939, have never been achieved in the western hemisphere. Toronto, Canada, reports the greatest western world waste reduction at 21% of the total waste stream.

While the recycling programs described in the following reports represent a significant City-wide effort, they do not represent the limits to waste reduction and recycling in Sacramento; nor are these efforts alone likely to ensure that we fulfill our recycling goals. This report introduces the minimum additional steps that are essential to full recycling success.

Commercial and Industrial Waste -- Commercial and industrial solid waste, generated by multi-family housing, businesses, institutions, construction, demolition projects, and other industrial establishments, account for an unknown portion of the City's waste stream. The sources of commercial waste in Sacramento include large apartment complexes, hotels, motels, restaurants, fast food facilities, hospitals, schools, office buildings, retail outlets, shopping centers, supermarkets, warehouses, and construction demolition sites. Since much of this waste is collected and disposed of by the private sector at the Sacramento County and Yolo County landfills, City staff has no real knowledge of the amount of commercial waste being generated, collected and/or recycled. Yet, in order for the City to realize its goal for municipal waste reduction, commercial waste recycling is essential.

Unlike a municipal program for recycling household waste, commercial waste recycling is highly dependent on the active support and participation of the private sector. This includes businesses, institutions, and other commercial establishments that generate this waste, as well as haulers and other enterprises currently engaged in refuse handling and materials recovery. The challenge in establishing a program to promote the recycling of commercial waste is to achieve the goal of municipal waste reduction within a framework that is acceptable to private enterprise and yet enhances market competition.

The City will be entering an area where considerable recycling activity is probably already taking place. This is not to say, however, that more recycling could not take place. An integrated waste management strategy must pull more material from the waste stream, and the City must enter this arena with some understanding of what is already underway, who the players are, and what the driving market and other economic forces are.

The City's future role in commercial waste recycling, as recommended in this report, is less direct and hands-on than with curbside recycling. In addition, it is critically important that the City take care not to simply displace existing recycling operations in the name of expanding recycling activity. New programs in commercial recycling are highly advised, but they must be undertaken cautiously.

In sum, there are numerous approaches that might be employed by the City in order to increase its involvement in commercial waste recovery. Many of these approaches can exist within a context that is mutually beneficial to the City and the many private businesses involved in commercial waste disposal issues. Should the City Council resolve to initiate such an effort, these strategies will benefit from a much more thorough assessment along the guidelines delineated in Exhibit 1 (attached).

Yard Waste Source Reduction/Home Composting -- Forty percent of all solid waste landfilled within the City of Sacramento is yard waste -- 25% of that amount is collected separately from other waste. Yard waste is the largest component of our municipal waste stream. Unless another viable alternative is identified by our Request-for-Qualification (RFQ) procedure, yard waste reduction and composting can be our single most effective recycling activity.

However, large-scale composting is not without its risks. If the products from large-scale yard waste processing cannot be continuously used in a beneficial manner to minimize land disposal, the expense of large-scale composting of yard waste will be difficult to justify.

Awareness of these risks necessitates that source reduction be the first priority of a yard waste project. A source reduction component of the proposed yard waste program should concentrate on education and promotional activities to encourage and maintain a yard waste reduction effort.

A separate report, to be presented today but not in this recycling series entitled "Composting Yard and Garden Waste," intimates that only 2% of the public will participate in a home composting program. Thus, source reduction activities, as projected, are not likely to significantly reduce the amount of yard waste generated. However, if we can increase the yard waste reduction from a projected 0.4% to 5% by weight within the next five years, it will be an outstanding accomplishment. Our efforts must focus on such yard waste reduction activities as: (1) landscape alteration; (2) home mulching; and (3) home composting.

Landscape alteration would require that we convert some of our lush lawns to xeriscapes. Potential xeriscaping activities include the use of drip irrigation, recirculating water systems, and plants that survive with only natural rainfall.

Home mulching would entail leaving grass clippings on the lawns as the grass is cut. More frequent mowings may be necessary to avoid problems, which may be caused leaving clumps of grass on the lawns.

Home composting of leaves, grass clippings, and chipped tree prunings can easily be done by homeowners and gardeners. The City might even sponsor the establishment of neighborhood yard waste compost programs or provide materials to individuals for constructing backyard composting facilities.

To accomplish our recycling goals, we must target residents and gardeners with educational aids to encourage yard waste source reduction.

Expansion of Household Recycling -- The Residential Curbside Recycling Program, designed to the requirements of City Council Resolution 88-685, accommodates 25% of the City's households. Information obtained from the Selection Committee, proponents of alternatives to direct haul proposal, indicate that full City-wide Residential Curbside Recycling is necessary to meet the City's goals without engaging technical and somewhat speculative waste recovery processing systems. Thus, it is recommended that we have a City-wide Residential Curbside Recycling Program.

Recycling Via Buy-Back -- It must be recognized that because of economic deprivation, some households will not give away that which has real or perceived value. Thus, it is realistic to anticipate that an enhanced recycling program requires that staff design mobil and/or stationary programs to purchase some recyclables.

Continuous Education/Promotion -- The success of our greatly needed recycling program will require that the City continuously promote recycling leadership and behavior among all of its residents and businesses. In simple terms, meaningful recycling cannot be successful without continuously, adequately funded outreach, education, and motivation efforts on the part of our City.

Marketing -- The City is proposing to commit a considerable expenditure of funds to the development of recycling and composting as viable methods of avoiding landfilling a large portion of the City's waste stream. The success of these approaches will depend upon the existence of continuous markets to receive the collected materials and use the compost. Therefore, the maintenance of reliable markets is essential to the success of our recycling activities. While the City has extensive experience in refuse collection and purchasing, it has no direct experience in processing and marketing recyclables. Because of the complexity and scope of our marketing needs, the City must seek a qualified marketing specialist to perform those activities necessary to selling recovered materials and compost.

Recycling Cost -- Segments of our community have postulated that recycling Sacramento's waste will be cost-effective and ultimately reduce the cost of solid waste disposal. City staff research and analysis does not conclude any purported recycling related "garbage fee" rate reductions. The recycling system costs, presented elsewhere in this series of reports and contacts with active and successful recycling programs throughout the country, reveal that recycling is more costly than traditional land disposal. Personnel from very effective recycling programs in Austin, Texas; San Jose, California; and Charlotte, North Carolina, have stated that their programs are not cost effective and is not anticipated to be cost effective in the next ten years.

Rather than approaching recycling from a revenue producing angle, we must get our citizens to participate in recycling because it is the right thing! Our community should recognize the essential unity of the environment and our economy -- for example, by investing in turning garbage into a reusable resource, we are adding to our overall resource base. Recycling can enhance the quality of life and, most important, it has become an environmental necessity.

FINANCIAL DATA

There are no financial impacts associated with this report.

POLICY CONSIDERATIONS

None.

MBE/WBE EFFORTS

None.

RECOMMENDATION

It is recommended that the Joint Committees concur with and recommend to the City Council City-wide curbside residential recycling phased in over a minimum of four years.

Respectfully submitted,

Reginald Young
Deputy Director of Public Works

RECOMMENDATION APPROVED:

FOR Solon Wisham, Jr.
Assistant City Manager

APPROVED:

Melvin H. Johnson
Director of Public Works

Contact Person:
Reginald Young, Deputy Director of Public Works
449-5283

March 13, 1990
All Districts

ATTACHMENT C

DEPARTMENT OF
PUBLIC WORKS

SOLID WASTE DIVISION

CITY OF SACRAMENTO
CALIFORNIA

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DAVID A. PELSER
SOLID WASTE
DIVISION MANAGER

March 13, 1990

Transportation and Community Development/
Budget and Finance Committees
Sacramento, California

Honorable Members in Session:

SUBJECT: Residential Curbside Recycling

SUMMARY

On November 14, 1990, staff submitted a report on residential curbside recycling and recommended the report be transmitted to the Solid Waste Advisory Committee and other interested agencies for review and comment. Since then, comments have been received in written form, verbally, and at two public educational workshops on recycling. This report presents the comments received, and provides updated staff conclusions and recommendations concerning the implementation of a residential curbside recycling program. Because of the low risk of initial investment and the greatest potential impact on the waste stream, staff recommends a pilot program serving approximately one quarter of City residents with monthly automated collection of commingled recyclables in a 60 gallon container with the option of adjusting the container size and collection frequency as experience dictates.

BACKGROUND

On November 14, 1990, staff submitted a report to these joint committees titled "Program Alternatives and Proposed Implementation Plan for Residential Curbside Recycling" in response to Council Resolution No. 89-685 adopted on August 29, 1989. In that report, staff recommended the report be transmitted to the Solid Waste Advisory Committee (SWAC) and other interested agencies for a review and comment period along with other recycling reports. In addition, staff recommended conducting a public educational workshop to explain the recycling reports and to solicit comments and the exchange of ideas. Two such public workshops were conducted on December 7, 1989 and February 1, 1989.

Public Comments Received

Comments (mostly verbal) were received from Greg Popejoy, Mark Murray, Lester Pogue, Michael Rock, John Mayor, Burns McColman, Daniel Gorfain, Harry Miller, Kelly Smith, Bill Shireman, Betty Gwaizdon, and Frank Hughes. Attached is a copy of a letter from Harry Miller and our response. Most of the comments received surrounded the potential problem of glass contamination in newspaper that would be collected in Alternative D, the fully automated collection of commingled recyclables. This subject is addressed in detail in the response to Mr. Miller's letter. Although there has been much speculation about newspaper contamination with glass in a commingled collection system, none of those commented had operated such a program, or seen one, or even talked to the operators of a program. Betty Gwaizdon of the Apartment Owners Association, expressed interest in the use of 90 gallon containers for collection of recyclables at apartment complexes. These containers could

be placed near recreational facilities, club houses, and other common areas in these complexes. Also, Frank Hughes of Local 39 stated the union is reluctant to have its members involved in manual collection now that automated collection vehicles are in common use. Also attached is a copy of a letter from Patricia McHugh to the Recycling Subcommittee regarding her recommendations for a curbside recycling program.

Recent Staff Research

Attached is a matrix evaluation of three curbside recycling systems which summarizes current staff research.

Since the November 14, 1989 staff report was prepared, additional research has been done on alternative collection and processing methods, partly to follow up on comments received. Numerous telephone calls have been made to program operators around the country, both to city officials and private companies. Visits were made to the Phoenix and Seattle programs which include both automated collection of commingled recyclables and manual collection of partially separated materials. The San Jose program was visited several months ago. Also, staff has attended an international recycling conference in Seattle during the week of February 12, 1990.

One observation is that intense competition exists among the private companies who operate recycling programs. They tend to exaggerate the success of their own programs as well as exaggerating the faults of their competitors. In an attempt to get a more objective analysis of a program, we have had to interview representatives of competing companies and local officials in the appropriate jurisdiction. Even then, much conflicting "data" exists along with many professional opinions.

The issue of glass contamination in commingled systems has still not been totally resolved. However, it appears to not be as big a problem as first imagined. The Phoenix pilot program and the Seattle Rabanco program have been able to sell their paper at the same quality grade as many "source separation" manual collection programs. There are some manual collection programs that are able to sell old newspaper at a higher quality grade, but usually following additional cleaning and processing after collection at the curb.

Since the completion of the November 14, 1989 staff report, we have learned that several other western cities besides Seattle and Phoenix are planning to implement a residential curbside recycling program using automated collection of commingled materials. Since this is a new development, staff has not yet contacted these cities to determine the reasons for their decision. These cities include:

Visalia (the CAW "model city" for developing recycling programs)
Brea
Santa Maria
Beverly Hills
Anaheim
Pamona
Clairmont
Lompoc

Potential revenue generation is another consideration in evaluating alternative curbside recycling programs. It is clear that marketing recyclable materials will be increasingly difficult in the immediate future. Generally, as the collection of recyclable materials increases, supplies will exceed demand, the revenues from material sales will drop, and material specifications will be tighter. It has been argued by some that the collection programs which involve greater sorting of materials by residents will enjoy a short term market advantage over those with less source separation. However, our research does not confirm this. Past problems with contaminated materials are solvable. Further, systems with greater separation of materials are less flexible to change as market conditions change, and they have limited capacity for adding materials. On the other hand, collection systems

with commingled materials in large containers are more flexible in responding to new market conditions by adding materials. As recycling increases nation wide, new markets will develop for large volumes of recyclables with slightly higher contamination rates. Having a consistently high volume of material for sale might be as valuable in the market place as smaller quantities of high grade materials. Since the City has adopted aggressive recycling goals, aggressive collection and marketing strategies must be employed. In the long term, the program that moves high volumes of consistent material will have a greater chance of meeting those goals.

Although staff has prepared this report on program alternatives and implementation in response to Council direction, staff is concerned about the cost effectiveness and timeliness a residential curbside recycling program. All the programs currently operating which staff has seen are encountering significant problems. There is no doubt that new methods and equipment will be available in the next couple of years that will make any current system obsolete. It is very difficult to change the equipment and trained employees after the investment in a program is made. We do not believe that improvements will be continuous as with some technologies, but rather a major change in recycling methods is imminent. Further, the results of the City's current process to evaluate private sector proposals for alternatives to direct haul could impact which curbside programs, if any, are most appropriate. Implementing a curbside program now might result in unnecessary expense and inconvenience to our residents if other alternatives can meet the stated recycling goals.

Based on the comments received and the additional research, staff has reconsidered the conclusions and recommendations presented in the November 14, 1989 report. Although our knowledge of the alternative curbside recycling programs has increased, we have confirmed our original conclusions and recommendations. That is, among the manual collection systems the "Blue Box" (Alternative B) is preferred by system operators, and fully automated collection of commingled recyclables has enough promise to be recommended for a pilot program. The attractiveness of the automated system is primarily due to its potential to result in the greatest diversion of material from the landfill, its flexibility to respond to changing market conditions by adding materials, the feasibility of expansion to multifamily housing and small commercial recycling, and its low risk as a pilot program.

FINANCIAL DATA

Preliminary estimates for cost comparisons were presented in the November, 1989 staff report titled "Program Alternatives and Proposed Implementation Plan for Residential Curbside Recycling. In that report, very conservative assumptions were used and program elements recommended by other cities were incorporated. This resulted in projected costs that are high compared with costs reported by other jurisdictions. Also, many programs do not report the total program costs, but only direct operational costs after start-up. After further policy direction is given to staff, more detailed work will be required to present specific budget estimates during the upcoming budget hearings.

POLICY MATTERS

Policy issues include (1) recycling goals adopted in Council Resolution 89-685 and the new requirements of the California Integrated Waste Management Act of 1989 (AB939), (2) whether to implement a residential curbside recycling program and what type, (3) the cost of implementation of such a program, (4) the implementation schedule.

MBE/WBE

Not applicable.

RECOMMENDATION

If curbside recycling is to be done in Sacramento, it should be City-wide. If the "blue box" system is chosen, City-wide implementation should begin without the need for a pilot program, with staff making any necessary improvements in equipment and methods as the program is phased in. However, because of the low risk of initial investment and the greatest potential impact on the waste stream, staff recommends a pilot program serving approximately one quarter of City residents with monthly automated collection of commingled recyclables in a 60 gallon container with the option of adjusting the container size and collection frequency as experience dictates. If the pilot program is unsuccessful, the one side loader packer truck could be used as a replacement vehicle in the garbage truck fleet and the 60 gallon containers could be sold or provided to residents who require less garbage capacity than the standard 90 gallon containers.

Respectfully submitted,

DAVID A. PELSER
Solid Waste Division Manager

Recommendation Approved:

SOLON WISHAM, JR.
Assistant City Manager

Approved:

MELVIN H. JOHNSON
Director of Public Works

Contact Person to
Answer Questions:

DAVID A. PELSER, SOLID WASTE DIVISION MANAGER
449-2043

March 13, 1990
All Districts

ATTACHMENT C

DEPARTMENT OF
PUBLIC WORKS

SOLID WASTE DIVISION

CITY OF SACRAMENTO
CALIFORNIA

1231 I STREET
SUITE 103
SACRAMENTO, CA
95814-2933

916-449-5757

November 14, 1989

Transportation and Community Development/
Budget and Finance Committees
Sacramento, California

Honorable Members in Session:

SUBJECT: Sacramento City Residential Curbside Recycling

SUMMARY

This document transmits the Program Alternatives and Proposed Implementation Plan for Residential Curbside Recycling in response to Resolution No. 89-685 adopted by the Council on August 29, 1989.

BACKGROUND

See attached report.

FINANCIAL DATA

The implementation of a curbside recycling program will have significant fiscal impact on garbage service rates. That impact is examined in detail in the attached report.

POLICY MATTERS

Policy issues include (1) recycling goals adopted in Council Resolution 89-685, (2) the type of residential curbside recycling program to implement, (3) the cost of implementation of such a program, and (4) the implementation schedule.

MBE/WBE

Not applicable.

RECOMMENDATION

It is recommended that the Joint Committees direct City staff to transmit this report to the City's Solid Waste Advisory Committee and other interested public agencies for a review and comment period along with other recycling reports presented this day.

Respectfully submitted,

DAVID A. PELSER
Solid Waste Division Manager

Recommendation Approved:

SOLON WISHAM, JR.
Assistant City Manager

Approved:

MELVIN H. JOHNSON
Director of Public Works

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5.6

CITY OF SACRAMENTO

PROGRAM ALTERNATIVES

AND

PROPOSED IMPLEMENTATION PLAN

FOR

RESIDENTIAL CURBSIDE RECYCLING

Prepared By:

City of Sacramento
Department of Public Works
Solid Waste Division

November 1989

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TABLE OF CONTENTS

I. EXECUTIVE SUMMARY

In response to State legislation and City Council action, staff has designed a curbside recycling program to serve 25% of the City's households. Following a review of the operational principles guiding the program design, the report describes the types of recyclable materials which might be collected and discusses the markets for each. The report then analyzes four alternatives for curbside collection, ranging from source separation by the householder to fully automated collection of commingled recyclables. A cost analysis of the various alternatives is included. This report recommends either the once-per-week collection of commingled recyclables from a "blue box" container or the once-per-month collection of commingled recyclables from a "60 gallon auto-lift" container. The implementation of automatic lift recycling is recommended for the City of Sacramento's pilot curbside collection program.

Participation in the program, as proposed, will be voluntary. Opportunity to participate will be equally available to all households within the program area, regardless of demographic factors. The addition of 3.50 FTE will be required for program implementation. Total program costs are estimated at $2.2 million. This will require a Solid Waste rate increase for all residential customers. It is recommended that the cost of the curbside recycling program be shared by all City households, even though not all are receiving the service. This is customary procedure for City services such as recycling, which have a "universal" benefit.

If the 24,000 households served may be considered a "pilot program" for the purposes of the California Environmental Quality Act (CEQA), curbside program implementation could begin approximately 12 months after City Council approval. Full implementation, with containers delivered to all participating households, would require a total of 22 months. If, however, an Environmental Impact Report (EIR) is required, initial implementation could not begin until after December of 1990. This schedule is dictated by procurement and personnel selection procedures. The time line can be accelerated if exceptions are made to the competitive bidding process; however, any such changes may result in significant increases in cost.

II. INTRODUCTION

Purpose and Background: AB 1462, which passed on September 18, 1987, established State Government Code Section 66790.5, subdivision (f), requiring that the County of Sacramento's Solid Waste Management Plan, as revised during or after 1988, include both a goal of recycling 20% of the entire County's waste stream and the specific actions the County will take to meet that goal. In 1987, Governor Deukmejian signed into law AB 1462, which required that all County Solid Waste Management Plans include a goal of recycling 20% of the total waste stream. The legislation, now codified in Government Code Section 66790.5, also mandated specific actions to be taken toward meeting that goal. By approval of Resolution No. 88-646, the City Council ratified the 1988 Sacramento County revision of its Solid Waste Management Plan, which incorporated the requirements of the new law. In further support of the County's goal to reduce its waste stream by 20%, the City of Sacramento established a minimum goal of recycling at least 20% of the City's waste stream by passage of Resolution No. 88-673 on July 25, 1988. This resolution also instructed the City/County Solid Waste Advisory Committee (SWAC) to work with staff and the County Resource Recovery Task Force in the development of a report to meet the statutory 20% recycling goal, and to submit that report to the City Council no later than June 1, 1989.

On November 9, 1988, the Sacramento City Council adopted Resolution No. 88-973 establishing the Sacramento City Recycling Subcommittee to assist SWAC in the development of a recycling action plan. On June 1, 1989, SWAC submitted a report to the City Council recommending the adoption of specific recycling goals. Based upon that report, the City Council adopted Resolution No. 89-665 on August 29, 1989. This resolution established a 70% landfill avoidance and recycling goal by 1999 and directed staff to prepare an implementation plan for a curbside recycling program, including the costs of alternative programs. This Sacramento City Curbside Proposed Recycling Report is intended to provide the Council with an implementation plan, including an analysis of costs associated with various recycling options.

Appendix A includes copies of the City Council resolutions referenced above.

III. OPERATIONAL PRINCIPLES

CRITERIA

The design and implementation of the curbside recycling program, required by City Council Resolution 88-685, is predicated upon the following criteria:

1. The program shall serve at least 25% of the City's residential households where households are defined as four dwelling units or less.

2. The program shall be designed to attain maximum feasible waste diversion.

3. The system designed shall provide an equal opportunity to participate for the households it serves.

4. The program shall be flexible.

5. The program shall be compatible with City-integrated waste management.

6. No disabled exemptions shall be granted for the curbside recycling program.

The City currently collects solid waste from 93,000 households, i.e. fourplexes, triplexes, duplexes, and single-family dwellings. It is projected that the number of households served will increase to 95,000 by the time curbside recycling is implemented. Hence, the curbside recycling program must, at a minimum, serve 24,000 households to comply with its 25% requirement.

The City's goals are to recycle 30% of our waste stream by January 1, 1992, and to achieve 70% landfill avoidance by 1999. The curbside collection of household recyclables must contribute significantly to these ambitious goals. The curbside program must focus on materials for which there are proven markets to ensure that recycling indeed means reuse. However, it will be necessary to recover large quantities of the selected materials in order to approach our goals. Thus, the recycling program must be designed to accommodate the collection of the largest, practicable amount of materials.

The City currently grants disabled exemptions for regular garbage collection to those residents physically incapable of bringing their garbage containers to the curb. We do not propose a similar disabled exemption for the curbside recycling program. State law requires the weekly collection of regular refuse,

but recyclables are normally set out between two and four times per month, depending upon the collection alternative selected. If disabled exemptions were to be allowed, the drivers of the recycling vehicles would be entering backyards, where more often than not there would be no recyclables to collect. Health reasons do not require the weekly collection of recyclables.

When the curbside recycling program is in place, neighborhood block leaders will be encouraged to work with disabled residents to determine ways to encourage their participation.

Under the proposed program, all residents in the service area will have curbside collection of household recyclables. Larger multi-family housing (five or more units) will not be served by the program at this time.

Recycling should be an opportunity available equally to all and a responsibility equally shared by all. Therefore, an equivalent level of service should be provided with the same level of convenience throughout the service area. While logistical considerations may prompt minor variations in program design from neighborhood to neighborhood, the major program elements will be uniform for all targeted households.

The program must also be designed to allow for changing conditions. It must be able to accommodate the introduction and collection of new materials as markets for these materials are established. Vehicle design, processing systems, processing facilities, and event contracts should have built-in flexibility to allow for the inevitable system changes.

There are many existing recycling facilities within the City. The various facilities consist of buy-back and drop-off centers and charity groups. The purpose of a curbside recycling program shall not be to displace or replace the legitimate recyclers, but rather to build on and augment them.

ASSUMPTIONS

In order to comply with a City Council established scheduled, staff has utilized some prior City Council decisions to establish a series of principles that will be utilized as guides in the design of a curbside recycling program. Included among these are positions on:

1. Non-privatization of collection.

2. The use of non-profit agencies.

3. Joint City/County curbside recycling.

4. Joint City/County marketing.

5. Scavenging.

For the purpose of designing a Sacramento City curbside recycling program, it is assumed that:

1. The curbside recycling program collection function will be implemented by employees of the City's Solid Waste Division. The City Council has previously rejected the concept of privatizing its household waste collection services. The privatization of governmental services is a philosophical policy issue, as opposed to an issue that can be analyzed by using established verifiable criteria.

2. The storage and processing of recyclables may be done by either private or public operations. Based on City Council approval of Resolution 89-582, which authorized staff to solicit Request-for-Qualifications (RFQ's) from private interest groups willing to provide an alternative disposal to direct haul, either a private or public operation is deemed appropriate.

3. The City will operate an independent recycling collection system under the aegis of its Solid Waste Division. As a result of the City's current separate collection of garden refuse, the difference in City and County waste characteristics, and current recycling methods, the two agencies should continue to operate separate collection systems. However, joint processing and/or marketing of recyclables could be beneficial to both entities.

4. A materials recovery facility (MRF) can be designed, constructed, and operated by the City, private enterprise, a joint powers (City/County) authority, and/or self-reliance groups. For purposes of the cost analysis in this report, a contract with an outside entity to provide MRF services has been assumed.

5. City-sponsored pilot curbside recycling programs have experienced the theft of recyclables set out for curbside collection. Scavenging undermines the program's economics and the morale of participants. For this reason, a strong anti-scavenging ordinance must be developed and enforced. The ordinance should be designed to apply only to theft from curbs on the designated collection day. A vigorous public education effort must be combined with enforcement. The City's current anti-scavenging ordinance is included in Attachment B, along with examples of ordinances from other jurisdictions.

6. The City will provide the citizens with containers for the collection of recyclable materials.

ANALYSIS OF WASTE CHARACTERISTICS

The City of Sacramento has conducted waste characterization studies every year since 1974 (except 1984 and 1986). In April of 1989, R. W. Beck and Associates conducted a comprehensive waste composition study for all of Sacramento County. This study involved taking random samples from the County operated Landfill on Keifer Boulevard, the County's North and South Area Transfer Stations, and the City Landfill. Vehicles from each waste stream – commercial, self-haul and residential – were randomly selected. The City's separate collection of 64,763.9 tons of yard and garden refuse for calendar year 1988 was factored into both the table reflecting the waste sorted at the City Landfill and the aggregate table of waste generated throughout the County. Results of the R. W. Beck Waste Composition Study are included in Appendix C.

Comparison of Beck Study and City Waste Characterization Studies: The waste composition data from the Beck Waste Composition Study and the City's previous waste characterization studies are remarkably similar. This was an encouraging development, as to a great extent, each study validates the other. This level of agreement between the studies is important in assessing general trends over the long term. Such trends include an increase in plastics in our waste stream, a slight decrease in rubber and leather throughout the years, a steady increase in yard waste, and a steady decline in glass.

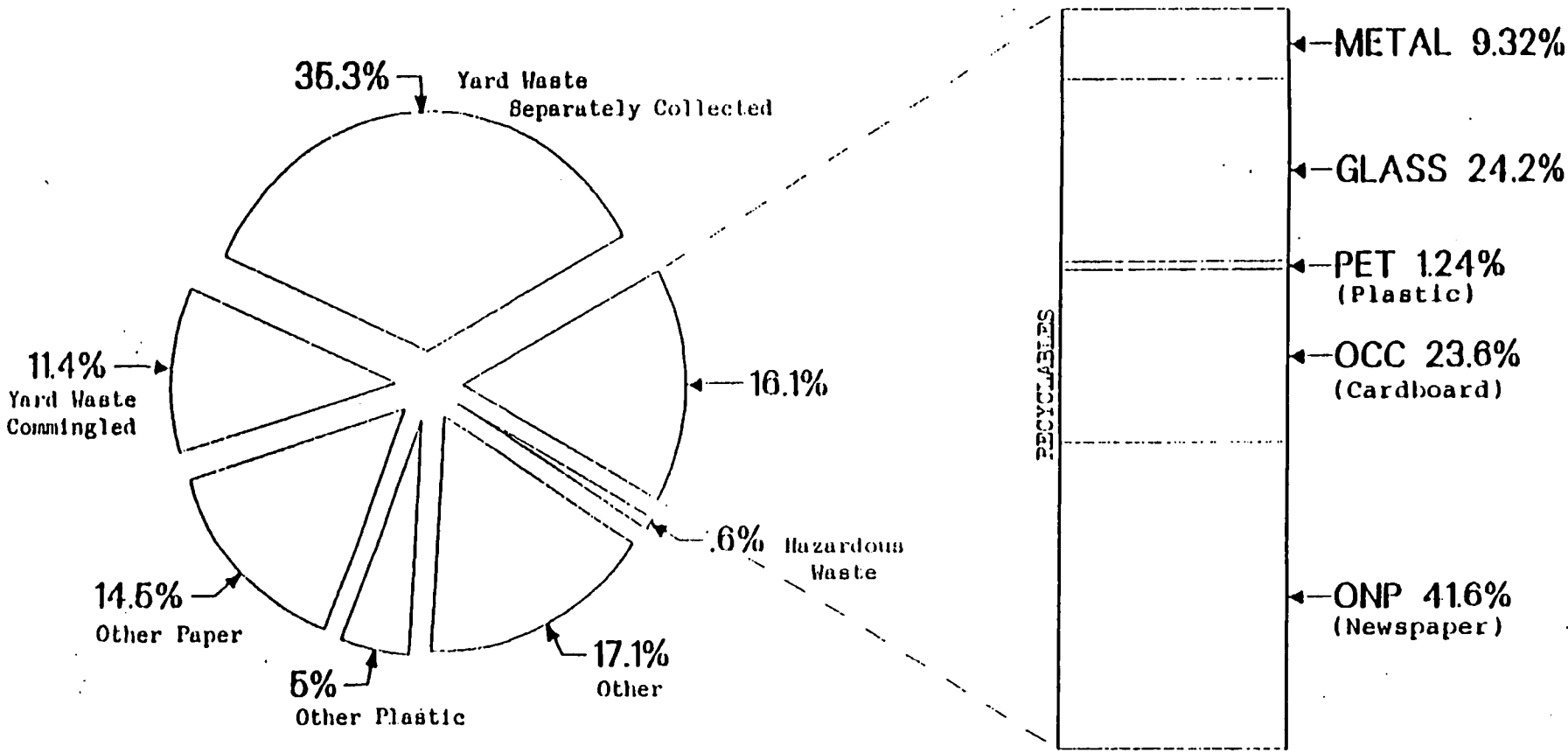
In general, the results obtained by the Beck composition study mirror the results obtained by the City of Sacramento's Waste Characterization Studies. The composition of the City's residential waste stream is summarized in Figure 3.1 on page 7.

FEASIBLE WASTE DIVERSION

The Beck report estimates the current recycling rate for Sacramento County at 14.9%. Because the City differs from the County in many ways – demographics, land use, commercial and industrial activity, etc. -- one must be cautious in assuming the same rate of recycling within the City limits. While we may use this rate for certain planning purposes, it is important to recognize that a separate comprehensive study would be required in order to project a reliable estimate of the current recycling rate in the City. Such a study would be a major undertaking; conducting it would not be possible without the voluntary cooperation of the private sector. In the absence of this type of analysis, the Beck study offers the best data available to us.

RESIDENTIAL WASTE STREAM COMPOSITION DATA

COMPOSITION STUDY PERFORMED APRIL 1989
CITY OF SACRAMENTO LANDFILL



1989 FIGURES REDUCED FROM R.W. BECK AND ASSOC. WASTE COMPOSITION STUDY
METAL CONTAINERS INCLUDE ALUMINUM, TIN, AND BI METAL

The Beck report is helpful in exploring many questions regarding the City waste stream. For example, how much material is recoverable beyond the current level of recycling? How much of the material remaining in our residential waste stream could be targeted for collection in a residential curbside recycling program? These questions are examined in detail in the table below.

TABLE 3.2
RECOVERABLE MATERIAL

	% of Residential Waste Stream	Tons	% of Total Waste Stream
Old Newsprint	6.71	12,267	4.87
PET Bottles	.19	347	.10
Glass			
Refillable Beverage Containers	0.00		
CA Redemption	1.60	2,948	1.16
CA Non-Redemption	2.32	4,182	1.66
Metal			
Aluminum Cans	.30	548	.26
Tin Cans	1.20	2,132	.85
Bi-Metal Cans	0	0	
Old Corrugated Cardboard (OCC)	3.78	6,910	2.74
Total (of Residential Waste Stream)	16.00		11.67
Total (of Residential Waste Stream Not Including OCC)	12.20		8.93

NOTE: The percentage of materials recoverable from our total waste stream is 11.67% including OCC; 8.93% not including OCC.

CORRECTED, SEE NEXT PAGE

The table extrapolates the amount of material recoverable by multiplying the percentage of each waste stream component (i.e. newspaper, aluminum, etc.) by the disposed tonnage in the residential waste stream for the 1988 calendar year. Several details should be noted for clarification:

1. These tonnage figures and the percentages recoverable apply only to the residential waste stream, not the total waste stream. Only the last two lines in the table quantify the amount of waste recoverable in terms of the total waste stream.

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1. These tonnage figures and the percentages recoverable apply only to the residential waste stream, not the total waste stream. Only the last two lines in the table quantify the amount of waste recoverable in terms of the total waste stream.

2. Some curbside programs include OCC. Total percentages of recoverable materials for the residential and the total waste streams are provided, both including OCC, and excluding it, from curbside collection.

3. The table does not project the amount or percentage of materials that will be recycled by a program. It only identifies what could be recovered if 100% of the materials identified in the table were recycled through various programs. Expected recovery rates and figures are explored below.

Predicting the amount of materials which will be recovered in a residential curbside collection program is very difficult. After studying recovery rates and waste composition from other communities, we have estimated that a residential curbside program in Sacramento might collect 31% of the materials available. That is, approximately 9,075 tons/year of recyclables might be collected City-wide if OCC is included, or 6,935 tons/year without OCC. This represents 3.6% of the total waste stream with cardboard and 2.76% of the total waste stream without cardboard. Other communities have reduced their total waste streams by 4% to 5%. Since Sacramento has a disproportionately high percentage of yard waste compared to other communities, these comparisons are reasonable. Materials already being recycled are not reflected in the waste characterization studies.

FREQUENCY OF COLLECTION

Collection of recyclables is normally done on a weekly, biweekly, or monthly basis. The timing of the curbside collection may coincide with the regular garbage pickup day or it may be scheduled for a separate day. Same day collection, with the regular garbage pickup, is the preferred alternative in order to maximize participation. It is easiest for residents to remember when to put out their recyclables if that day coincides with regular refuse pick-up. Residents are likely to recycle a higher volume of materials if they do not have to store them for longer than a week. According to 1987 research conducted for the City of Los Angeles, participation levels for weekly programs are an average of 35% higher than for biweekly programs; 151% higher than for monthly programs. According to the Los Angeles Recycling Implementation Plan, recovery levels for weekly programs are 20% to 40% higher than biweekly programs. Thus, most curbside recycling programs opt for weekly collection in order to maximize participation and the volume of materials recovered. However, the added cost of weekly collection, versus biweekly or monthly collection, could outweigh the benefit of the greater diversion of materials. It is conceivable that education and promotion strategies could be used to minimize the decrease in recyclables collected, which might occur as a result of reduced collection frequency. Finally, there is little experience with the use of large containers for fully automated collection. The materials recovery rate may be different

when these containers are used in conjunction with less frequent service.

SWAC recommended that "Recycling solid waste should be as convenient as throwing solid waste away." (See Finding I.(c) of Exhibit C of the Recycling Subcommittee Report.) Setting the same collection day for garbage and recyclables is an important factor in establishing this convenience.

Collecting recyclables on the same day as regular refuse collection helps to counter the perception that recycling is an activity separate from the regular garbage collection program. The two programs are perceived as integrated waste management. This perception could decrease the need for maintaining expensive education and promotion campaigns over the long term by taking advantage of a familiar habit.

REDESIGN OF COLLECTION SERVICE AREAS

Collecting recyclables on the same day as regular garbage collection could require the redesign of garbage collection service areas throughout the City. Garbage collection service areas are currently set up so that same day routes are noncontiguous. A recycling truck would have to drive a certain distance (see Appendix D, Table 1) from one service area to another in order to pick up recyclables on the same day as garbage collection. In order to maximize efficiency, it would be necessary to set up garbage collection so that contiguous sections of the City are collected on the same day (see Appendix D, Table 2). Recycling trucks could reduce their driving time and distance between areas served. This would require a certain start-up expense associated with rescheduling regular refuse routes.

VOLUNTARY VS. MANDATORY PARTICIPATION

Mandatory participation occurs when a municipality makes illegal the disposal of recyclables collected in a curbside collection program. Mandatory participation does not mean that the resident must participate in the curbside collection. Many people are motivated to recycle their cans or bottles with charitable organizations or to return their recyclables to buy back centers for the economic incentive. Mandatory participation in a curbside program does not affect these activities. Only the disposal of recyclable materials with one's regular garbage is made illegal.

The City of Los Angeles' Recycling Plan advocates a mandatory recycling ordinance which would require source separation of recyclables. According to the Los Angeles Recycling Implementation Plan, a 1987 survey of 34 programs indicated that, on the average, mandatory programs have 48% higher participation than voluntary programs. The Los Angeles report attributes this finding to the elevated public profile that mandatory programs receive rather than the enforcement of the measures.

Even communities which have opted for mandatory enforcement of residential source separation focus their efforts on education and public relations. Few communities are inclined to be "heavy-handed" in enforcing recycling ordinances. With the necessity to educate and motivate a public to recycle with positive reinforcement, many communities opt for voluntary programs to be initiated at first. Monies which might be expended through an expensive enforcement program could better be devoted to education and public relations.

According to the Minneapolis Solid Waste Management Study, "carrots would be more effective than sticks." Residents are provided with incentives to participate. Once a high level of participation is reached, enforcement of mandatory participation is used to reach those residents who have not responded to a positive approach.

In the spirit of the Minneapolis Study, the City of Sacramento may want to consider a voluntary program and defer consideration of an ordinance requiring participation until a majority of the population is participating in the program.

DEMOGRAPHIC ANALYSIS AND EQUAL OPPORTUNITY TO RECYCLE

The City of Sacramento is a multi-cultural, multi-ethnic, and multi-racial community. The socioeconomics of our City are varied.

Several aspects of housing and population are important to recycling program design, implementation, and success. For a recycling collection service, a high percentage of owner-occupied single-family housing is associated with high tonnages recovered and a need for more collection vehicles, fewer passes by, and particular routing strategies. Factors such as number of people per household, income level, and language barriers can affect planning, strategy, and results. Cultural and language differences in various neighborhoods demand not only the translation of messages into the preferred language, but also the use of preferred and appropriate media images and concepts.

The initial experience of the Seattle recycling program is that a low income level has correlated with lower participation rates. In the general population, low income usually accompanies lower education levels and lower home ownership rates, which also have been indicators of lower recycling participation.

It must be recognized that people with lower incomes may be more interested in recycling programs that offer financial rewards and jobs, while others may be more interested in the convenience of the recycling services.

While we acknowledge the impact of demographic factors on recycling rates, staff is not recommending differing levels of service within the City as a result. As stated earlier, an equivalent level of service should be provided with the same level of convenience throughout the recycling service area.

IV. RESIDENTIAL CURBSIDE COLLECTION OF RECYCLABLES

PROGRAM ELEMENTS

Introduction: This section of the report addresses three main program elements involved in any curbside recycling program. First, the variety of materials which may be collected is discussed, along with a brief summary of the current market for each. Second, the different types of containers for recyclables and advantages and disadvantages of each are reviewed. A similar discussion of collection vehicles follows. A survey of the options for materials processing facilities concludes this section of the report.

MATERIALS COLLECTED

Newspaper: Markets for old newsprint are currently poor; "dirty" print sells at the door for about $5/ton. The large amount of material recoverable, however, outweighs this market consideration. According to the April 1989 Waste Characterization study performed by R. W. Beck and Associates at the City Landfill, 6.71% of the City's residential waste stream consists of newspaper print. Multiplying this percentage, by the City's yearly residential tonnage, yields over 12,000 tons per year of newsprint within the residential waste stream available for recycling.

Market analysis by R. W. Beck and Associates concluded that local markets for newsprint will remain stable for the next three years, even with increased collection of newsprint. The current market will accommodate a City-wide collection program. R. W. Beck also concluded that the prospects are good for future recycling of waste newspaper generated in Sacramento County, both for existing and increased volumes potentially generated by new recovery facilities.

Beck found that buyers are willing to guarantee the increased volume from municipal collection, despite the increasing number of municipalities launching curbside programs. This market could be further stabilized with the announcement of plans to construct a mill for recycling newsprint and OCC at the Port of Stockton. A joint venture by Trans-Rim Enterprises Ltd. and Daishowa America Co. Ltd. is expected to bring about the development of a $200 million paper mill for the production of 350,000 tons of container board for domestic and export markets.

A caveat to the above market analysis concerns the high quality standards for Sacramento's newsprint market. Newspaper must be dry, and not sunburned (yellowed). Newsprint must be free of paper other than newsprint, except for inserts normally found in a newspaper. Materials such as plastic bags, tape, metal, glass, etc., will result in the "contamination" of a shipment which, in today's market, could make

the product unsalable. At the least, "dirty" print sells for considerably less. Thus, it would be advantageous to design either a collection system and/or a MRF which will remove common contaminants such as string-bundled print, glass, other papers, and brown paper bags or plastic from the newsprint.

Glass: Local markets for beverage containers are excellent. Owens-Illinois has a glass manufacturing plant in Tracy. Glass prices are also high as a result of AB 2020. With the passage of SB 1221, which will increase redemption values, glass prices could rise as high as $320/ton by 1993, depending upon the recycling rate. However, it will be necessary to provide as clean and separated a product as possible to obtain the best door price. Markets for glass in California are expected to grow tighter in terms of quality standards. Future markets for glass may demand clean segregation by color in order to market the material at all. This will require a collection system or material recovery system capable of color separation. Our system will also have to minimize breakage, which detracts from our ability to segregate by color. Mixed cullet from broken glass will become more difficult to market and will sell for considerably less than cleanly segregated glass. According to an industry representative, many buyers in the Bay Area will not purchase cullet with more than 10% breakage.

Polyethylene Terephthalate (PET) Plastic: PET plastic currently sells for about $0.24/lb. from a certified recycler. Markets for mixed plastics do not exist in Sacramento, nor does a viable market for high density polyethylene (HDPE). However, with mixed plastics and HDPE plastic making up almost 5% of the residential waste stream, efforts to locate a stable market for these materials is warranted.

Aluminum: The high value of aluminum, and the energy savings from recycling aluminum, will continue to guarantee a good market for this material. Aluminum is one commodity which more than pays its way in curbside collection programs.

Old Corrugated Cardboard (OCC): According to the R. W. Beck Waste Characterization Study, OCC constitutes 3.78% of our residential waste stream, which translates into 6,910 tons/year. However, the separate collection of OCC at the curb could greatly increase collection costs. The separate collection of cardboard would take longer at the curb, requiring separate handling by the driver/operator. The need to develop an efficient curbside service may outweigh the opportunity to conveniently recycle cardboard at the curb. The exception would involve the use of a 60 or 90 gallon container in conjunction with a compactor truck. The automated collection would preclude any concern regarding increased collection costs associated with the curbside collection of old OCC. While the possibility of cardboard being contaminated by the compaction of a packer truck may increase, collection costs for this method remain the same with the inclusion of OCC.

Mixed Paper: A couple of municipal curbside programs, such as Seattle, have attempted to recycle mixed paper, but markets for mixed recyclable paper are very poor. The available supply of mixed waste far exceeds the industrial capacity. Seattle's program enjoys a $48/ton avoided disposal fee, in conjunction with a geographical position favoring sale of mixed paper to the Pacific Rim; Sacramento does not share these advantages. Even with almost 5% of our residential waste stream consisting of mixed recyclable paper, a municipal collection program in Sacramento could find itself without any market for a material which currently sells for between $2 and $10/ton.

Motor Oil: Used motor oil is included in the curbside programs of only a few communities. A small amount of oil spilled during collection can contaminate an entire load. A program which includes motor oil collection at curbside also raises potential liability questions. It is commonly held by operators that the potential for litigation outweighs the benefits of including motor oil in curbside service.

The collection of used motor oil does not produce revenue for a program. The only value to collecting used motor oil is in diverting it from possible illegal disposal by "do-it-yourselfers." The City currently operates a household hazardous waste collection program, which allows residents to dispose of motor oil at no cost. There are over 40 drop-off locations for used motor oil within the incorporated City limits, and a public education program could be used to discourage the illegal disposal of motor oil.

SUMMARY OF MATERIALS

The materials which would likely be collected in a curbside recycling program are PET plastic, glass containers, aluminum, tin cans, steel cans, bi-metal cans, and newspaper print. OCC could be collected under one or two of the collection systems examined in this report, but not without concern regarding both increased collection costs and the marketability of a product which could become contaminated through compaction with glass. The decision about which materials to collect at curbside is inherently linked to the choice of a collection vehicle.

CONTAINERS

Containers used in curbside recycling programs have a broad range of design and purpose. This range of options includes 60 or 90 gallon containers, which collect completely commingled recyclables, single "blue box" containers of commingled materials, and multiple plastic buckets and bags or bin systems. Container types are compared in detail in Appendix E.

VEHICLES

This report examines several alternatives which involve the consideration of a variety of recycling collection vehicles. Vehicle types range from fully-automated or semi-automated packer trucks to source separation vehicles with five or more bins for sorting and separation of materials at the curb. Appendix F of this report provides informational materials from various vendors regarding different types of collection vehicles. Specific advantages and disadvantages will be discussed further in the Subsection "Program Alternatives." Most operators would advance the following general criteria for selecting a collection vehicle.

First, the collection vehicle should have a minimum capacity of about 30 cubic yards. Except for the use of a packer, which compacts the material collected, weight is not a problem with most recycling collection vehicles. In general, the larger the capacity of the collection vehicle, the more cost efficient the operation. A vehicle which cannot remain on a route for an entire shift must spend a significant amount of unproductive time transporting materials back to the processing facility. A collection vehicle which can stay out on a route for an entire shift due to its capacity will result in a much larger number of households served per day. This, in turn, results in less labor expense and a smaller sized vehicle fleet for one's overall operation.

Second, to save time and avoid injuries, the vehicle should have a low entry level cab. Third, collection vehicles which require the driver/operator to lift recyclables overhead for loading, or which require lifting of materials above waist height, will decrease production and increase the risk of worker injury.

Fourth, capacity is related to whether or not it is possible to top-load the vehicle. When assessing the capacity of a vehicle, one must consider the space which is actually usable. Some vehicles have capacity which cannot be taken advantage of since they cannot be top-loaded.

Most operators also cite the need for flexibility. Trucks which have multiple bins are viewed as less flexible. If it was desirable to collect an additional material such as HDPE in a source separated program with little back-end processing, a truck which lacked sufficient bins would not allow this material to be added. However, flexibility is not the only variable to be considered in the choice of an alternative. Smaller programs tend toward source separation at the curb to cut the cost of processing, which can have a high unit cost for a small quantity of material. Larger programs are more conducive to commingling of recyclables with a higher level of processing at a MRF, while small programs are more compatible with source separation and a reduced degree of processing.

PROCESSING FACILITIES

The success of a curbside recycling program depends not only on efficient collection but also on the location and operation of processing facilities to receive, process, and ship recyclables to available markets. The specific requirements of a collection program and the demands and specifications of the market will determine the characteristics of the MRF. Factors which influence the operating characteristics of processing centers include:

1. The type of materials accepted.

2. The method of delivery of the materials.

3. Acceptance of materials from various generators.

4. The ability to separate and process materials to satisfy the market.

5. Marketing strategies and approaches.

Processing centers are important components in successful recycling programs and take advantage of economies of scale through the assembly of large quantities of recyclables from various sources. The facilities often make use of increased processing to consistently produce large volumes of higher quality and higher value materials. Through consistent supply and quality, the processor is able to develop strong ties with the most secure, stable, and long-term markets. Such facilities complete the secondary materials recycling loop by providing high quality products in large volume to markets for reuse.

In early 1988, there were only four operating material recovery facilities in the country, according to a survey conducted by *'BioCycle.'* In May 1989, another survey by *'BioCycle'* identified additional 37 MRF's in the offing. This trend to process materials at the back side of a recycling program is commonly interpreted as an attempt to take advantage of the economy of scale from large municipal programs. The larger the program, the greater the collection savings and overall efficiency when source separation is reduced at the curb in favor of increased processing at a material recovery facility.

Some processing is required no matter which alternative is chosen for implementation. Even programs that involve stackable bins require a facility to pick out contaminants, perform some separation of materials, weigh the materials, and bale or package them for shipment to market. The basic principle, common to all material recovery facilities, is to accept commingled recyclables, separate and clean them to meet market specifications. Material recovery facilities normally fall into one of three categories with

respect to processing.

The first type of MRF accepts a commingled waste stream consisting of paper mixed with bottles and cans. The second kind of MRF is designed to accept two streams of material, a paper stream, and mixed bottles and cans. The third category of MRF in this context accepts mixed bottles and cans only.

The kind or level of processing one chooses is inextricably tied to a collection system and the market conditions peculiar to that location. For example, many MRF's accept only bottles and cans where wastepaper processing capability is well developed or prices are too volatile for developers to risk. Developers of systems designed to process completely commingled recyclables are probably motivated to adopt this alternative in order to take advantage of existing collection systems such as Sacramento's automated refuse collection methods. Appendix G of this report provides a detailed list of operating Materials Recovery Facilities, including notations about the level of processing for each. Materials processing facilities must be sized to handle peak loads and accommodate storage before shipment to market.

PROGRAM ALTERNATIVES

The collection, processing, and marketing of recyclable materials are highly interdependent functions. The availability of reliable markets is a key factor in deciding which materials should be included in a curbside recycling program. This, in turn, influences the design of the collection and material processing systems.

Certain factors, crucial to the success of the curbside program, have been evaluated in detail to determine the sensitivity of program costs as well as the impact of various alternatives on the waste stream. These include separated or mixed collection modes, frequency of collection, container type, vehicle type, existence of markets, etc.

This report examines four alternatives for curbside recycling program design:

Alternative A: Source Separation by the Resident
Alternative B: "Blue Box" Single Container With Newspaper Separate
Alternative C: Semi-Automated Collection of Commingled Recyclables
Alternative D: Fully Automated Collection of Commingled Recyclables

Each alternative is described in detail and evaluated on the basis of flexibility, feasibility of expansion, convenience to the user, need for promotion and education, marketability, and cost.

Alternative A: Source Separation by the Resident

Description: This alternative is distinguished from all other alternatives by the highest degree of source separation at the curb and the least amount of processing at a materials processing facility. Recyclables are collected weekly on the same day as regular garbage collection; this collection method typically provides residents with a set of three stackable bins. Residents place their newsprint in one container, glass and PET plastic in another, and metal containers such as aluminum, tin, steel, or bi-metal containers in the third bin. Collection of OCC would be optional. If it was decided to include OCC, residents would have to break the cardboard down or flatten it and place it next to the stackable containers at curbside.

The collection vehicles used under Alternative A would be equipped with a minimum of three bins to correspond to the separations described for the households' stackable bins. The truck would be low entry and recyclables would be loaded manually. A low chassis would be required to aid in the loading of recyclables and avoid having the driver/operator load recyclables by lifting them above the head. One driver/operator would be assigned to each truck.

Processing, at a materials processing facility, would involve magnetic separation for metal containers, a method for separating glass and PET plastic, a baler for newsprint, OCC (if included) and PET.

Alternative A is probably the most common curbside collection method in California. Communities which have implemented this approach include San Mateo; San Jose; Seattle (on the North side); San Diego; Mississauga, Canada; Austin; Berkeley; Davis; and Mecklenberg County, North Carolina.

Design Considerations: The "source separation" method of collection requires the resident or homeowner to do more source separation than any other alternative analyzed by this report. It follows that if the resident cleanly segregates the recyclables, processing will be kept to a minimum. The product for market tends to be cleaner and more valuable because of the lower risk of contamination.

Alternative A would require a minimum of processing before shipment to market. The obvious caveat to this alternative is the significantly higher collection costs, which would increase in direct proportion to the growth of the program. This is not the case with any of the other alternatives where a MRF would process materials at the back end.

Collection costs under this program would be high due to the relatively small number of residences one truck would be able to serve. Such a vehicle, with separate bins for each item collected at the curb, would have to make more than one trip back to the processing center each day. The collection vehicles utilized under the other alternatives would likely be able to remain on the route all day, even with high participation rates. Collection personnel would also spend considerably more time and labor sorting material from stackable boxes into bins on the truck under Alternative A.

One obvious advantage to this system is the savings in initial capital costs associated with processing equipment and facilities. Secondly, the material would be cleaner and better segregated, resulting in increased revenue for the material collected. This method of collection is probably best suited for smaller programs due to the investment required to build material processing facilities. However, the economics of collection could render this alternative infeasible over the long term.

The "source separation" method of collection is commonly held to be the most cost-effective alternative for smaller communities wishing to avoid the initial cost of expensive material recovery facilities for the processing of commingled materials. This alternative also allows for the inclusion of cardboard, which comprises 3.8% of the residential waste stream in Sacramento. (The inclusion of cardboard is not an option in Alternative B.)

Even with the high degree of source separation at the curb, Alternative A requires a facility to perform some intermediate processing of materials prior to shipment of materials to market. It also involves a much larger expense for containers, the stackable bins being more expensive than the single container used in Alternative B.

It is difficult to identify the number of residences which would constitute the upper limit for preferring Alternative A over other alternatives, which involve the processing of commingled recyclables. Industry representatives maintain that larger municipal programs will derive a net benefit from decreased labor and costs if a MRF is used to sort the recyclables. According to Adam Marks, Operations Engineer for Rhode Island Solid Waste Management Corporation, a MRF is "more cost-effective than separating materials at curbside when a recycling program serves more than 50,000 households." (*"Recycling Today,"* July 1989.) A final evaluation report by the Brookhaven Town Council also contends that more greatly automated plants provide for additional savings. According to Adam Marks, sophisticated MRF's are capable of recycling 15% to 20% of the waste stream, collection permitting. Alternative A, therefore, is best suited to smaller

communities. The scale of economics works for this method of collection when the possibility of expansion to a much larger program is not an issue; and the potential number of residences involved remains low.

Compatibility with Multiple Residential and Commercial Recycling Programs: Stackable containers or multiple bins do not lend themselves to recycling at apartment complexes or office buildings. Alternative A lacks compatibility with recycling programs for multiple residences and commercial establishments. Alternative A is clearly at a disadvantage, in this respect, when compared to Alternatives C and D.

Flexibility: Alternative A lacks flexibility in relation to all other alternatives analyzed by this report. When materials are source separated at the curb into different bins, and the commingling of materials is kept to a minimum, it becomes more difficult to respond to changes in waste characteristics and market developments. For example, a system involving only intermediate processing of materials, with a high degree of source separation at the curb, cannot add materials such as HDPE plastic as easily as any of the other alternative programs. One day the City may be recycling mixed paper, mixed plastics, or even tires. Alternative A does not have the flexibility or level of processing required to respond to these changes.

Feasibility of Expansion: Expansion is possible under any system. Almost all costs associated with the "source separation" alternative are related to collection. Under this alternative, the costs go up in direct proportion to the increase in residences served. Since collection is the most expensive part of any program, Alternative A is more expensive to expand than the other alternatives considered in this report.

Convenience to User: It is commonly argued, by program operators, that Alternative A is the least convenient to the user. This argument is based on the degree of source separation required of the resident. The other alternatives analyzed by this report allow the commingling of recyclables, which is more convenient to the resident since less time and effort is required.

Need for Promotion and Education: It follows that the greater the degree of source separation required of the resident, the greater the need for promotion and education. Assuming this is true, Alternative A will require a larger budget for promotion and education than the other alternatives.

Marketability of the Product: Alternative A will produce a product which is likely to yield greater revenue than will any of the other alternatives. Source separation at the curb, involving the least commingling of materials, will likely produce the cleanest materials for market. Contamination

of materials is less likely under this alternative than any other.

Cost: See Section VII of this report for details. Alternative A has the highest collection cost and the lowest processing cost.

Alternative B: "Blue Box" Single Container With Newspaper Separate

Description: The "blue box" alternative involves the commingled collection of recyclables except that newsprint is collected separately, primarily to avoid possible contamination with shards of glass. Collection occurs weekly on the same day as regular garbage collection. Residents are asked to place their glass containers, PET plastic, and metal containers such as aluminum, tin, bi-metal, or steel in the single 14-20 gallon container provided to them. Newsprint would be bundled or placed in paper bags and then stacked either next to the box at curbside or on top of it. This method of collection is regarded as relatively convenient to the resident since it allows commingling of most recyclables.

The collection vehicle must have two bins, one for the commingled containers and the other for the newsprint. The truck would be low entry with a low chassis; it would be self-dumping with loading no higher than waist height to decrease worker injury and shorten collection time. The truck would be top loading to maximize capacity. One driver/operator would be assigned to each vehicle.

Processing under Alternative B involves the separation and sorting of glass by color. Aluminum is magnetically sorted from ferrous metals and PET plastic may be sorted by one of several different processing options. Newspaper is handled separately as a distinct waste stream. A baler would be needed for PET plastic, metals, and newsprint. An adequate storage area would be provided.

This method of collection is now the preferred method of curbside collection for representatives of the San Jose and San Mateo programs. Some communities which practice this Alternative B method of collecting recyclables at curbside are Champagne, Illinois; Toronto, Canada; Concord, California; and Newark, New Jersey.

Design Considerations: A comprehensive study on the effect of different containers on participation and volume collected was conducted in Santa Barbara. Four different container types were tested in four different neighborhoods of like demographics (*"Resource Recycling,"* January/February 1989). The containers tested were sacks, buckets, stacking containers, and

single blue boxes. The study concluded that the highest pounds per set-out on a weekly basis, and the highest average pounds per household, was achieved with the single blue box. Alternative B makes use of this type of container. It should also be noted that a company, whose use of stackable containers in San Jose made that option famous, has elected to use the single container in another of its operations in Oak Lawn, Illinois. The decision was based primarily on the avoided cost for the containers, when compared to a stackable system which is about two to three times more expensive.

Representatives of the operators of programs in San Mateo and San Jose, typical of Alternative A, have recently expressed a preference for the "blue box" collection method. Given the opportunity to redesign these systems, representatives of these two privately operated recycling programs would choose Alternative B over Alternative A. This preference is based on a number of factors.

Reduced collection costs is one design consideration. The strength of this alternative, compared to Alternative A, is that a vehicle with only two compartments is more efficient. This type of truck can remain on the route longer before returning to a processing facility. There are also considerable labor savings involved with less source separation at the curb.

One disadvantage of this collection method is the exclusion of OCC. Due to the bulkiness of OCC, it would not be feasible to include it for collection since this would increase the collection labor, in addition to sharply reducing the capacity of the trucks for increased passes-by.

Alternative B may reduce program liability due to a reduction in the risk of worker injuries. A number of semi-automated collection vehicles compatible with this alternative are available. This type of collection would reduce the need for the worker to stoop or lift materials, as compared to Alternative A.

Another important design consideration driving this alternative is the separation of fiber or newsprint from glass containers. A common problem, associated with some programs offering commingled collection, is that once newsprint is compacted with glass, the newsprint can become contaminated with glass shards, making it unmarketable. This alternative avoids that problem.

Compatibility with Multiple and Commercial Recycling Programs: Alternative B is incompatible with recycling at businesses and multiple residences such as apartment complexes. Both Alternatives A and B lack compatibility with commercial recycling opportunities.

Flexibility: Alternative B is much more flexible than Alternative A. Under Alternative B, materials may be added to a collection program with little trouble since recyclables are commingled in a single container. The system is designed to sort the waste stream at a processing facility. This alternative is in a better position to market variations and changes in the composition of the waste stream.

Feasibility of Expansion: Materials may be added to a program using a commingled method of collection with little or no redesign of the system, assuming, of course, that processing facilities are constructed to accommodate expansion and additions. While over-building a processing facility may cost more initially, it is standard practice in the resource recovery industry.

The expansion of a curbside collection program under this alternative should involve a lower unit cost than would Alternative A. Since the unit cost of collection is less, the cost of collection would not rise as quickly under this alternative. Thus, expansion of the program would not greatly increase the cost of the portion of the program which is most expensive to begin with. Processing costs would rise somewhat, but overall increases should be less due to the less intensive labor on the collection side. Again, this presumes the processing facility is designed for easy expansion.

Convenience to the User: According to the Phase One Report and Proposed Action Plan prepared by the Sacramento City Recycling Subcommittee, the "city should provide all residents with the opportunity to recycle used products as conveniently as they can presently dispose of those used products." It follows from this premise that Alternative B is more convenient than Alternative A since residents will be allowed to commingle their recyclables. Since newspaper is normally stacked, this separation poses no inconvenience to the resident.

Need for Promotion and Education: Education and promotion is arguably one of the most important aspects of a successful curbside recycling program. However, this alternative allows residents to commingle containers, which may reduce the long-term expense associated with educating the public to "source separate" their recyclables under Alternative A of this analysis.

Cost: See Section VII of this report. Collection costs are less than Alternative A. Processing costs are greater than Alternative A.

Marketability of the Product: The collection of newsprint separate from containers serves to avoid a common complaint with respect to the contamination of fiber by shards of glass. Compared to Alternative A, this alternative may involve greater breakage of glass, which could lead to less

revenue and a higher percentage of rejected materials. Alternative B does retain the advantage of attempting to reduce contamination with two waste streams, one fiber and one consisting of containers, while reducing collection expenses and increasing consumer convenience.

Alternative C: Semi-Automated Collection of Commingled Recyclables

Description: This alternative would provide residents with a 60 or 90 gallon container for the collection of completely mixed recyclables. Collection would be weekly on the same day as regular garbage collection. Newsprint, OCC, metal (consisting of bi-metal, steel and aluminum containers), PET plastic and glass containers would all be commingled in the one container.

The collection vehicle used for Alternative C would be a rear loader packer with a can tipper. The collection vehicle is operated by one driver/operator. This option, along with Alternative D, involves the highest degree of processing since the recyclables, including fiber, are totally commingled.

Design Considerations: The use of a can tipper, with a semi-automated system, will reduce the risk of worker injury over Alternatives A and B. Driver/operators will not have to lift recyclables for deposit in the collection vehicle. The collection vehicle will also be able to remain on a route longer than with the first two alternatives. This alternative may significantly reduce collection costs, while affording the driver an opportunity to screen for contaminants, which cannot be done with a fully automated system. Another consideration is the belief that commingling is a deterrent to scavenging.

Alternative C also allows for the collection of OCC as a commingled item in the container. Alternative B does not allow for this option; Alternative A involves the labor intensive separation of cardboard at curbside.

Compatibility with Multiple Residential and Commercial Programs: This method of collection is compatible with recycling at many apartment complexes and businesses. Businesses and multiple units could be provided 60 or 90 gallon cans or bins for the commingled collection of recyclables. This is not an option under Alternatives A or B.

Flexibility: Alternative C is more flexible than either Alternatives A or B. Materials may be added without change to the collection method or vehicle. With materials processed at a recovery facility, a commingled waste stream could accommodate additional sorting without change in the collection method.

Feasibility of Expansion: Alternative C could be expanded with the addition of vehicles and personnel on the collection side. Unit cost would rise more slowly with expansion than under Alternative A. The cost of expansion of the program under Alternative C is likely to be comparable to that of Alternative B.

Convenience to User: Alternatives C and D may be the most convenient alternatives under this analysis. Guided by the premise that a curbside collection system should be as convenient to the user as regular refuse disposal, a completely commingled container for recycling is the most convenient to the resident. Residents need not separate recyclables from one another. They would be placed in one can, which could be wheeled to the curb.

Need for Promotion and Education: Since Alternative C involves the total commingling of recyclables, there is less behavior modification required in persuading the public to recycle at the curb. Alternatives C and D may involve less long-term public education costs than both Alternatives A and B since residents will not be required to sort their recyclables.

Cost: See Section VII of this report. Collection costs are lower than Alternatives A and B. Processing costs are slightly higher than Alternative B because the fiber materials are combined with the recyclable containers.

Marketability of the Product: There are two caveats to curbside collection of recyclables using a compaction vehicle. The first involves the degree of glass breakage. Glass markets are becoming tighter and broken glass may soon be unmarketable. Glass, with greater than 10% breakage, is approaching unmarketability in the Bay Area. Second, glass which is broken cannot be color sorted. Our market for glass currently requires a two-color sort for premium price. Glass will probably have to be three-color sorted within two years. Therefore, a collection method with significantly higher glass breakage could lead to the collection of material with decreased revenue return over Alternatives A and B, and lower recovery due to higher percentage of rejected material. Attempts to quantify the amount of breakage, from collection systems that use compactor trucks is difficult due to the proprietary nature of much of the information.

The second caveat to Alternative C is that the compaction of fiber with glass containers can lead to contamination of the newsprint and OCC. This concern is shared by a number of industry representatives due to the unmarketability of fiber that has shards of glass pressed into it.

Again, proprietary information makes it difficult to research specific information regarding this

caveat. It may be possible to mitigate contamination from the compaction of commingled materials in a collection vehicle by adjusting the hydraulic pressure under which compaction occurs.

Alternatives C and D may also mitigate the degree of glass breakage by employing an age-old method of collection that may be utilized for any of the alternatives. Driver/operators could be instructed to line the bottom of their trucks with PET plastic at the beginning of the day to minimize breakage. A further measure, to reduce breakage at the processing stage, is to construct a processing facility with wood floors underneath picking stations and where loads are tipped.

It is likely that Alternatives C and D will produce a material for market which will garner less revenue than under Alternatives A and B. Due to the commingling of all recyclables, it is likely that the percentage of rejected material for Alternatives C and D will be higher than Alternatives A and B. However, the decreased collection expenses must be balanced against market revenue and diversion rates.

Alternative D: Fully-Automated Collection of Commingled Recyclables

Description: This alternative would involve the collection of totally commingled recyclables in a 60 or 90 gallon can, which would be provided to residents. One driver/operator would be assigned to each vehicle. Collection could occur on the same day as weekly refuse collection, in conformity with the other alternatives being analyzed by this report. A variation of this collection frequency would be to cut back to monthly, or less frequent, collection. Less frequent collection could prove justified on the basis of sporadic set-outs by participating households. With a capacity of 60-90 gallons, residents may be inclined to set their containers out only once each month. Monthly collection could occur on a Saturday so that side loaded packer trucks in our existing fleet could be utilized.

Residents would be able to conveniently commingle their PET plastic, glass containers, metal containers (consisting of aluminum, bi-metal, steel, and tin), newsprint, and OCC. Processing under this alternative would be the same as under Alternative C. Since this alternative involves totally commingled recyclables, the level of processing is much more involved than either Alternatives A or B. A material processing facility is required to separate all of the above materials. Adequate storage of materials would be provided prior to transfer of materials to market.

This method of collection is not commonly practiced. However, it is clearly most compatible with our current refuse collection systems. Examples of municipalities, which employ this alternative for their curbside programs, are Islip, New York; Phoenix, Arizona; and Seattle, Washington, on the South Side (Rabanco).

Design Considerations: Three variations of this collection method are offered. Under the first variation, the frequency of collection would be monthly on a Saturday. This variation (D-1) allows the use of existing packer trucks and avoids the expense of purchasing new vehicles to accommodate a curbside recycling program. Although the expense of purchasing containers is significantly greater than under Alternatives A and B, collection expenses would be greatly reduced due to higher productivity, outweighing the added expense of a more costly 90 gallon container. This variation of Alternative D is wholly compatible with our current refuse collection methods.

The second variation of Alternative D is the weekly collection of recyclables on the same day as regular garbage collection (D-2). Under this variation of Alternative D, residents would be provided a 60 gallon can for regular weekly refuse collection. The 90 gallon can currently used would become the recycling container. In this manner, residents would be encouraged to reduce their regular refuse disposal, while being provided a container allowing for the commingling of recyclables over a period time, including cardboard.

Residents, provided with a 90 gallon container for recyclables with weekly collection service, would have the convenience of putting out their recyclables on any regular refuse collection day. However, with a container capacity of 90 gallons, they would be less likely to put it out every week. This would further reduce collection expenses since the recycling truck would be able to make many more passes by in a single day.

The third variation of Alternative D is monthly collection on the same day as regular garbage collection (D-3). An example would be regular garbage collection taking place on Monday and recyclables collected on the first Monday of each month. This variation reduces the number of collection vehicles required when compared with weekly collection. By scheduling monthly collection on the same day as regular garbage collection, there may be less likelihood of residents forgetting to place their can at the curb. Collection is viewed as more convenient as the residents will not be required to place their can at the curb Friday night or early Saturday morning, as required with monthly collection on a Saturday.

Another design consideration with the use of a 60 or 90 gallon container is that recyclables are

kept dry in inclement weather; the opportunity to place garbage or litter in containers is reduced. Residents do not have to strain their backs to take out the recyclables. And, as with Alternative C, commingling of recyclables serves as a deterrent to scavenging. Scavengers will be reluctant to dig through commingled containers to pick out the most valuable commodities.

Automated collection, under all variations of this alternative, would reduce the risk of worker injury. Employee morale is improved; workers need not strain their backs to recycle our refuse; workers would not need to exit and reenter their vehicle cabs at every pick-up; collection costs would be greatly reduced; and fewer collection vehicles with fewer drivers could cover the same number of residences as under the other alternatives analyzed in this report.

Compatibility with Multiple Residential and Commercial Programs: Alternatives C and D are wholly compatible with multiple residential and commercial programs. Ninety gallon containers could be provided to many apartment complexes and businesses and recycled with the same vehicle fleet.

The first variation of Alternative D (D-1) involves no purchase of additional collection vehicles. With monthly Saturday collection, vehicles in our current fleet of refuse vehicles would be used. Under the second variation (D-2), new side loader garbage trucks would have to be purchased to accommodate weekly collection on the same day as regular garbage collection. Because both of the containers and trucks are wholly compatible with regular garbage collection, there is little financial risk to the City. If it is determined that another alternative is preferred following initial implementation of Alternative D, both containers and garbage trucks purchased under this alternative may be folded into the regular garbage collection system with no financial loss to the City.

Under the third variation of Alternative D (D-3), monthly collection on the same day as regular garbage service, the vehicle requirement will be less than weekly collection on the same day as regular garbage service, but more than monthly collection on Saturday.

Flexibility: Alternative D is probably the most flexible of all options. Since all recyclable materials are sorted and separated at a MRF, materials can be added without any change to the collection method. Since we may recycle many additional materials ten years from now (such as tires, mixed paper, or mixed plastic), it is important to have a method of collection which allows for this flexibility.

Need for Promotion and Education: Alternatives C and D may involve the least expense related to education and promotion. Since residents are conveniently offered the opportunity to commingle all recyclables in a single container, Alternatives C and D involve the least behavior modification. Some education will be required at program start-up, if one of the variations involving monthly collection is implemented, to be sure that residents are familiar with the collection schedule.

Cost: See Section VII of this report. Alternative D provides by far the least costly collection. Processing costs are comparable to Alternative C and are somewhat more than Alternatives A and B.

Marketability of the Product: The only difference between Alternatives C and D is that Alternative C involves the use of a semi-automated rear loading garbage truck; Alternative D involves the use of a fully automated side loader. Therefore, the same considerations regarding the marketability of a product under Alternative D apply to Alternative C.

V. EDUCATION AND PROMOTION

PROGRAM OBJECTIVES

As indicated earlier in this report, there are many variations in the curbside recycling programs operated by different communities. Similarly, the focus and approach of the accompanying education and outreach programs differ depending upon community needs and resource constraints. There is widespread agreement, however, that an ongoing, extensive public education effort is essential to the success of any recycling program. The public education component of a recycling program has several key objectives:

1. The program should develop a recycling ethic and increase environmental awareness (the impact of this will extend beyond participation in curbside recycling) to changing consumer habits, and ultimately reduce waste.

2. The program should ensure that recycling will be viewed as one of the City's most important efforts.

3. The education program must not only convey why recycling is important, but also let residents know what is expected of them -- how to separate and prepare recyclables for collection, how often to place containers at curbside, how to purchase wisely to reduce waste.

EXPERIENCES OF OTHER COMMUNITIES

The experiences of other communities operating curbside recycling programs have provided a variety of ideas for the City of Sacramento to consider in developing an education program. Six cities, in particular, were surveyed about their public information efforts: Charlotte, North Carolina; Seattle, Washington; Los Angeles, San Jose, Modesto, and Fresno. The tools and techniques recommended by the recycling program staff members in these communities include:

School Visits and Curricula
Speaker's Bureaus
Media Briefing Kits for Community Leaders
Utility Bill Inserts
Utility Bill Messages
Special Events
Newspaper Coverage

Radio Public Service Announcements
Paid Advertising
Newsletters
Celebrity Spokesperson
Production of Video for Service Groups
Billboards
Giveaways and Merchandise, Including:
- Refrigerator Magnets
- Litter Bags
- Note Pads
- Book Covers
- Coloring Books
- Pencils
- Bumper Stickers
- Frisbees (made from recycled plastic)
- Bookmarks
- Life-Size Costumed Mascots Such as "Clark Can, Nancy News, Wizard of Waste"

EDUCATION AND PROMOTION PROGRAM ASSUMPTIONS

The success stories and hard lessons learned by these communities provide us with a wealth of experience and material from which to design a Sacramento program. The following assumptions guided the approach:

1. The pilot curbside recycling program will consist of 24,000 households. Therefore, the public education campaign will be targeted to the neighborhoods served. Use of City-wide publicity techniques such as radio PSA's, utility bill inserts, newspaper advertising, billboards, etc., are not recommended. Should the City elect to implement a City-wide curbside program, these elements will be evaluated for inclusion in the education and promotion strategy.

2. The public education campaign must be continuous rather than a "blitz" as the program is initiated. In order to achieve and sustain high levels of participation, residents should receive a continuous stream of outreach, education, and promotion information.

3. The program must be tied together using a common theme and logo. The theme should be positive, motivating, and appealing. Examples include:

"Recycling is the Way for San Jose"
"Reclaiming the Past for the Future (Modesto)"
"Recycle. Once is Not Enough"

A logo should symbolize the program and augment the theme. Samples of logos used by various cities are included in Appendix H. (It should be noted that the use of color enhances the appeal of the logo significantly.)

PROPOSED PROGRAM

The proposed public education program for curbside recycling focuses on two key areas: school involvement and neighborhood participation.

School Involvement: The development of a recycling ethic and increased environmental awareness among the children in the affected neighborhoods is perhaps the most important element of the education program. Children are our future consumer recycling base, and we need to instill attitudes and habits they will carry with them into adulthood. Specifically, children in the third and fourth grades will be targeted as they are old enough to understand the recycling message, they are influenced by what they see and hear, and they greatly influence their family members and friends.

The school program will begin with a "kick-off" during Public Works Month in May. Program staff will conduct a "mini-assembly" with second and third grade students. Children will learn the "Recycle Rap" from a costumed mascot along the lines of the "Clark Can" character developed by the Sate Department of Conservation. Using visual aids, the program staff will explain why recycling is important and how easy it is to participate in the curbside program. At the close of the assembly, students will be given a fun reminder of the day's recycling lesson; one idea is "neon" sunglasses, similar to those recently distributed by a fast food chain, imprinted with a slogan such as "Reduce•Reuse•Recycle."

In the fall, third and fourth grade teachers, at the schools in the target areas, will be provided with the curriculum and materials for recycling education in the classroom. Several curricula have been designed, and are available from the Solid Waste Management Board, featuring such characters as the "Trash Monster" and the "Wizard of Waste." The recommended approach is one lesson each month, perhaps as a part of the science lesson. A second assembly will be conducted, and students will be given book covers and neon pencils imprinted with the recycling slogan. The giveaways are important as they serve as an ongoing reminder to the children of the recycling message.

Neighborhood Participation: The aim of neighborhood education is to have participation in curbside recycling and viewed as something good for the neighborhood – one of the civic responsibilities of residents. To achieve this, the education program must educate the residents, not only about the need for recycling, but how to participate in the program, how to prepare materials for recycling, what separation (if any) is required, when to put the container out to the curb, etc. The thrust of this effort must be that recycling is both necessary and easy.

A key element of the neighborhood program is the designation of block leaders. These volunteers will give the program a one-on-one approach and help convey the message that recycling is a neighborhood responsibility. Block leaders can be used to distribute materials such as literature and door hangers to their neighbors and answer their questions and concerns about the program.

The curbside program will be introduced through several mechanisms. Community meetings may be held with the appropriate Councilmember and recycling program staff. An introductory brochure will be direct mailed to all affected residences, explaining the recycling program and outlining the participant's responsibilities. When the containers for recyclables are delivered, a second flyer will be provided with reminders about the program start date, schedule, etc. As an ongoing program, block leaders will distribute refrigerator magnets, note pads (made of recycled plastic), door hangers, and so on, all printed with the recycling slogan and logo and serving as daily reminders to "reduce•reuse•recycle."

If participation rates dip after the program start-up, block leaders may be asked to visit their neighbors to find out the reasons for the decline and to persuade residents to recycle. Block leaders can also be an excellent source of information regarding any problems or opportunities for improving the curbside program.

Each time an event of any type is held in one of the participating neighborhoods, a representative of the recycling program should attend to distribute information and "freebies," such as coloring books, magnets, litter bags, etc. The function itself may have nothing to do with recycling – it may be a Fourth of July picnic, a parade, or a school carnival. Again, the point is to integrate a recycling ethic within the community and covey the message that recycling is an ongoing part of our lives.

MISCELLANEOUS

The bulk of the program budget will be earmarked for the school and neighborhood involvement aspects of the education effort. However, there are many relatively inexpensive ways we can remind people daily about recycling.

City Vehicle Signage: City garbage, garden refuse, and recycling vehicles should be equipped with decals conveying the recycling slogan and logo. These vehicles are seen regularly in the neighborhoods and will help demonstrate that recycling is a part of the overall waste management picture.

Local Newspapers/Newsletters: Local, neighborhood publications can be an excellent way of providing program information at no cost. Articles, photographs, and even advertisements may be included in publications, depending upon participating neighborhoods.

Other possibilities include bus bench/shelter signage; exhibits in bank lobbies or neighborhood library branches; posters displayed in the windows of local businesses; and a speaker's bureau for neighborhood associations, homeowners's groups, etc.

In summary, the proposed public education program focuses on the schools and the households in the neighborhoods participating in the curbside program. It must be an ongoing, positive effort, which will motivate residents and keep participation levels high. A central theme and logo should be developed to create a program identity and tie together the various elements of the campaign.

Program Staffing: An ongoing, effective public information campaign requires adequate staffing and resources. While the City's Public Information Officer and the Waste Reduction Coordinator can perform many of the planning and design tasks, the addition of a Recycling Public Education Coordinator, within the Solid Waste Division, is recommended. This position will be charged with managing the overall public information program, including coordination with the schools, supervision of the Block Leader Program, development of marketing techniques and strategies, and response to public inquiries, questions, and concerns.

In addition to the Public Education Coordinator, it is suggested that four to six part-time, temporary clerical positions be added when the curbside program is initially implemented (approximately 1.5 FTE). These positions will field inquiries and distribute information to residents regarding the program. As the program gains acceptance and residents become familiar with the curbside collection of recyclables, this customer service staff can be reduced. Similarly, if the program is expanded in the future, additional staff will be needed.

Program Budget: The cost of the public education and promotion campaigns are included in Section VII of this report. In addition to the staffing discussed above (2.5 FTE), a budget of $3 per household ($75,000) is recommended for materials such as school curricula, book covers, refrigerator magnets, door hangers, posters, etc.

VI. PROGRAM REVENUES AND COST AVOIDANCE

Summary: Revenues from curbside recycling, and avoided landfill costs, can be expected to be minimal, regardless of the recycling alternative chosen or the level of household participation. Within the target area, the revenue and avoided costs would fall between $24,573 and $270,808 per year. The best estimate of the total is the midpoint of $133,907.

Revenues: The sale of recycled materials to local markets will produce some revenue. However, the dollar recovery is expected to be small. Revenues from sales may range from $10,522 to $157,753 per year, depending on the market price received from the sale of the materials, and on the expected material recovery rates. Based on the best information available, sales revenue will be about $76,220. The market prices for recycled materials fluctuate and are difficult to predict. As a general rule, relatively conservative price per ton estimates were used, as shown in the table below.

TABLE 6.1
PRICE RANGE FOR RECYCLABLES AND SELECTED RATE FOR PROJECTIONS

Item	Price Range/Ton	Selected Rate
Newspaper	$ 5-15	$ 10
Glass	80-60	120
Aluminum	1,400-1,600	1,400
Scrap Metal	40-80	50
Plastic	480-960	480-650
Cardboard	15-20	15

The expected recovery rate of materials is also a factor in the revenue projection. The recovery rate is defined as the percent of recyclable materials that is expected to be recovered out of the total available recyclable materials in the target area. This differs from participation rates, which are based on the number of households participating in the recycling program. Participation rates do not provide any indication of the impact of recycling on the waste stream. If 100% of the households participated, but each put out only one aluminum can, the impact on the waste stream would be very small. Therefore, a measurement based on household participation levels would not be meaningful. Instead, a statistic that measures the expected recovery of recyclable materials is used. After studying recovery rates in other communities, it has been estimated that Sacramento can collect 31% of the materials available in a weekly collection program. This percentage is a combination of varying rates for the different materials collected. For example, newspaper will likely have the highest recovery rate (52%), while lesser rates are

expected for aluminum and scrap metals (9% each).

At a combined 31% recovery rate and an average annual tonnage of 2,024 tons, revenue of $76,220 is projected. In Appendix I, Table 1 provides details of the expected revenue under various recovery scenarios.

Avoided Landfill Costs: Whenever materials are collected for recycling, the cost of hauling those materials to the landfill and paying the tipping fee can be avoided. Assuming average hauling costs of $18 per ton and tipping fees of $10.50 per ton, the avoided landfill costs are projected at $57,687. As with recycling revenues, the amount of avoided costs will vary depending on the recovery rates (the tonnage collected). In Appendix I, Table 1 presents varying tonnage collection amounts and the impact on the avoided landfill costs. The avoided costs range between $12,051 and $113,055. This revenue is not included in the rate projections as the City does not incur landfill tipping fees or hauling costs at this time.

PROGRAM COSTS AND RATE IMPACTS

Summary: Recycling is an expensive process. There are costs involved for containers, trucks, and labor for collection of recyclables, sorting/processing of materials, and promotion and education, to name a few. Six recycling alternatives are being listed in this report as each alternative will have a different impact on garbage rates. As a refresher, the different alternatives are identified below:

Alternative A: Source Separation by the Resident
Alternative B: "Blue Box" Single Container With Newspaper Separate
Alternative C: Semi-Automated Collection of Commingled Recyclables
Alternative D-1: Fully-Automated, Monthly Collection of Commingled Recyclables on Saturday
Alternative D-2: Fully-Automated, Weekly, Same Day Collection of Commingled Recyclables
Alternative D-3: Fully-Automated, Monthly, Same Day Collection of Commingled Recyclables

The ongoing costs associated with the six alternatives range from $420,000 (Alternatives D-1 and D-2) to $829,000 (Alternative A). Capital expenditures for the alternatives range from $781,000 (Alternative B) to $2.2 million (Alternative C).

It should be noted that each alternative assumes that the City contracts out the sorting/processing functions of the program. If the City had to build its own facility, the construction and operation costs could add an additional $1.25 million to the recycling program.

For discussion purposes, Alternative D-3 (fully automated, monthly same day collection) will be used to illustrate the variables associated with expenditures in a recycling program. After a thorough discussion of the cost elements for this alternative, the cost differences for the other alternatives will be compared in Table 6.3.

Collection Costs: Alternative D-3 (fully automated, monthly same day collection).

Collection costs refer to the labor, bins and vehicles necessary to containerize and pick up recyclable materials from households and deliver the materials to the processing plant. First year collection costs will be about $2.2 million, comprised of $1.8 million in start-up costs and $420,000 in ongoing costs.

Capital: Capital costs for collection are primarily for trucks to collect the materials from the curb and for the purchase of the 60 gallon containers. Assuming that there will be monthly pick-up of recyclables with 1,000 passes-by per day, one side-loading, fully-automated truck will be required at a cost of $115,000. The purchase of 25,200 sixty gallon containers (5% replacement rate) will cost $1.5 million. If the capital costs were debt financed over a seven year period, the annual debt service would be approximately $338,000.

Operating: Operating costs for collection will be $420,000 per year. This assumes that one Sanitation Worker will be required to drive the collection vehicle. Operating supplies, maintenance, vehicle maintenance, and overhead will also be required.

Sorting and Processing Costs: Sorting and processing costs include labor to sort the recyclable material; equipment to move, bale and weigh materials; storage; and transportation of materials to market. Annually, the cost of the materials recovery function will be approximately $125,000. This estimate assumes that the City will contract out for sorting and processing services and is based on the Los Angeles report cost for a 100 ton-per-day facility reduced to suit Sacramento's needs. Assuming a maximum tonnage per day in Sacramento's target area of ten tons, a rough 10% of the Los Angeles cost estimate was used.

If the City needed to construct its own facility because outside contracting proved not to be a desirable alternative, the City would likely want to build a high capacity plant to allow for future expansion and possible sharing with the County. Using a 100 ton-per-day facility as an estimate, the site and plant (debt financed) and its operation could cost approximately $1.25 million per year.

Education/Promotion: Other jurisdictions surveyed all agreed that educational and promotional activities are vital for the success of a curbside recycling program. The City program will concentrate on two key

areas: school involvement and neighborhood participation. Educational activities must be ongoing to instill a recycling ethic in the public mind and to ensure continual participation in the recycling program. The details of the education/promotion plan are discussed elsewhere in this report. Requirements for the program include $82,000 for 2.5 FTE for coordination and $75,000 per year for promotional materials, brochures, outreach, and other supplies and materials.

Contingency: A small contingency of $80,000 or 4% of total program costs was included in the cost model.

RATE IMPACTS

Utility rate increases will be required to implement the curbside recycling program. The percentage increase will range between 3.95% and 80.78%, dependent on two factors: the method of financing and the method of cost allocation (see Table 6.2 for details). The methods of financing are: (a) paying cash for all operating and capital program costs; or (b) debt financing the capital portion of program costs. Cash financing will result in large rate increases in the first year of the program because the truck and bins would be paid for up front. Rates, after the first year, drop substantially. The cash financing could be phased in over a two-year period, if desired. Under a debt financing option, the capital costs are spread over a period of seven years, thereby providing a more moderate and level rate for all years. However, higher overall costs will result in this method due to the costs of financing.

The second factor affecting the rate increase is the method of cost allocation. That is, who should pay for the recycling program? All residents, only residents in the target area, or all accounts, whether commercial or residential? If the net program costs of $2.1 million are spread to all 100,000 households in the City, the immediate rate increase required per household will be 20.41% or $1.87 per month. This rate will drop after the first year due to the one-time capital costs. Under the debt financing method, the rate increase would be 7.21%. Charging all households for recycling, even though the service is not available at all homes, is a customary procedure for City services because recycling benefits the City as a whole and not just those who participate in the program.

If only those households in the target area receiving curbside recycling services were charged, the rate impact on those 24,000 homes under the cash financing method would be an immediate 80.78% or $7.38; a heavy burden for a service of City-wide benefit. Under the debt financing method, the rate increase would be 28.52% or $2.60 per month.

It could be argued that since recycling is of City-wide benefit, commercial accounts should also share in the cost. However, in recent solid waste budgets, particular emphasis has been given to correcting

existing inequities in the current billing arrangement because commercial accounts have been subsidizing residential. Therefore, charging commercials an additional fee would tend to reduce the effect of previous efforts. For informational purposes, if commercial accounts did share in recycling costs, the rate increase for both residential and commercial accounts would be 11.19% under the cash financing method or 3.95% under the debt financing method.

It should be noted that if the City were to construct its own materials processing facility, the impact on rates would be substantial. Additional increases over those projected above would be approximately 10%, spread to all residential households.

TABLE 6.2
RATE IMPACTS UNDER THREE REVENUE BASE OPTIONS

Options	Rate Increase	
	Cash Financing	Debt Financing
1. Residential Customers		
Ongoing Costs	3.30%	3.30%
One-Time Capital Costs	17.11%	3.91%
TOTAL	20.41%	7.21%
2. Target Area Customers Only		
Ongoing Costs	13.06%	13.06%
One-Time Capital Costs	67.72%	15.46%
TOTAL	80.78%	28.52%
3. All Residential and Commercial Customers		
Ongoing	1.81%	1.81%
One-Time Capital Costs	9.38%	2.14%
TOTAL	11.19%	3.95%

TABLE 6.3
RECYCLING COSTS AND REVENUE BY ALTERNATIVE

	A	B	C	D-1	D-2	D-3
Program Revenues						
	$ 73,732	$ 73,732	$ 76,220	$ 76,220	$ 76,220	$ 76,220
Ongoing Expenditures						
	828,079	796,754	696,485	420,001	668,148	420,001
Cost Per Participating Household Per Month						
	2.98	2.77	2.41	1.46	2.32	1.46
One Time Capital Expenditures						
	986,900	781,070	2,152,600	1,667,600	2,127,600	1,782,600
Cost Per Participating Household Per Month						
	3.43	2.71	7.47	5.79	7.39	6.19
TOTAL EXPENDITURES						
	1,814,979	1,577,824	2,848,685	2,087,601	2,795,748	2,202,601
Net Program Expenditures						
	1,741,248	1,504,092	2,772,465	2,011,381	2,719,528	2,126,381
FTE	8.50	8.50	7.50	3.50	6.50	3.50

CORRECTED - SEE NEXT PAGE -

ALTERNATIVE COMPARISONS

The net expenditures and rate impacts, described previously, relate to only one alternative, Alternative D-3. The results would be different for each of the five remaining alternatives. Table 6.4 below is a summary table of the revenues and expenditures that could be expected under each alternative. Table 6.5 identifies the rate impacts and tonnage recoveries under each scenario. The differences under each alternative are discussed below. (The rate increases shown are predicated on the assumption that the increases are spread to all residential accounts.)

TABLE 6.3
RECYCLING COSTS AND REVENUE BY ALTERNATIVE

	A	B	C	D-1	D-2	D-3
Program Revenues	$ 73,732	$ 73,732	$ 76,220	$ 76,220	$ 76,220	$ 76,220
Ongoing Expenditures	828,079	796,754	695,485	420,001	668,148	420,001
Cost Per Participating Household Per Month	2.88	2.77	2.41	1.46	2.32	1.46
One Time Capital Expenditures	986,900	781,070	2,152,600	1,667,600	2,127,600	1,782,600
Cost Per Participating Household Per Month	3.43	2.71	7.47	5.79	7.39	6.19
TOTAL EXPENDITURES	**1,814,979**	**1,577,824**	**2,848,085**	**2,087,601**	**2,795,748**	**2,202,601**
Net Program Expenditures	1,741,248	1,504,092	2,771,865	2,011,381	2,719,528	2,126,381
FTE	8.50	8.50	7.50	3.50	6.50	3.50

ALTERNATIVE COMPARISONS

The net expenditures and rate impacts, described previously, relate to only one alternative, Alternative D-3. The results would be different for each of the five remaining alternatives. Table 6.4 below is a summary table of the revenues and expenditures that could be expected under each alternative. Table 6.5 identifies the rate impacts and tonnage recoveries under each scenario. The differences under each alternative are discussed below. (The rate increases shown are predicated on the assumption that the increases are spread to all residential accounts.)

Alternative A: Source Separation by Resident: Alternative A would cost a net of $1.7 million in the first year (cash basis), resulting in an initial rate increase of 16.71%. This alternative is characterized by the highest degree of manual operations resulting in risk to workers and high labor and vehicle costs on an ongoing basis. The collection of cardboard under this alternative is not recommended. This would slightly reduce the revenue recovery, but would also reduce the sorting and processing costs.

Alternative B: "Blue Box" Single Container With Newspaper Separate: Alternative B would cost a net of $1.8 million in the first year (cash basis), resulting in a rate increase of 14.44%. Characteristics of this alternative include relatively inexpensive container costs ($5 each), but high collection costs. Collection costs are high because sanitation workers must manually empty the containers, resulting in fewer households being served in one day. A large number of staff (9.5 FTE) is required under this alternative. Cardboard would not be collected under this alternative, which would slightly reduce the revenue, but this would be offset by decreased processing costs.

Alternative C: Semi-Automated Collection of Commingled Recyclables: This alternative is the most expensive because of high collection costs and high container costs. Net expenditures would be $2.8 million equating to a rate increase of 28.80%. Collection costs are high because the containers are expensive ($60 each) and operators must visually monitor the loads as they are being dumped into the truck. A reduced number of passes-by increases vehicle requirements as well.

Alternative D-1: Fully-Automated, Monthly Collection of Commingled Recyclables on Saturday: Alternative D-1 is a relatively inexpensive alternative primarily because the collections are monthly and existing side-loader trucks can be utilized. The net expenditures would be $2.0 million, equating to a first year rate increase (cash basis) of 8.80%. Only 3.50 FTE would be required to implement this alternative.

Alternative D-2: Fully-Automated, Weekly Same Day Collection of Commingled Recyclables: Alternative D-2 is costly due to the expensive containers ($60 each) and because pickups are made weekly. The net expenditures are $2.7 million, the equivalent of a 28.10% rate increase in the first year (cash basis). Staffing requirements are 9.5 FTE.

DELETED

TABLE 6.4

PROJECTED RATES/INCREASES AND TONNAGE BY ALTERNATIVE

	A	B	C	D-1	D-2	D-3
Rate Increase (%) for Ongoing Expenditures						
	7.24%	6.94%	5.94%	3.30%	5.68%	3.30%
Rate Increase (%) for One-Time Capital Costs						
	9.47%	7.50%	20.66%	16.00%	20.42%	17.11%
TOTAL (% Inc.)	**16.71%**	**14.44%**	**26.60%**	**19.30%**	**26.10%**	**20.41%**
Rate Increase ($/Month) for Ongoing Expenditures						
	.66	.63	.54	.30	.52	.30
Rate Increase ($/Month) for One-Time Capital Costs						
	.87	.69	1.89	1.46	1.87	1.56
TOTAL $/MONTH	1.53	1.32	2.43	1.76	2.39	1.87
Tons						
	1,958	1,958	2,024	2,024	2,024	2,024
$/Ton						
	$937	$809	$1,369	$994	$1,344	$1,050
% Diversion from Landfill						
	1.02%	1.02%	1.11%	1.11%	1.11%	1.11%

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VII. CURBSIDE RECYCLING IMPLEMENTATION SCHEDULE

INTRODUCTION

It is the intent of this chapter to provide the City Council with an understanding of the implementation framework for the recommended residential curbside recycling program. As stated in City Council Resolution #89-685, the implementation of a household curbside recycling program is dependent upon the requirements of CEQA. If the program to serve 25% of City households can be considered a "pilot program" for purposes of CEQA, the implementation schedule outlined below could begin with City Council approval of the program. If, however, an EIR must be prepared, curbside program implementation could not receive Council authorization until after December of 1990; the implementation activities would be delayed approximately 12 months.

In addition to CEQA compliance, two major scheduling elements are identified: the first element is the time needed to put in place the staff, support services, and equipment essential to collection start-up; and the second, a key element, is the time needed to establish marketing and processing capability. The time lines developed reflect our normal "business-as-usual" approach. If this approach is inconsistent with the City Council's desires, staff could explore an expedited collection implementation program. Expedited implementation would require an increased commitment of resources and some policy modifications. Staff does not recommend an expedited program.

If the household curbside recycling program recommended in this report is accepted, 25% of the City's households could receive curbside recycling service within 22 months. The proposed recycling program could be phased in to serve all City households in five years. These dates represent a balance between the desire to establish curbside recycling quickly and the pragmatic realities of setting up an accountable and logistically complex program.

PERSONNEL SELECTION

The personnel needed to staff the curbside recycling program must be recruited, tested, and selected in accordance with the Civil Service process. The classifications tentatively proposed for program implementation are:

Collection/Public Education:

Sanitation Worker II
Typist Clerk I (Relief)
Public Information Coordinator

Based upon the schedule for delivery of the collection vehicles, the Public Information Coordinator should be hired six to nine months after City Council's approval of the program. This will allow time to design the program materials, develop liaison with the schools, and prepare the education program for implementation within the first phase of the curbside collection program. If the Personnel Department approves the use of this classification, a person could be hired from the existing eligible list approximately July 1, 1990.

Eligible lists also exist for the Sanitation Worker II and Typist Clerk I (relief) classifications. The first Sanitation Workers will be needed some nine months from program approval, as will the temporary Typist Clerks to respond to public inquiries. Appointments for these positions can be made from the existing lists.

Materials Recovery Facility (MRF):

MRF Supervisor (New Classification)
Equipment Operator I
Maintenance Worker
General Helper

Should the City decide to construct and operate a MRF, additional examination and classification work would be required. A new classification of MRF Supervisor (working title) would need to be developed, a salary established, and a recruitment conducted. This process would require approximately six months, depending upon Personnel Department workload. Recruitments and examinations would have to be conducted for the existing classifications of Equipment Operator I, Maintenance Worker, and General Helper. Depending upon the relative priority assigned to each of these examinations, eligible lists could be established between 12 and 18 months from program approval.

EQUIPMENT PROCUREMENT

Procurement of the equipment to support a curbside recycling program requires following a specific series of steps. These steps include: (1) the preparation of bid specifications; (2) the preparation and

solicitation of bids; (3) the evaluation of bids; (4) selection of a responsible bidder; (5) awarding of contracts; and, finally (6) accepting delivery of the items. These activities will require a minimum of nine and one-half months. Our experience with solid waste collection indicates that the delivery of "blue box" or 60 gallon containers would require an additional eight months.

The equipment needed to support household recycling consists of collection trucks and recycling containers.

Under one scenario, the City could also be required to purchase the equipment needed in a MRF. The processing alternative most desirable to the City is one in which household recyclables can be hauled directly from the routes to a nearby processing facility. The pursuit of private sector materials processing contractors, through response to our RFQ, provides an excellent potential for private sector construction and operation of such a facility. However, if, following review and evaluation of the bidders' proposals the City selects to build its own processing facility under this scenario, staff would need to procure equipment for materials recovery.

Staff would then have a need to purchase such items as balers, conveyor belts, storage bins, scales, etc. To obtain the necessary materials recovery equipment could require six months.

To summarize, if the project can be deemed a pilot program, lead time for recycling program implementation will be determined by the following:

1. Time required to hire and train new staff.

2. The length of time necessary for the City's bid process to select providers of collection vehicles and household recycling containers and to identify contractor(s) of materials processing and marketing services.

3. Time required for delivery of collection vehicles and household containers after vendors have been chosen.

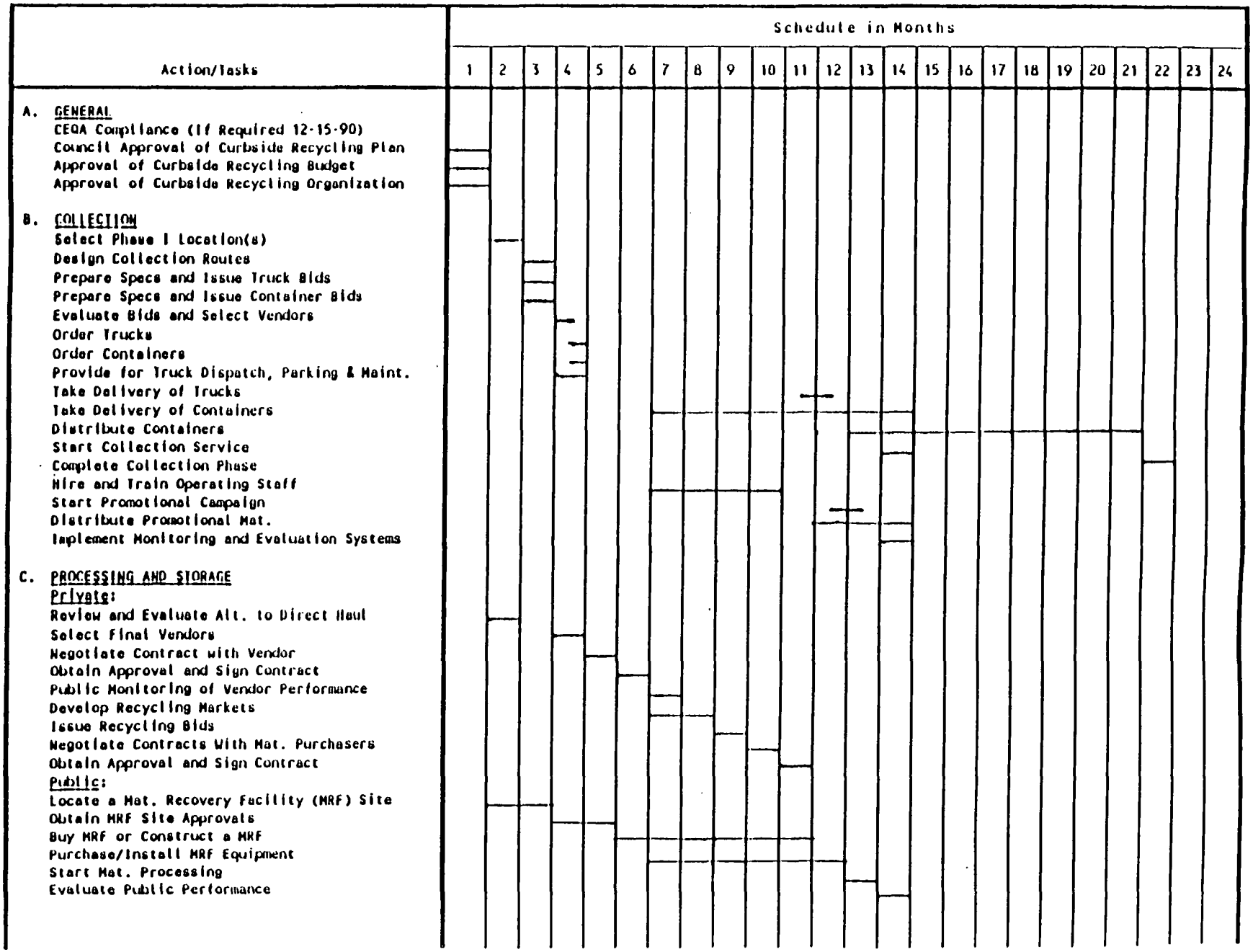
4. Time required for the City's newly hired staff to create and produce promotional materials.

5. Time required for private sector materials processors to obtain permits for site modifications, make improvements, and install additional processing equipment if needed.

The implementation schedule for household recycling (Table 7.1) summarizes the time-specific recycling subtasks.

TABLE 7.1

IMPLEMENTATION SCHEDULE FOR HOUSEHOLD CURBSIDE RECYCLING



VIII. CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

When first assigned the task of preparing a residential curbside recycling program, the Public Works Department staff expected to be working with a source separation program as described in Alternative A of this report. This is probably the most common of the early curbside programs. However, in researching this report, staff discovered that the feasible options for curbside programs are quite varied and competitive. The conclusions reached in this report are very different from initial expectations.

The information developed for this report was obtained using several different approaches. Department staff attended state-wide, national, and international conferences, equipment shows, symposia, etc. Many hours were spent researching journal and magazine articles and consultant reports about existing and planned recycling programs. Numerous telephone conversations were held with the operators of recycling programs all over the country. As a result, City staff is well educated in the state of the art of municipal recycling programs in this country.

Many reports and planning documents on curbside recycling address the reasons for curbside collection and how to increase participation. They do not, however, specifically compare the available methods of curbside collection and material processing. This report has analyzed six alternatives for a curbside program. Of particular interest are: (1) the effectiveness of diverting waste from disposal to recycling; (2) various operational issues; (3) program cost; (4) acceptance by residents; and (5) risk associated with initial investment of resources in a pilot program to serve 24,000 households.

A sensitivity analysis was performed on the revenue from materials collected for different market prices and recovery rates. It was concluded that the revenue from materials is insignificant compared to the cost of collection and processing. That is, no matter how optimistic we may be in projecting the revenue stream, it will not drive the economic evaluation of program alternatives.

Alternative A, the source separation method, is no longer regarded as the wave of the future by experienced program operators. On September 14, 1989, the State Department of Conservation and the Plastics Recycling Corporation of California sponsored a workshop on curbside recycling. At this workshop, City staff were surprised to hear representatives of the San Mateo curbside recycling program express a clear preference for the "blue box" method of collection (Alternative B in this report). Although San Mateo currently uses stackable containers in a source separation program, the "blue box" alternative is the one used in the curbside collection programs implemented by the same operator in communities

in the eastern part of the country. The reason provided for this preference is the lower cost of containers and decreased collection costs. A representative of the San Jose program (which currently is a source separation program like Alternative A), was also heard to say, at the workshop, that the "blue box" method would be used if they had the opportunity to redesign the program in San Jose. Alternative A is the least flexible in responding to changes and quantities of materials to be collected. Further, Alternative A involves the greatest degree of manual labor resulting in high risk to workers, high exposure to injury claims, and high labor costs. If Alternative A were implemented for the 24,000 home pilot program and later determined to be unsatisfactory, it might be difficult to recover any salvage value for the equipment since so many other programs are favoring the "blue box" method. Also, Alternative A is not compatible with collection of recyclables from apartment complexes and commercial establishments. For these reasons, Alternative A is not being recommended.

Alternative B, the "blue box" system, is now being recommended over source separation by many experienced operators as mentioned above. Our cost estimates show Alternative B to have the lowest cost per ton of materials collected for weekly service. The containers are less expensive than containers for Alternative A. Collection costs are less because of reduced labor and greater truck capacities, although substantial manual labor is still required. Convenience to residents is enhanced since less source separation is required. Processing costs are expected to be less than Alternatives C and D since newsprint is bundled and collected separately from other materials. For manual collection of recyclables, Alternative B is the preferred choice.

Alternative C involves semi-automated collection of totally commingled recyclables from 60 gallon or 90 gallon containers by a rear loader packer truck. Because Alternative C has all of the disadvantages of Alternative D, and not as many advantages, it is not competitive and will not be recommended.

Alternative D is the fully automated collection of totally commingled recyclables from 60 or 90 gallon containers by a side loading packer truck. Since Alternative D is fully automated, there is no manual labor involved. It is identical to the basic residential garbage service which has been very well received by residents. However, there are some drawbacks to this system. Considerable debate exists about the potential problem of glass breakage and glass contamination in the newsprint and cardboard. Such contamination may hurt the marketability of the materials and could increase the amount of rejected material. On the other hand, the presence of paper and cardboard actually cushion the glass and help prevent breakage during handling. Also, the pressure used in compaction could be reduced to minimize glass breakage and aid in material processing. A special advantage of automated collection in large containers is that cardboard can easily be added to the materials collected, thereby increasing the impact on the total waste stream. In addition, the large containers make less frequent collection possible. In a similar way, Alternative D allows for addition of other materials (e.g. HDPE) as local markets become

available. There is little experience nation-wide with using fully automated collection for recyclables, although it is well established for garbage collection. Alternative D is particularly attractive for a pilot program since it involves so little risk. In the worst case of abandoning this method for collecting recyclables were abandoned, all the containers, vehicles, and staff could be absorbed back into the existing garbage collection function of the City. The investment in a processing facility would still be worthwhile since the "blue box" system also requires materials processing.

The preferred way to implement Alternative D is to start with monthly collection on the same day as regular garbage collection (Alternative D-3) using the existing vehicle fleet and a modest staff increase. This method combines the advantages of greater waste diversion and a relatively low cost per ton. If the participation rates and community acceptance are not satisfactory, the program could be expanded to provide collection weekly on the same day as garbage pickup. If the program were still determined unsatisfactory, the equipment and staff could be absorbed back into the existing garbage collection system.

RECOMMENDATION

Either Alternative B ("blue box") or Alternative D (fully automated collection of commingled recyclables) is recommended as the best choice for a residential curbside recycling program in the City of Sacramento. It is recommended that Alternative D-3 be chosen for a 24,000 household pilot program, primarily due to the low risk of initial investment and the greatest potential impact on the waste stream. After experience is obtained with Alternative D, it is recommended that a comparison be made with Alternative B prior to any long-term commitment or expansion of the residential curbside collection of recyclables. Based on this study, it is anticipated that Alternative B may be best for a small program serving only 24,000 households, but Alternative D is best for a city-wide program.

APPENDIX A

APPENDIX A: City of Sacramento Resolutions

- 88-646
- 88-673
- 88-973
- 89-685

RESOLUTION NO. 88-648

ADOPTED BY THE SACRAMENTO CITY COUNCIL ON DATE OF

JUL 5 1988

A RESOLUTION APPROVING THE 1988 REVISION TO THE SACRAMENTO COUNTY SOLID WASTE MANAGEMENT PLAN

WHEREAS, the Nejedly-Z'berg-Dills Solid Waste Management and Resource Recovery Act of 1972 (hereafter referred as the Act) required each county, in cooperation with affected local jurisdictions, to prepare a comprehensive, coordinated solid waste management plan; and

WHEREAS, the County of Sacramento and the four cities therein did prepare and adopt a solid waste management plan in 1977; and

WHEREAS, the Act requires that the County Solid Waste Management Plan be reviewed periodically to determine if a revision to that plan is required; and

WHEREAS, the Act also requires that any revision to the County Solid Waste Management Plan shall be subject to the approval by a majority of the cities within the county which contain a majority of the population of the incorporated area of the county; and

WHEREAS, the County of Sacramento has prepared a Revision to the Solid Waste Management Plan in conformance with the Act and on April 22, 1988, submitted said revision to this council for approval;

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF SACRAMENTO:

That the City Council approves said Revision and concurs in the following: (a) the objectives set forth in the revision; (b) the method and organization for implementation of the programs contained in the revision, (c) the procedures for financing the recommended solid waste management programs, and (d) the role identified in the revision for the City in implementing this cooperative effort for management of solid waste in an economical and environmentally acceptable manner.

ANNE RUDIN
MAYOR

ATTEST:

LORRAINE MAGANA
CITY CLERK

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RESOLUTION No. 88-673

Adopted by The Sacramento City Council on date of

JUL 12 1988

A RESOLUTION ADOPTING A GOAL OF RECYCLING A MINIMUM OF 20% OF THE CITY'S WASTE STREAM

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF SACRAMENTO:

WHEREAS, Government Code Section 66780.5, subdivision (f), requires that the County of Sacramento's Solid Waste Management Plan, as revised during or after 1988, include both a goal of recycling 20% of the entire County's waste stream and specific actions the County will take to meet that goal; and

WHEREAS, the County of Sacramento has prepared and submitted to the City for approval a 1988 Revision to the Sacramento County Solid Waste Management Plan, which includes a countywide goal of 20% recycling and specific actions to meet that goal, and which further requires the cooperation of the four incorporated cities in developing an action plan to achieve that goal; and

WHEREAS, the City of Sacramento thus has an affirmative obligation to establish a goal of reducing its own waste stream by 20%, and eventually to specify actions to meet that goal;

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Sacramento: (1) that the City Council hereby adopts a goal of recycling at least 20% of the solid waste generated within the City of Sacramento; and (2) that, in order to be able eventually to specify actions needed to meet that goal, the City/County Solid Waste Advisory Committee is directed to cooperate with the City and County staff, the Resource Recovery Task Force, this City Council, and the Sacramento County Board of Supervisors, in the development of a proposed action plan for the City of Sacramento to meet the statutory 20% recycling goal, which proposed action plan will be as consistent as practicable with County Plans, and which will be described in a report to the City Council to be submitted no later than June 1, 1989.

ANNE RUDIN

MAYOR

ATTEST:

ANNE J. MASON

Assistant CITY CLERK

RESOLUTION NO. 88-973

ADOPTED BY THE SACRAMENTO CITY COUNCIL ON DATE OF

NOV 03 1988

A RESOLUTION APPROVING THE ESTABLISHMENT OF A CITY RECYCLING SUBCOMMITTEE

WHEREAS, the incorporation of practical recycling processes are essential to an integrated solid waste management system: and

WHEREAS, the City Council, by approving Resolution No. 88-646, adopted the 1988 revision of the Sacramento County Solid Waste Management Plan (CoSWMP) which establishes a goal of recycling 20 percent of the solid waste generated in the County, including its cities: and

WHEREAS, the City Council, by approving Resolution No. 88-673, adopted a City specific goal of recycling at least 20 percent of the solid waste generated within the City of Sacramento and directed the Solid Waste Advisory Committee (SWAC) to cooperate with various local agencies in the development of a proposed action plan to meet the 20 percent recycling goal; and

WHEREAS, the SWAC is to advise the County of Sacramento and the cities of Sacramento, Folsom, Isleton and Galt of the following subjects:

(a) On all matters relating to the County of Sacramento Solid Waste Management Plan.

(b) On all matters relating to solid waste transfer and disposal.

(c) On all matters relating to resource recovery and conservation of natural resources.

WHEREAS, the SWAC, at the request of the City Council, has evaluated methods of providing public input into the development of a City recycling program and recommended that the City Council establish a subcommittee of the SWAC to provide the necessary public input: and

WHEREAS, the City Council's joint Transportation and Community Development and Budget and Finance Committees approved the SWAC recommendation.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SACRAMENTO:

That the City Council authorizes the establishment of a Sacramento City Recycling Subcommittee to the existing Sacramento SWAC.

The responsibilities, structure and operation of the subcommittee shall be as delineated in attached Exhibit A.

MAYOR

ATTEST:

ACTING Assistant CITY CLERK

EXHIBIT A

SACRAMENTO CITY RECYCLING SUBCOMMITTEE

1. Established.

The Sacramento City Recycling Subcommittee to the City Solid Waste Advisory Committee (SWAC) is hereby established.

2. Definitions.

As used in this exhibit, the following definitions apply:

(a) Board. The Board of Supervisors of Sacramento County.

(b) City. The City of Sacramento.

(c) Council. The City Council of the City of Sacramento.

(d) County. The County of Sacramento.

(e) Mayor. The Mayor of the City of Sacramento.

(f) Member. A person appointed as a member of the recycling subcommittee.

(g) Subcommittee. The Sacramento City Recycling Subcommittee.

3. Responsibilities.

(a) The subcommittee shall analyze and evaluate materials reclamation processes and technologies to recommend methods and programs for enhancing the recovery, collection, reuse and sale of discarded substances/materials.

(b) The subcommittee shall work with the SWAC to develop a recycling program for the City of Sacramento that will lead to a 20 percent reduction in the City's waste stream.

(c) The subcommittee shall coordinate with the City/County SWAC, the City and County staff, the County Resource Recovery Task Force, the Council, and the Board of Supervisors, in the development of a proposed action plan for the City of Sacramento to meet the statutory 20 percent recycling goal, which proposed action plan will be as consistent as practicable with County Plans, and which will be described in a report to the City Council to be submitted no later than June 1, 1989.

RESOLUTION No. 88-973

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4. Appointment of members.

(a) The subcommittee shall consist of five (5) representatives of citizens residing within the City of Sacramento.

(b) The subcommittee members shall be appointed by the Mayor from persons recommended by the SWAC.

(c) Notwithstanding the provisions of this exhibit, any member appointed to the subcommittee shall serve at the pleasure of the appointing authority.

(d) Subcommittee members shall serve for a term of two (2) years.

5. Organization, meetings, officers.

(a) Members of the subcommittee shall serve without compensation.

(b) All City appointed members to the SWAC shall be ex-officio members of the subcommittee.

(c) The Chairperson of the SWAC shall organize the subcommittee and appoint its officers. The appointed subcommittee officers shall serve at the pleasure of the SWAC Chairperson.

(d) The subcommittee shall hold regular meetings at least once each month at a time and place selected by a majority vote of the entire subcommittee.

(e) A majority vote of the entire subcommittee is necessary in order for the subcommittee to take action on any matter.

6. Vacancies, absences from meetings.

(a) The Mayor shall fill any vacancy occurring among the members.

(b) The position of any subcommittee member who fails to attend three or more consecutive regular meetings without the approval of the majority of the members of the subcommittee shall automatically become vacant.

7. Staff support for the committee.

(a) The Public Works Department's Solid Waste Division will provide staff support for the subcommittee at reasonable levels consistent with the total workload of the division.

(b) Assigned staff will be expected to:

(1) Keep minutes of the meetings.
(2) Act as a resource person(s) to the subcommittee.
(3) Perform liaison functions between the subcommittee and City officials.

8. Termination.

The City Council may dissolve the subcommittee at such time as it sees fit.

RESOLUTION NO. 89-685

ADOPTED BY THE SACRAMENTO CITY COUNCIL

ON DATE OF AUG 2 9 1989

RESOLUTION ESTABLISHING RECYCLING AND WASTE REDUCTION GOALS AND DIRECTING STAFF TO DEVELOP RECOMMENDATIONS FOR IMPLEMENTATION OF A CURBSIDE RECYCLING PROGRAM

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SACRAMENTO THAT:

1. The following recycling and waste reduction goals be established:

   (a) by January 1, 1992, the City shall endeavor to recycle or reduce all solid waste disposed of in the City by 30%, by weight;

   (b) by January 1, 1995, the City shall endeavor to recycle or reduce all solid waste disposed of in the City by 40%, by weight;

   (c) by January 1, 1999, the City shall endeavor to recycle or reduce all solid waste disposed of in the City by 70%, by weight; and

   (d) the City shall compost or utilize alternative disposal to landfilling of the maximum amount of yard and garden waste that is feasible.

2. A pilot curbside recycling program, serving at least one-quarter of the households in the City, will be implemented subject to CEQA compliance by August 1, 1990. Staff is hereby directed to develop an implementation plan, including an analysis of costs associated with various curbside recycling options. The staff recommendations shall be returned to the Joint Transportation and Community Development/Budget and Finance Committees no later than November 14, 1989.

3. The recommendations contained in the Solid Waste Advisory Committee Recycling Action Plan, titled *"Subcommittee's Phase I Report"* be referred to the City Manager for staff review, analysis, and recommendation in the context of the entire Solid Waste Management Program. The staff recommendations shall be returned to the Joint Transportation and Community Development/Budget and Finance Committees no later than November 14, 1989.

4. The Recycling Subcommittee of the Solid Waste Advisory Committee is hereby authorized to return to the City Council by February 6, 1990, with further recommendations on its proposed Recycling Action Plan.

ANNE RUDIN
MAYOR

ATTEST:

VALERIE BURROWES
CITY CLERK

FOR CITY CLERK USE ONLY

RESOLUTION NO.: 89-685

DATE ADOPTED: AUG 2 9 1989

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APPENDIX B

APPENDIX B: Anti-scavenging Ordinances

- City of Sacramento
- State of California
- County of Sacramento
- City of San Bruno
- City of San Jose
- City of Albany

together with the charges for any other utility service rendered to the property by the City as one item. The fees shall be payable at the same time and place and in the same manner and shall be subject to the same penalty for delinquency as is presently in effect for city water and sewer services. When garbage service is stopped at the request of an occupant or owner upon the vacation of the premises, the closing bill rendered shall be due and payable by the occupant or owner when billed. If all or part of the bill is not paid, the utility services supervisor shall order the discontinuance of any and all utility services for which the bill is rendered, including but not limited to the water service. Before any service is discontinued, the utility services supervisor shall follow the procedures for notice and opportunity for hearing contained in Division 5 of Article I of Chapter 64 of the Sacramento City Code. (Ord. No. 3685, §1; Ord. No. 84-031, §12)

§ 19.112 Removal of Recyclables and Salvageable Materials placed for City-Sponsored Recycling Program Prohibited.

It shall be unlawful and an infraction for any persons, other than the City or the City's designee, to collect or remove recyclable or salvageable materials placed by any person in a bag or container labeled for use in connection with a recycling program sponsored by the City of Sacramento. (Ord. 88-032, §1)

§ 19.113 Unauthorized Collection and Hauling.

Except as otherwise provided in Article III of this Chapter it shall be unlawful for any person to collect garbage, rubbish or waste paper refuse within the city or transport the same through the streets, alleys and public ways in the city unless such person has been licensed to do so by contract or otherwise by the City Manager on the recommendation of the Superintendent of the Division of Waste Removal of the Engineering Department. Nothing herein shall be construed to prohibit any person from hauling garbage, rubbish or waste paper refuse which has been produced on the premises actually occupied by the persons in his own vehicle, by himself or an employee. Nothing herein shall be construed to prohibit any person from hauling or disposing of waste matter as defined in section 19.101. (Ord. No. 3354, §1)

§ 19.114 Delinquent Fees-Constitute Lien.

If the charges for garbage service remain unpaid for a period of 30 days following presentation, such charge shall become a lien and a tax on the real property to which the garbage service was

CHAPTER 1475

An act to add Sections 66710.5, 66713.5, and 66718.5 to, and to add Article 7 (commencing with Section 66761) to Chapter 1 of Title 7.3 of, the Government Code, relating to recyclable materials.

[Approved by Governor September 27, 1992. Filed with Secretary of State September 28, 1992.]

LEGISLATIVE COUNSEL'S DIGEST

AB 3717, Lehman. Recyclable materials: theft.

Existing law does not specifically prohibit the removal of recyclable materials from a designated collection location.

This bill would, except for an authorized recycling agent, as defined, prohibit a person from knowingly, as specified, removing recyclable material which has been segregated from other waste material, as defined, for the purposes of recycling and placed at the designated collection location, as defined in the bill.

The bill would authorize a court to award treble damages to an authorized recycling agent in specified civil actions.

The people of the State of California do enact as follows:

SECTION 1. Section 66710.5 is added to the Government Code, to read:

66710.5. "Authorized recycling agent" means a person that a local governing body or private commercial entity authorizes or contracts with to collect its recyclable waste material. An authorized recycling agency may be a municipal collection service, private refuse hauler, private recycling enterprise, or private nonprofit corporation or association.

SEC. 2. Section 66713.5 is added to the Government Code, to read:

66713.5. "Designated collection location" means the place where an authorized recycling agent has contracted with either the local governing body or a private entity to pick up segregated, recyclable material. This location will customarily be the curbside of a residential neighborhood or the service alley of a commercial enterprise.

SEC. 3. Section 66718.5 is added to the Government Code, to read:

66718.5. "Segregated from other waste material" means any of the following:

(a) The placement of recyclable materials in separate con' ··s.

(b) The binding of recyclable material separately from tl aste material.

(c) The physical separation of recyclable material from other waste material.

SEC. 4. Article 7 (commencing with Section 66761) is added to Chapter 1 of Title 7.3 of the Government Code, to read:

Article 7. Unauthorized Collection of Recyclable Materials

66761. No person, other than the authorized recycling agent, shall remove paper, glass, cardboard, plastic, used motor oil, ferrous metal, aluminum, or other recyclable materials which have been segregated from other waste materials and placed at a designated collection location for the purposes of collection and recycling. No person shall be subject to an action for a violation of this section unless the person knows, or reasonably should know, that the materials would otherwise be collected by the authorized recycling agent for the purpose of recycling the materials.

66762. Unless otherwise provided by contract, paper, glass, cardboard, plastics, used motor oil, ferrous metal, aluminum, and other waste materials, which are segregated for the purposes of recycling, and placed at the designated collection location, may not be removed by anyone other than the authorized collection agent of the local governing body or private commercial entity.

66763. Nothing in this article shall limit the right of the individual person to donate, sell, or otherwise dispose of his or her recyclable materials.

66764. In any civil action by an authorized recycling agent against a person alleged to have violated Section 66761, the court may allow treble damages against the unauthorized person removing the recyclable material as measured by the value of the material removed.

66765. Nothing in this article shall limit the authority of a local agency to enact or enforce regulations or ordinances on the same matters.

(a) Aspects of solid waste handling which are of local concern including, but not limited to, frequency of collection, means of collection and transportation, level of services, charges and fees, nature, location, and extent of providing solid waste handling services.

(b) Whether such services are to be provided by means of nonexclusive franchise, contract, license, permit, or otherwise, either with or without competitive bidding, or, if in the opinion of its governing body, the public health, safety and well-being so require, by partially exclusive or wholly exclusive franchise, contract, license, permit, or otherwise, either with or without competitive bidding. Such authority to provide solid waste handling services may be granted under such terms and conditions as are prescribed by the governing body of the local governmental agency by resolution or ordinance.

(c) Nothing is this chapter shall modify or abrogate in any manner any franchise heretofore granted or extended by any county or other local governmental agency.

The provisions of this article do not require any local agency to provide for services, or for any level of service, but, instead, specify the means by which services, if provided, may be performed. notwithstanding any other provisions of law to the contrary, no local agency shall in any way be liable for its failure to provide service or for any action or failure to act by a solid waste enterprise. Added Stats 1980 ch 504 Sec. 1.]

Chapter One

Article 7

Unauthorized Collection of Recyclable Material
[Added by Stats 1982 ch 1475 sec. 4.]

Sec. 66761. Prohibition against removal of materials except by authorized recycling agent.

. person, other than the authorized recycling agent, shall remove paper, glass, cardboard, plastic, used motor oil, ferrous metal, aluminum, or other recyclable materials which have been segregated

from other waste materials and placed at a designated collection location for the purposes of collection and recycling. No person shall be subject to an action for a violation of this section unless the person knows, or reasonably should know, that the materials would otherwise be collected by the authorized recycling agent for the purpose of recycling the materials.
[Added Stats 1982 ch 1475 Sec. 4.]

Sec. 66762. Prohibition against removal of materials except by authorized collection agent

Unless otherwise provided by contract, paper, glass, cardboard, plastics, used motor oil, ferrous metal, aluminum, and other waste materials, which are segregated for the purposes of recycling, and placed at the designated collection location, may not be removed by anyone other that the authorized collection agent of the local governing body or private commercial entity.
[Added Stats 1982 ch 1475 Sec. 4.]

Sec. 66763. Right of individual to dispose of recyclable materials unaffected

Nothing in this article shall limit the right of the individual person to donate, sell, or otherwise dispose of his or her recyclable materials.
[Added Stats 1982 ch 1475 Sec. 4.]

Sec. 66764. Treble damages

In any civil action by an authorized recycling agent against a person alleged to have violated Section 66761, the court may allow treble damages against the unauthorized person removing the recyclable material as measured by the value of the material removed.
[Added Stats 1982 ch 1475 Sec. 4.]

Sec. 66765. Local agency's authority to enact or enforce ordinances unaffected

Nothing in this article shall limit the authority of a local agency to enact or enforce regulations or ordinances on the same matters.
[Added Stats 1982 ch 1475 Sec. 4.]

On a motion by Supervisor SHEEDY, seconded by Supervisor COLLIN, the foregoing ordinance was passed and adopted by the Board of Supervisors of the County of Sacramento, State of California, at a regular meeting thereof, this 21st day of January, 1986, by the following vote, to wit:

AYES: Supervisors, JOHNSON, SHEEDY, SMOLEY, COLLIN

NOES: Supervisors, NONE

ABSENT: Supervisors, BRYAN

In accordance with Section 25103 of the Government Code of the State of California, a copy of this document has been delivered to the Chairman of the Board of Supervisors, County of Sacramento, on

JAN 21 1986

By Sylvia Flores
County Clerk, Board of Supervisors

Chairperson of the Board of Supervisors
of Sacramento County, California

(SEAL)

ATTEST: Clerk of the
Board of Supervisors

FILED

JAN 21 1986

BOARD OF SUPERVISORS
BY
CLERK OF THE BOARD

... ..., do obtain as follows:

SECTION 1. Section 6.20.160 of the Sacramento County Code is amended to read:

6.20.160 OWNERSHIP OF REFUSE AND SALVAGEABLE MATERIALS. It shall be unlawful for any person within the unincorporated area, other than the County or the authorized permittee under this Chapter, to collect or remove refuse or salvageable material placed by any person at a curb or in a container for collection by the ~~County~~ or the ~~permittee~~.

SECTION 2. This ordinance was introduced and the title thereof read at the regular meeting of the Board of Supervisors on January 14, 1986, and on January 14, 1986, further reading was waived by unanimous vote of the Supervisors present.

This ordinance shall take effect and be in full force on and after thirty (30) days from the date of its passage hereof, and before the expiration of fifteen (15) days from the date of its passage it shall be published once with the names of the members of the Board of Supervisors voting for and against the same, said publication to be made in a newspaper of general circulation published in the County of Sacramento.

ORDINANCE NO. 1987-____

AN ORDINANCE OF THE CITY OF SAN BRUNO ADDING CHAPTER 10.14 TO TITLE 10 OF THE SAN BRUNO MUNICIPAL CODE, ESTABLISHING A PROGRAM FOR THE SEPARATE COLLECTION OF RECYCLABLES FROM THE RESIDENCES, BUSINESSES AND INSTITUTIONS OF THE CITY OF SAN BRUNO

WHEREAS, reduction of the amount of solid waste and the conservation of recyclable materials is an important public concern by reason of the growing problem of solid waste disposal and its impact upon the environment; and

WHEREAS, recycling conserves valuable material resources and energy, promotes greater efficiency in the local economy, and provides employment; and

WHEREAS, recycling will reduce the overall amount of solid waste presently requiring disposal, and thus reduce storage, collection, transportation, and disposal costs; and

WHEREAS, the current Solid Waste Management Plan for the County of San Mateo, Chapter X-(B) designates the local public entities as responsible for implementing programs for initiating and regulating curbside recycling programs; and

WHEREAS, the Solid Waste Management Policy for the State of California of 1979 provides as an objective the creation of local recycling programs throughout the State; and

WHEREAS, Title 7.3 of the California Government Code, "The Solid Waste Management and Resource Recovery Act of 1972" authorizes the establishment of local programs for recovery of recyclable materials; and

WHEREAS, California Assembly Bill 2020, known as the "California Beverage Container Recycling and Litter Reduction Act" encourages the local creation of curbside recycling programs;

The City Council of the City of San Bruno does ordain as follows:

SECTION 1: That Title 10, Chapter 10.14, including Sections 10.14.010 through 10.14.140, is added to the San Bruno Municipal Code to read as follows:

CHAPTER 10.14

RECYCLABLE MATERIALS

Sections:

10.14.010 Purpose

The City Council finds and determines that a municipal program for the collection and recycling of newspapers, metal food and beverage containers, glass, old corrugated cartons, graded or sorted waste paper, waste motor oil (residential), and PET plastic beverage containers, within the City of San Bruno, and the licensing of persons engaged herein, is in the public interest and serves to promote the general welfare of the City of San Bruno.

This ordinance is hereby enacted to increase participation rates, improve recyclable material recovery rates, reduce landfill dependency, and ultimately maintain a cost effective overall garbage, rubbish, refuse or recyclable program for the citizens, businesses and institutions of the City of San Bruno.

It is also recognized that the recycling program hereby established may be victimized by unauthorized scavengers; and that the theft of recyclable materials before they can be picked up by the authorized collector would be destructive to the economic viability of the program, as well as detrimental to the economic interests of the City of San Bruno at large, and the citizens, businesses and institutions in particular. It is the

additional purpose of this ordinance to define clear ownership of recyclable materials and to provide for the protection of those ownership rights.

10.14.020 Definitions.

For the purposes of this chapter the following words and phrases shall have the meanings as set forth hereinafter unless the context appears otherwise:

(a) "Authorized recycling agent" means that person, partnership, joint venture or corporation authorized by contract with the City of San Bruno to collect recyclable materials pursuant to this chapter.

(b) "Charitable entity" means any organization or other entity maintained for community service, education or the public good, including service clubs, scouting organizations, religious and educational organizations and recognized charities.

(c) "Collect" means to take physical possession of materials at any commercial location, institutional location, multi-residential complex or residential unit of another.

(d) "Commercial entity" means any business, retail, office, professional or industrial premises or site including but not limited to motels, hotels and automobile courts. Such definition includes non-profit activities such as churches, synagogues, charitable organizations, fraternal, service and social clubs.

(e) "Commercial location" means the premises or site of a commercial entity.

(f) "Designated collection location" means the place where an authorized recycling agent is to pick up segregated, recyclable materials. The location is identified by contract between the authorized recycling agent and the City of San Bruno and will customarily be the curbside of a residential neighborhood or the service alley of a commercial or institutional entity.

(g) "Institutional entity" means any location operated by a governmental entity, including city, county, state and/or federal buildings, public schools, colleges, and public recreational sites.

(h) "Institutional location" means the premises or site of an institutional entity.

(i) "Multi-residential complex" means any residential building, boardinghouse, apartment building, condominium complex, stock cooperative complex, or flats consisting of more than three (3) independent dwelling units. "Multi-residential complex" does not include motel, hotel or automobile court.

(j) "Person" means any tenant, lessee, business, occupant or owner of real property within the City of San Bruno.

(k) "Recyclable materials" means any one or more of the following categories of materials collected and recycled or salvaged from within the City of San Bruno:

(1) newspapers

(2) metal food and beverage containers

(3) glass
(4) old corrugated cartons
(5) graded or sorted waste paper
(6) waste motor oil (residential)
(7) PET plastic beverage containers

(l) "Recycling" means the process of sorting, cleansing, treating, and reconstituting waste or other discarded materials for the purpose of using the altered form. "Recycling" does not include merely sorting, shredding, stripping, compressing, storing, land filling with, or otherwise disposing of waste or other discarded materials.

(m) "Residential unit" means any single-family dwelling, duplex, triplex, apartment house of 3-dwelling units or less, or condominium complex of 3-dwelling units or less. For the purposes of this chapter, each apartment, flat, or dwelling unit of a duplex, triplex, 3-unit or less apartment house, or 3-unit or less condominium complex shall be considered as a separate dwelling.

(n) "Segregated recyclable materials" means those recyclable materials which have been separated:

(1) by the person from whom they are being collected;
(2) from refuse; and
(3) from all other recyclable materials to form one readily identifiable category or materials as set forth in Section 10.14.020(j) that is saleable without further sorting.

10.14.030 Recyclable Material Disposal -- General Requirements

It is unlawful for any person to keep, deposit, bury or dispose of any recyclable materials, except as in this chapter provided, in or upon any private or public property, street, alley, sidewalk, gutter, park or upon the banks of any stream or creek in the City of San Bruno, or in or upon any of the waters thereof; and every person in the City of San Bruno who disposes of recyclable materials shall dispose of same only in the manner provided in this chapter.

10.14.040 Collection Service -- Establishment

A. A recyclable materials collection service program is established and shall be available to all persons, residences, businesses and institutions in the City of San Bruno for the purpose of providing for the orderly and regular collection of recyclable materials within the City of San Bruno under this program. Creation and operation of a collection program does not preclude the operation of certified recycling centers created pursuant to Division 12.1 of the California Public Resources Code and/or charitable entity recycling programs.

B. Recyclable materials for donation, sale, or collection by or to any person or entity other than the authorized recycling

agent, may not be stored or transferred by use of the recycling receptacles described in this chapter, or any other containers used for recycling provided by the authorized recycling agent. Storage of recyclable materials at the designated collection location other than for pickup by the authorized recycling agent as defined herein, is prohibited.

10.14.050 Collection Contract

A. The City Council may, with or without having invited bids therefor, enter into an exclusive contract with any responsible individual, association, firm, organization or other business entity, whether or not said entity is operated for profit, for the collection of any or all recyclable materials within the City of San Bruno. Where such a contract provided for has heretofore or hereafter been entered into between the City of San Bruno and a contractor for the collection of any or all recyclable materials as herein provided, said contractor shall be the authorized recycling agent for the City of San Bruno.

B. If in the determination of the City Council said contractor shall have satisfactorily performed such contract, the City Council, without inviting bids or proposals therefor and without giving notice of its intention to do so, may, either prior to or after the expiration of such contract, extend or renew the same for such a period and on such terms and conditions as the City Council shall deem necessary and appropriate.

10.14.060 Authorized Recycling Agent -- Duties

The City of San Bruno's official authorized recycling agent must offer recyclable materials collection service to all persons, residences, businesses and institutions within the City limits pursuant to the terms and conditions of any exclusive contract for such service. The City Council may establish standard regulations for the methods of collection of recyclable materials, collection service charges, frequency of pickup, and the civil and/or criminal remedies available for enforcing this chapter.

10.14.070 Provisions Declared Minimum Standards

The provisions of this chapter shall be the minimum requirements for the protection of the public health, safety, convenience and general welfare.

10.14.080 Separation of Recyclables and Placement for Removal

A. Persons desiring to participate in the San Bruno Recycling Program shall prepare and separate those recyclable materials that the City has contracted for pickup by the

authorized recycling agent from other garbage and refuse as required by the collection contract, and thereafter have the segregated recyclable materials placed within receptacles as required by this chapter, or within the designated collection location, which shall be collected by the authorized recycling agent.

B. Receptacles containing recyclable materials for residential units shall be placed at curbside for collection by the authorized recycling agent; but shall not be placed at curbside earlier than 12 hours prior to the date and time for scheduled collection, nor left remaining at curbside longer than 12 hours following the date and time for scheduled collection.

C. Receptacles containing recyclable materials for multi-residential complex, commercial and/or institutional locations shall be of a size and serviceability agreed to by the authorized recycling agent and thereafter placed at the designated collection location.

10.14.090 Receptacle -- Specifications

A. Pursuant to the terms and conditions of any exclusive contract between the City of San Bruno and the authorized recycling agent, each residential unit shall be provided with suitable and sufficient receptacles to store segregated recyclable materials to be made available for curbside pick-up. The color, style and markings of such receptacles shall be mutually agreed upon between the City of San Bruno and the authorized recycling agent.

B. Initial provision of residential receptacles shall be made at no charge to persons participating in the San Bruno Recycling Program. All such residential receptacles shall be and remain the property of the authorized recycling agent, and shall not be used for any purpose other than the segregation and curbside placement of recyclable materials. Participating persons relocating out of the City of San Bruno shall leave all residential receptacles at the premises.

C. It is the duty of every person participating in the San Bruno Recycling Program to maintain receptacles in a reasonably safe and secure manner; and all such receptacles shall be so placed and kept at the designated collection location so as to be readily accessible for removal and collection therefrom and placed such that they will not be a public nuisance or in any degree offensive.

10.14.100 Authorized Recycling Agent -- Insurance Required

The City of San Bruno's official authorized recycling agent contracted with, in accordance with this chapter, shall be

considered as and shall be an independent contractor and shall act under its own directions as to the manner of performing its work; and it shall keep itself and all of its employees insured against all liability under California Workers' and Employees insurance, compensation and safety laws and against public liability and property damage, including all such liability for use or operation of motor vehicles used in the performance of work hereunder. Such public liability insurance shall be to the extent of one million dollars for each incident of death or injury to persons and/or property. Evidence of such insurance shall be filed with the City of San Bruno upon request.

10.14.110 Authorized Recycling Agent -- Rights Under Contract

An award of such contract shall confer upon the entity to whom the contract is awarded the exclusive right as the City of San Bruno's official authorized recycling agent hereunder, during the term of the contract, to collect, transport, sell and dispose of all recyclable materials collected within the City of San Bruno as provided herein, and all provisions of this chapter applicable to the authorized recycling agent shall constitute and be part of any contract awarded hereunder.

10.14.120 Authorized Recycling Agent -- Receipt of Charges.

A charge shall be collected by the City of San Bruno's official authorized recycling agent from the tenant, lessee, owner or occupant of each residential unit, as well as for each multi-residential, commercial and/or institutional entity situated within the City limits, at rates to be established by contract between the City of San Bruno and the official authorized recycling agent, said rates to be subject to change upon approval of an agreement between the City of San Bruno and said official collector.

10.14.130 Private Disposal of Recyclable Materials

A. Nothing contained in this chapter shall preclude any person, business or other entity from disposing of segregated recyclable materials without utilizing the City of San Bruno's official authorized recycling agent, provided that the recyclable materials are disposed of by such persons individually or by his or her employee or employees to an authorized recyclable materials collection site or station that has been duly approved and authorized as such by an appropriate governmental authority or other appropriate authority.

B. Nothing herein contained shall prevent any person, business or other entity from allowing recyclable materials to be picked up, dropped off, or otherwise donated to any charitable entity.

C. The use of receptacles or other containers provided by the authorized recycling agent or the pick-up of such recyclable materials from any designated collection location is prohibited by anyone other than the authorized recycling agent.

D. Nothing herein contained shall inhibit, regulate or restrict any recycling center, nonprofit dropoff program or recycling processor as permitted by "The Solid Waste Management Resource and Recovery Act of 1972" or the "California Beverage Container Recycling and Litter Reduction Act" of 1986.

10.14.140 Collection by Unauthorized Persons Prohibited -- Penalty

A. It is unlawful for any person, business or other entity, not otherwise excepted by the provisions of this chapter, or by state or federal law, to collect recyclable materials in the City of San Bruno; provided however, the collection of segregated recyclable materials with the intent to recycle all such materials collected by one who has an arrangement to and does recycle all such materials collected shall not be prohibited. The receipt of money or other consideration by the collector in addition to the materials collected creates the presumption that the collection of such materials is not for the purpose of recycling.

B. From the time of placement of recyclable materials at curbside, or other appropriate designated collection locations or in any container used for recycling provided by the authorized recycling agent, said recyclable materials shall be and become the property of the authorized recycling agent.

C. Any person engaged in the unauthorized collection of recyclable materials is guilty of an infraction. Any such unauthorized collections from one or more locations within the City of San Bruno shall constitute a separate and distinct offense.

D. As an alternative to criminal enforcement, both the City of San Bruno and the authorized recycling agent have the independent authority to civilly enforce any provisions of this chapter, to and including the authority to seek treble damages pursuant to California Government Code Section 66764. The San Bruno City Manager may invoke these remedies, or any of them, whenever he or she deems it appropriate.

SECTION 2: Exclusive Franchise, Contract, License or Permit.

A. The "Solid Waste Management and Resource Recovery Act of

1972" provides in general, and Government Code Section 66757(b) provides in particular that local governments have the discretion to enter into non-exclusive or exclusive franchises, contracts, licenses or permits for solid waste handling, including the handling of recyclable materials, according to the needs of the local entity.

B. It is the intent and purpose of the City of San Bruno to enter into an exclusive franchise, contract, license or permit for the collection and hauling of recyclable materials from all participating residences, multi-residences, businesses and institutions in the City of San Bruno pursuant to this Ordinance.

C. It is recognized that implementation of a city-wide exclusive franchise, contract, license or permit for the recovery of recyclables may involve gradual phasing in order to be implemented, particularly in an economically feasible manner consistent with the City's economic objectives in establishing this Program for City-wide Collection of Recyclables.

D. Consequently, the individual, partnership, corporation or other entity securing the exclusive franchise, contract, license or permit is permitted one-year from the date of granting the franchise, license or permit, or one-year from entering into a contract with the City of San Bruno, whichever is later, in order to accomplish city-wide recyclable collection from all residences, businesses and institutions in the City of San Bruno.

SECTION 3: If any section, subsection, sentence, clause, phrase, or portion of this ordinance is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this ordinance. The City Council of the City of San Bruno hereby declares that it would have adopted this ordinance and each section, subsection, sentence, clause, phrase or portion thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, phrases or portions be declared invalid or unconstitutional.

SECTION 4: The City Council finds, pursuant to Title 14 of the California Administrative Code, Section 15378, that this ordinance is exempt from the requirements of the California Environmental Quality Act (CEQA) in that:

A. It is not a Project as provided by the Act, in that it does not have a potential for resulting in a detrimental physical change in the environment, directly or ultimately as provided in Title 14, Section 15378(a);

B. In that it is further exempt under the definition of

Project in Section 15378(b)(3) in that it concerns general policy and procedure making;

C. In that is can be seen with certainty that there is no possibility that the activity may have a significant effect upon the environment pursuant to Title 14, Section 15061(b)(3); and

D. In that the action taken is an action by a regulatory agency that will both enhance and protect the environment and thereafter categorically exempt pursuant to Title 14, Section 15308.

SECTION 5: The City Clerk shall publish this Ordinance according to law.

_____
Mayor

ATTEST:

_____
City Clerk

APPROVED AS TO FORM:

_____
City Attorney

RJL:SD:ldw
8/5/85
D-3

ORDINANCE NO. 22054

AN ORDINANCE OF THE COUNCIL OF THE CITY OF SAN JOSE AMENDING CHAPTER 9.08 OF TITLE 9 OF THE SAN JOSE MUNICIPAL CODE BY ADDING NEW SECTIONS 9.08.015, 9.08.065, 9.08.185, AND A NEW PART 10 INCLUDING SECTIONS 9.08.1700, 9.08.1710, 9.08.1720, 9.08.1730 AND 9.08.1740 TO PROHIBIT UNAUTHORIZED COLLECTION OF RECYCLABLE WASTE MATERIALS FROM DESIGNATED LOCATIONS.

WHEREAS, the Council of the City of San Jose has determined it is in the best interests of the City to promote recycling of discarded waste materials; and

WHEREAS, the City has entered into that certain Agreement Between the City of San Jose and Empire Waste Management for Curbside Recycling Pilot Project; and

WHEREAS, the success of said Pilot Project and of future recycling programs is in part dependent upon the ability of the contractor to collect recyclable materials without intereference; and

WHEREAS, it has been determined that recyclable materials set out by the citizens of San Jose for collection by the contractor are being collected by unauthorized persons and such unauthorized collection may have serious adverse effects on the success of recycling programs;

NOW, THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE CITY OF SAN JOSE:

SECTION 1. There is hereby added to Chapter 9.08 of Title 9 of the San Jose Municipal Code a new Section 9.08.015 to be entitled and to read as follows:

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OCT 10 1985
CITY CLERK

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3086a

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9.08.015. Authorized recycling contractor

"Authorized recycling contractor", as used in this chapter, means a person, firm, partnership, corporation or other entity authorized under and by virtue of a contract with the city to collect recyclable waste material in the City.

SECTION 2. There is hereby added to Chapter 9.08 of Title 9 of the San Jose Municipal Code a new section 9.08.065 to be entitled and to read as follows:

9.08.065. Designated recycling collection location

"Designated recycling collection location", as used in this chapter, means the place designated in the contract between the city and an authorized recycling contractor from which the authorized recycling contractor has contracted to collect recyclable waste material.

SECTION 3. There is hereby added to Chapter 9.08 of Title 9 of the San Jose Municipal Code a new Section 9.08.185 to be entitled and to read as follows:

9.08.185. Recyclable waste material; Recycling

A. "Recyclable waste material", as used in this chapter, means discarded materials such as, but not limited to, newspapers, glass and metal cans, which are separated from other garbage or refuse for the purpose of recycling.

B. "Recycling", as used in this chapter, means the process of collecting and turning used products into new products by reprocessing or remanufacturing them.

SECTION 4. There is hereby added to Chapter 9.08 of Title 9 of the San Jose Municipal Code a new Part 10 to be numbered and entitled and to read as follows:

Part 10

COLLECTION OF RECYCLABLE MATERIALS

9.08.1700. Ownership of recyclable waste material

Upon the placement of recyclable waste material at a designated recycling collection location for collection by an authorized recycling contractor, the recyclable waste material shall become the property of the authorized recycling contractor.

9.08.1710. Unauthorized collection prohibited

During the twenty-four hour period commencing at 6:00 p.m. on any day preceeding a day designated for collection of recyclable waste material, no person, other than an authorized recycling contractor, shall remove recyclable waste material which has been placed at a designated recycling collection location. Any and each such collection in violation hereof from one or more designated recycling collection locations during said twenty-four hour period shall constitute a separate and distinct offense punishable as provided in this code.

9.08.1720. Right of individual to dispose of recyclable waste material

Nothing in this part shall limit the right of an individual person, organization or other entity to donate, sell or otherwise dispose of recyclable waste material, provided that any such disposal is in accordance with the provisions of this chapter.

RJL:SD:ldw
8/5/85
D-3

Ord 22054

9.08.1730. Enforcement - Authority

The director of the Department of Neighborhood Preservation shall have the authority to enforce the provisions of this part. This authority shall be in addition to the authority granted to police officers pursuant to this code.

9.08.1740. Civil action by authorized recycling contractor

Nothing in this part shall be deemed to limit the right of an authorized recycling contractor to bring a civil action against any person who violates section 9.08.1710 of this chapter, nor shall a conviction for such violation exempt any person from a civil action brought by an authorized recycling contractor.

PASSED FOR PUBLICATION OF TITLE this 6th day of August, 1985, by the following vote:

AYES: ALVARADO, BEALL, HAMMER, IANNI, LEWIS, PUTNAM, SAUSEDO, STABILE, WILLIAMS AND McENERY

NOES: RYDEN

ABSENT: NONE

THOMAS McENERY Mayor

ATTEST: Andrea M. Pavone

Andrea M. Pavone
Acting City Clerk

7576a
3086a

ORDINANCE NO. 89-08

AN ORDINANCE OF THE ALBANY CITY COUNCIL ESTABLISHING ANTI-SCAVENGER PROVISIONS RELATING TO OWNERSHIP OF RECYCLABLE MATERIAL, UNAUTHORIZED COLLECTION OF RECYCLABLE MATERIAL, OWNERSHIP AND UNAUTHORIZED REMOVAL OF APPROVED RECYCLING CONTAINERS, THE RIGHT OF INDIVIDUALS TO DISPOSE OF RECYCLABLE MATERIAL, THE RIGHT OF AUTHORIZED CONTRACTOR TO BRING FORTH CIVIL ACTION, AND PROVIDING FOR VIOLATIONS AND PENALTIES.

WHEREAS, the City of Albany (the "City") wishes to discourage the stealing ("scavengering") of recycling buckets and recyclable materials; and

WHEREAS, the Oakland Scavenger Company has recommended that an anti-scavenger ordinance be enacted to assist in the pursuit and prosecution of those caught stealing recycling buckets and recyclable materials; and

WHEREAS, the City Council has reviewed this matter on March 12, 1989;

THE COUNCIL OF THE CITY OF ALBANY DOES ORDAIN AS FOLLOWS:

Section 1. That Albany City Code Chapter 15-3 be entitled to read Anti-Scavenger Ordinance.

Section 2. That Sections 15-3.1 through 15-3.8 be added to read:

15-3.1 Definitions. As used in this section:

Approved Recycling Container-- shall mean the bucket, bag, box or other container supplied by and/or identified by the City or the Authorized Recycling Contractor or the donor of such recyclable materials as the container into which recyclable materials shall be placed and which shall be located at the curbside.

Authorized Recycling Contractor-- shall mean a person, firm, partnership, corporation or other entity authorized under and by virtue of a contract with the City to collect recyclable materials within the City limits.

Recyclable Material-- shall mean material such as, but not limited to, newspapers, glass, metal and aluminum cans, plastic bottles, corrugated cardboard and used motor oil which are separated from other garbage or refuse for the purpose of recycling.

Recycling-- shall mean the process of collecting and turning used products into new products by reprocessing or remanufacturing them.

15-3.2 Ownership of Recyclable Material. Recyclable material placed at the curbside for collection by an authorized recycling contractor becomes the property of the authorized recycling contractor.

15-3.3 Unauthorized Collection Prohibited. No person other than an authorized recycling contractor shall

remove recyclable material which has been placed at the curbside. Any and each violation hereof from one or more recycling collection locations shall constitute a separate and distinct offense punishable as provided in this Ordinance.

15-3.4 Destroying, Scattering or Collecting Recyclable Material Without the Consent of the Resident of the Premises or the Authorized Recycling Contractor is Prohibited. It shall be unlawful for any person to burn, break, destroy, scatter, scavenge, collect or take any recyclable materials without the consent of the resident of the premises or the authorized recycling contractor.

15-3.5 Approved Recycling Containers- Ownership and Unauthorized Removal. It shall be unlawful for a person other than the (1) the resident of the premises or his/her designee; or (2) the City, or (3) an authorized agent of the City, or (4) the authorized recycling contractor, to remove any approved recycling container from the curbside.

15-3.6 Right of Individual to Dispose of Recyclable Material. Nothing in this Ordinance shall limit the right of an individual person, organization, or other entity to donate, sell or otherwise dispose of recyclable material, provided that any such disposal is in accordance with the provisions of this chapter.

15-3.7 **Civil Action by Authorized Recycling Contractor.** Nothing in this part shall be deemed to limit the right of the authorized recycling contractor to bring a civil action against any person who violates the above described sections of this chapter, nor shall a conviction for such violation exempt any person from a civil action brought by an authorized recycling contractor.

15-3.8 **Violations and Penalties.** Violation of any part of this section shall be an infraction or misdemeaner pursuant to Section 1-9 of the Albany City Code.

Section 3. Severability Clause. If any section, subsection, paragraph, sentence, clause or phrase of this Ordinance for any reason shall be held to be invalid or unconstitutional, the decision shall not affect the remaining portions of this Ordinance. The Council of the City of Albany hereby declares that it would have passed this Ordinance and each article, section, subsection, paragraph, sentence, clause or phrase which is a part thereof, irrespective of the fact that any one or more articles, sections, subsections, paragraphs, sentences, clauses or phrases are declared to be invalid or unconstitutional.

Section 4. Publication. This Ordinance shall be published in a newspaper of general circulation within the

City of Albany, which said newspaper is designated for that purpose, or shall be posted in three public places and shall become effective on or after its final passage, adoption and publication.

Edward J. McManus, Mayor

City of Albany

1000 SAN PABLO AVE. • ALBANY, CALIF. 94706 • TELEPHONE ~~XXXXXX~~ 528-5720

JACQUELINE L. BUCHOLZ
CITY CLERK

STATE OF CALIFORNIA)
COUNTY OF ALAMEDA) SS
CITY OF ALBANY)

I, JACQUELINE BUCHOLZ, City Clerk of the City of Albany, California, do hereby certify that the whole number of members of the City Council of the said City of Albany is five; that the foregoing Ordinance, being Ordinance No. 89-08, was passed and adopted by the said City Council, approved and signed by the Mayor of said City, and attested by the City Clerk of said City, all at a regular meeting of the said Council on the 20th day of March, 1989 A.D., and that the same was so passed and adopted by the following votes:

AYES: Council Members Kruse, Lewis, Nichols, Rubin & Mayor McManus

NOES: None

ABSENT: None

In witness whereof, I have hereunto set my hand and affixed the official seal of the City of Albany, this 21st day of March, 19 89.

JACQUELINE BUCHOLZ
City Clerk

OAKLAND SCAVENGER COMPANY
ALBANY RECYCLING OPERATION
STATEMENT OF OPERATIONS
YEAR TO DATE 1989

	FIRST QUARTER	SECOND QUARTER	YEAR TO DATE
REVENUE:			
NEWSPAPER	2,559	2,212	4,771
GLASS	3,703	4,578	8,281
ALUMINUM	3,946	4,000	7,946
TOTAL REVENUE	10,208	10,790	20,998
EXPENSES:			
WAGES & SALARIES	6,155	7,919	14,074
OTHER PAYROLL COST	1,053	1,335	2,388
TRUCK EXPENSES	1,762	1,120	2,882
OFFICE EXPENSES	282	0	282
OTHER OPERATING EXPENSE	4,297	(2,654)	1,643
ADVERTISING	0	640	640
GENERAL & ADMINISTRATIVE	200	2,800	3,000
TOTAL EXPENSES	13,749	11,160	24,909
PROFIT/(LOSS) BEFORE RECYCLING SUBSIDIES	(3,541)	(370)	(3,911)
RECYCLING SUBSIDIES:			
ESTIMATED RATE INCREASE	5,293	5,427	10,720
FRANCHISE FEES	(397)	(476)	(873)
ESTIMATED PROCEEDS FROM RATE INCREASE	4,896	4,951	9,847
AVOIDED COST	4,070	4,581	8,651
TOTAL RECYCLING SUBSIDIES	8,966	9,532	18,498
ESTIMATED PROFIT/(LOSS)	5,425	9,162	14,587

APPENDIX C

APPENDIX C: Waste Composition Data

- City Conducted Waste Characterization Studies
- R. W. Beck Waste Composition Study

SACRAMENTO CITY WASTE COMPOSITION DATA

Waste Composition

X - (by weight)

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
COMBUSTIBLES										
Paper										
Miscellaneous	26.4	26.6	26.7	26.9	26.6	26.9	26.3	26.7	26.5	28.8
New	9.1	9.3	10.1	10.0	7.9	7.0	7.1	6.8	6.2	0.0
Corrugated	2.8	2.3	0.9	0.5	0.1	0.2	0.2	0.1	0.0	0.0
Plastics	1.3	1.0	0.5	0.7	0.9	0.8	1.1	1.2	3.7	3.7
Rubber & Leather	0.9	0.7	0.7	0.3	0.2	0.4	0.7	0.7	0.3	0.3
Textiles	1.1	1.0	0.8	0.3	0.3	0.4	0.4	0.0	0.1	0.0
Wood	0.8	0.5	0.4	0.4	0.3	0.3	0.4	0.2	0.2	0.4
Food	13.4	14.2	15.1	14.9	14.6	14.9	14.7	15.0	15.2	18.4
Yard Waste	26.5	29.7	27.0	31.8	34.6	33.8	35.7	36.1	35.9	30.6
NON-COMBUSTIBLES										
Glass	9.8	6.9	7.6	7.2	7.5	6.8	6.5	7.1	7.3	12.7
Metal (Ferrous)	6.4	6.5	7.4	7.2	6.7	6.5	6.3	5.98	5.9	3.8
Aluminum	0.9	0.8	0.4	0.3	0.2	0.3	0.0	0.4	0.3	0.5
Other Metals	0.4	0.4	1.6	1.8	1.1	1.3	1.1	1.1	0.9	0.0

Hazardous Wastes
* Used oil, furn. polish, batteries, raid cans, partially full house paint cans

NOTE: Garden refuse was included in the yard waste percentaged on this page.

Note: This page was revised to include garden refuse 12/5/88

SACRAMENTO CITY WASTE COMPOSITION DATA

Waste Composition

X - (by weight)

	1984	1985	1986	1987	1988
COMBUSTIBLES					
Paper					
Miscellaneous	No Data	18.6	No Data	16.6	15.3
Newspaper		10.8		9.5	7.8
Corrugated		1.0		2.2	2.3
Plastics		8.4		9.3	8.4
Rubber & Leather		-		0.4	1.0
Textiles		1.4		0.8	3.7
Wood		0.3		0.9	0.6
Food		5.0		7.1	7.8
Yard Waste		43.2		41.8	43.2
Other				-	1.6
NON-COMBUSTIBLES					
Glass		5.6		4.9	3.0
Metal (Ferrous)		2.4		2.4	3.7
Aluminum		0.7		0.9	0.6
Concrete/Rock		0.5		2.4	0.0
Other Metals		1.6		-	0.0
Hazardous Wastes		0.5		0.8	1.0*

* Used oil, furn. polish, batteries, cold cans, tiny full house paint cans

TABLE 19
SACRAMENTO CITY AND COUNTY
CITY LANDFILL - COMMERCIAL WASTE STREAM COMPOSITION
APRIL 1989

Sample Size = 6 loads
Total Weight Sorted = 2,147 lbs.
Average Weight Sorted per Sample = 358 lbs.

WASTE CATEGORIES	Mean Percentage		Precision Interval @ 90% Confidence (+/- percent)		Tons		Precision Interval @ 90% Confidence (+/- tons)	
PAPER	41.9%				28,342			
Newspaper		6.1%		12.3%		4,144		8,329
Corrugated Paper		11.3%		22.7%		7,645		15,366
Computer Paper		0.2%		0.4%		132		266
Office Paper		1.5%		3.0%		1,001		2,012
Mixed Recyc. Paper		7.3%		14.8%		4,973		9,996
Non-recyc. Paper		13.8%		27.7%		9,338		18,768
Disposable Diapers		1.5%		3.0%		1,012		2,035
Supermix Paper		0.1%		0.3%		97		195
PLASTIC	8.1%				5,517			
PET Bottles		0.2%		0.4%		129		260
Milk/Juice Containers		0.2%		0.4%		134		269
Polystyrene		0.5%		0.9%		306		615
Film Plastics		4.8%		9.6%		3,224		6,481
Hard Plastic Packaging		1.8%		3.5%		1,192		2,396
Plastic Products		0.7%		1.5%		495		995
Supermix Plastic		0.1%		0.1%		36		72
GLASS	6.6%				4,433			
Refillable Bev. Containers		0.0%		0.0%		0		0
Cal. Redemption		2.6%		5.3%		1,771		3,559
Cal Non-redemption		3.4%		6.8%		2,274		4,570
Plate Glass		0.0%		0.0%		0		0
Non-recyclable Glass		0.4%		0.3%		262		526
Supermix Glass		0.3%		0.5%		177		355
METAL	3.4%				2,269			
Aluminum Cans		0.5%		0.9%		307		618
Tin Cans		1.4%		2.8%		948		1,905
Bi-metal Cans		0.2%		0.4%		140		282
Ferrous Metals		0.4%		0.7%		244		491
Non-ferrous Metals		0.3%		0.6%		199		399
Insulated Wire		0.0%		0.0%		0		0
White Goods		0.0%		0.0%		0		0
Mixed Metals & Materials		0.6%		1.2%		407		818
Supermix Metals		0.0%		0.1%		24		48
RUBBER	0.0%				3			
Rubber Products		0.0%		0.0%		3		6
Tires		0.0%		0.0%		0		0
ORGANICS	31.9%				21,584			
Food		23.0%		46.2%		15,575		31,305
Yard Waste		2.5%		5.1%		1,708		3,433
Leaves and Grass		6.1%		12.2%		4,100		8,240
Other Organics		0.0%		0.1%		19		38
Supermix Organics		0.3%		0.5%		183		368
WOOD	1.1%				737			
OTHER	7.0%				4,732			
Textiles		2.0%		4.0%		1,334		2,681
Leather		0.1%		0.2%		69		139
Ash		0.1%		0.2%		57		114
Ceramics/Porcelain/China		0.2%		0.4%		129		260
Rock/Concrete/Bricks		0.0%		0.0%		0		0
Sand/Soil/Dirt/Fines		3.1%		6.3%		2,124		4,268
Gypsum Drywall		0.0%		0.0%		0		0
Fiberglass Insulation		0.0%		0.0%		0		0
Construction Debris		0.9%		1.5%		621		1,249
Bulky Waste		0.0%		0.0%		0		0
Supermix, Non-distinct Fines		0.6%		1.2%		397		799
HAZARDOUS MATERIALS & CONTAINERS	0.0%				0			
HAZARDOUS CONTAINERS-EMPTY	0.0%				0			
TOTALS	100.00%				67,667			

localf-7/11/89-jd-jdec/a

TABLE 18
SACRAMENTO CITY AND COUNTY
CITY LANDFILL - RESIDENTIAL WASTE STREAM COMPOSITION
APRIL 1989

Sample Size = 11 loads
Total Weight Sorted = 3,316 lbs.
Average Weight Sorted per Sample = 301 lbs.

Adjustment for city loads:
Total weight sorted = 3,316 lbs.
Adjust 35% as yard waste = 1,785 lbs.

WASTE CATEGORIES	Mean Percentage	Precision Interval @ 90% Confidence (+/- percent)	Tons	Precision Interval @ 90% Confidence (+/- tons)
PAPER	24.9%		45,467	
Newspaper	6.7%	8.7%	12,263	15,930
Corrugated Paper	3.8%	3.6%	6,902	6,550
Computer Paper	0.0%	0.0%	0	0
Office Paper	0.2%	0.8%	330	1,393
Mixed Recyc. Paper	5.9%	5.8%	10,715	10,649
Non-recyc. Paper	5.1%	5.2%	9,353	9,519
Disposable Diapers	3.0%	7.1%	5,429	12,963
Supermix Paper	0.3%	0.7%	473	1,326
PLASTIC	5.0%		9,073	
PET Bottles	0.1%	0.3%	240	502
Milk/Juice Containers	0.3%	0.6%	514	1,146
Polystyrene	0.4%	0.6%	668	1,077
Film Plastics	2.0%	1.6%	3,584	2,835
Hard Plastic Packaging	1.2%	1.1%	2,158	2,041
Plastic Products	1.0%	1.5%	1,803	2,808
Supermix Plastic	0.1%	0.2%	106	371
GLASS	4.1%		7,491	
Refillable Bev. Containers	0.0%	0.0%	0	0
Cal. Redemption	1.6%	2.7%	2,914	4,911
Cal Non-redemption	2.3%	2.8%	4,182	5,186
Plate Glass	0.0%	0.0%	0	0
Non-recyclable Glass	0.0%	0.0%	4	29
Supermix Glass	0.2%	0.7%	391	1,325
METAL	3.2%		5,789	
Aluminum Cans	0.3%	0.6%	640	1,058
Tin Cans	1.2%	1.5%	2,132	2,654
Bi-metal Cans	0.0%	0.0%	0	0
Ferrous Metals	0.4%	2.6%	676	4,717
Non-ferrous Metals	0.2%	0.4%	400	754
Insulated Wire	0.0%	0.0%	4	48
White Goods	0.0%	0.0%	0	0
Mixed Metals & Materials	1.0%	4.6%	1,831	8,443
Supermix Metals	0.1%	0.2%	106	359
RUBBER	0.5%		975	
Rubber Products	0.5%	3.3%	975	5,956
Tires	0.0%	0.0%	0	0
WOOD	1.3%		2,372	
ORGANICS	50.9%		93,139	
Food	4.2%	7.6%	7,751	13,930
Yard Waste	37.6%	9.2%	68,673	16,841
Leaves and Grass	8.5%	29.6%	15,490	54,042
Other Organics	0.1%	0.5%	194	924
Supermix Organics	0.6%	3.9%	1,032	7,066
OTHER	9.6%		17,551	
Textiles	4.7%	11.2%	8,625	20,564
Leather	0.0%	0.2%	54	343
Ash	0.1%	0.8%	190	1,468
Ceramics/Porcelain/China	0.0%	0.3%	66	458
Rock/Concrete/Bricks	0.0%	0.0%	0	0
Sand/Soil/Dirt/Fines	0.0%	0.2%	53	437
Gypsum Drywall	0.3%	2.1%	459	3,765
Fiberglass Insulation	0.0%	0.0%	0	0
Construction Debris	0.5%	2.3%	853	4,178
Bulky Waste	0.0%	0.0%	0	0
Supermix, Non-distinct Fines	4.0%	14.7%	7,252	26,893
HAZARDOUS MATERIALS & CONTAINERS	0.4%		674	
HAZARDOUS CONTAINERS-EMPTY	0.2%		285	
TOTAL	100%		182,815	

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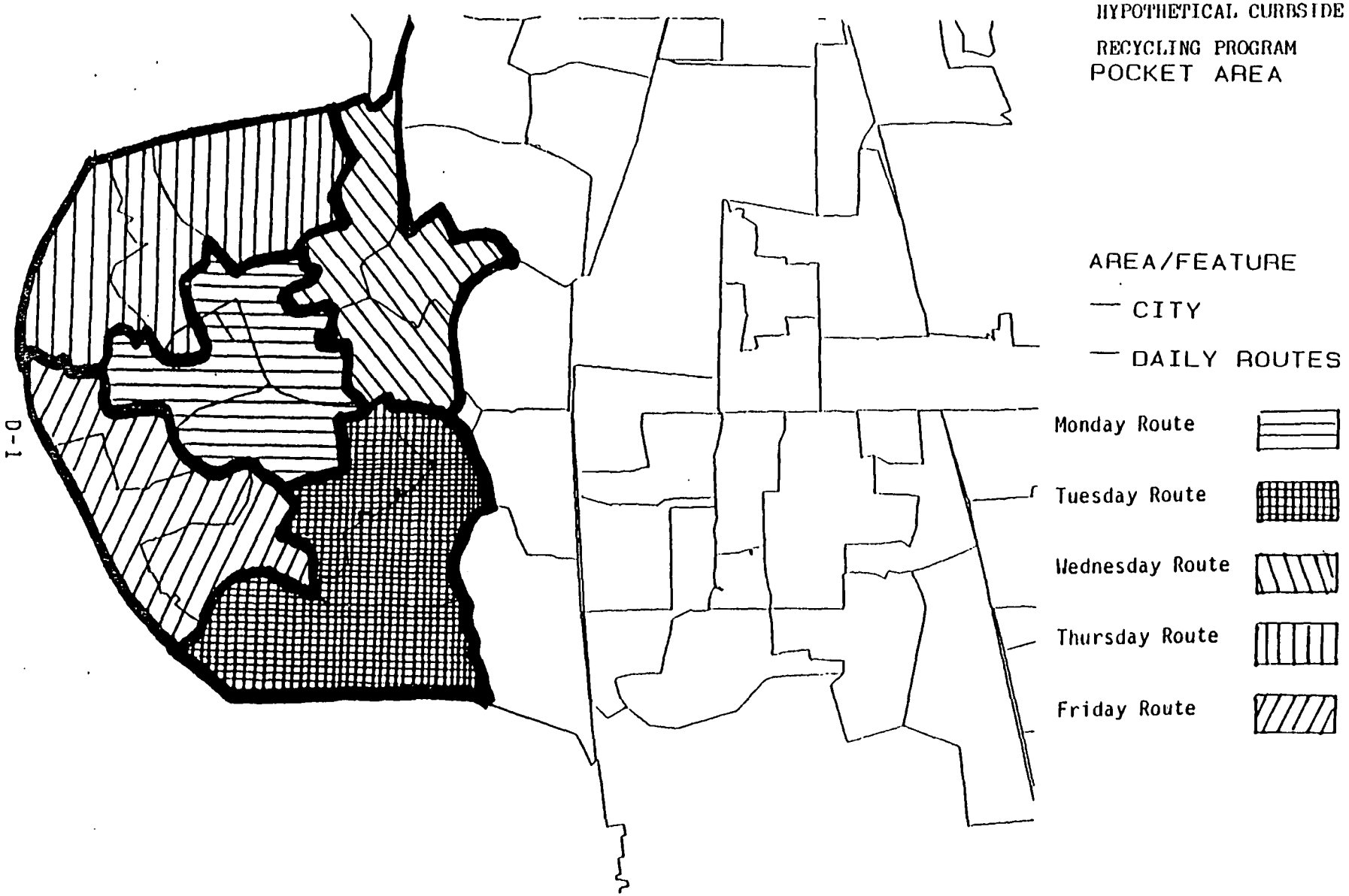
APPENDIX D

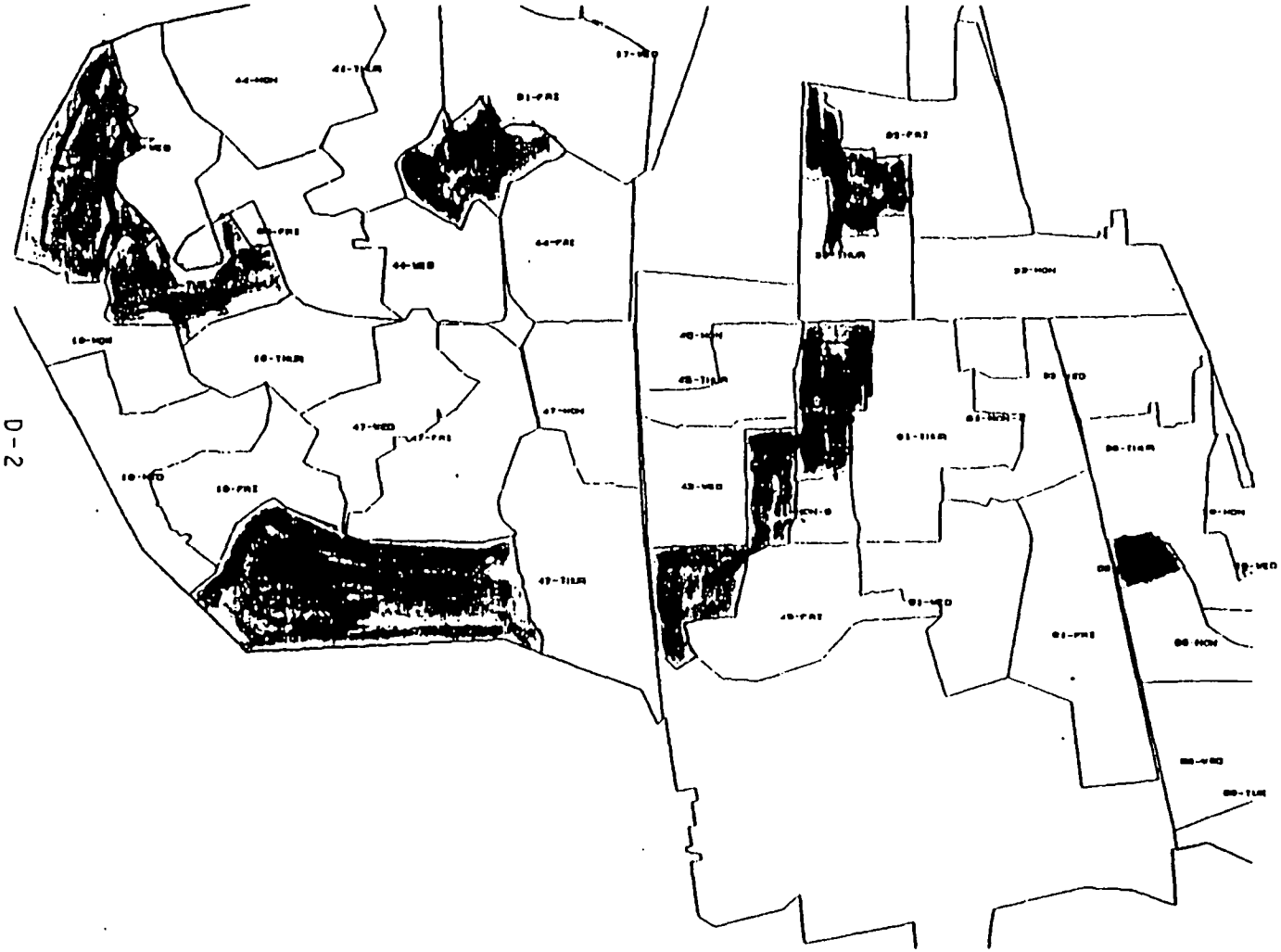

CITY OF SACRAMENTO
HYPOTHETICAL CURBSIDE
RECYCLING PROGRAM
POCKET AREA
AREA/FEATURE
CITY
DAILY ROUTES
Monday Route
Tuesday Route
Wednesday Route
Thursday Route
Friday Route
0
0.71 miles

D-1

CITY OF SACRAMENTO

POCKET AREA

REGULAR ROUTE AREAS



AREA/FEATURE

— DAILY ROUTES

— CITY

D-2

0 0.78 miles

1:40,000

APPENDIX E

APPENDIX E

POTENTIAL ADVANTAGES AND DISADVANTAGES OF VARIOUS CONTAINER TYPES

Alternative	Potential Advantages	Potential Disadvantages	Conditions Which Favor Alternative
Burlap or polymer bags	lowest capital cost (about $ .50/ea.	short lifespan; higher collection costs; difficult for collectors to ID contaminants Less visible to collectors lower participation	Minimized start up costs; low visual impact if desired
No container	no capital cost	high collection costs; low participation aesthetic problem	unacceptable alternative
Plastic bucket (like Marin)	Low capital cost <$2/ea.; good surface for graphics; > efficiency than bags; available in colors	sm. capacity may be diverted to other uses unless holes are drilled in bottom; hard for collector to see contaminants	Can recoup expense with advertising; suitable for sm. generators

Alternative	Potential Advantages	Potential Disadvantages	Conditions Which Favor Alternative
Stackable bins (San Jose) or multiple bins	larger set-outs than buckets or bags; lifespan of 5-10 yrs.; loose NP storage; aesthetic appearance compatible w/ neighborhoods and reinforcement of recycling less processing w/ cleaner prod. due to greater source separation	Expensive (app. $15/set of 3) slow collection increasing coll. costs; loose coll. of NP req. tarped trucks	Visual appearance important to neighborhood less processing required
60-90 gallon containers (Rabanco in Seattle)	least collection costs; greatest compatibility with reg. refuse coll.; greater convenience to res. than bags, or stackable bins; longest lifespan (10+ yrs.); very convenient to resident	Greatest expense ($50+); greatest likelihood of contamination & glass breakage; reduced revenue associated w/ above	Necessity of using reg. refuse coll. fleet; minimized coll. costs

Alternative	Potential Advantages	Potential Disadvantages	Conditions Which Favor Alternative
"Blue Box" method (one container of 14-20 gallons commingled containers & NP bundled or bagged on side)	Favored by BFI & Recycle America (Waste Man.) who also operate multiple bin programs; less collection costs than stackable or bags; easier for operator to see contaminants than bags or stackibles; very convenient to resident; high set-out lbs; sm. expense (app. $4/ea.); flexible-can become a stackable	Greater processing than source separated (multiple bins); more expensive than bags	Convenience to resident w/ reduced capital outlay

APPENDIX F

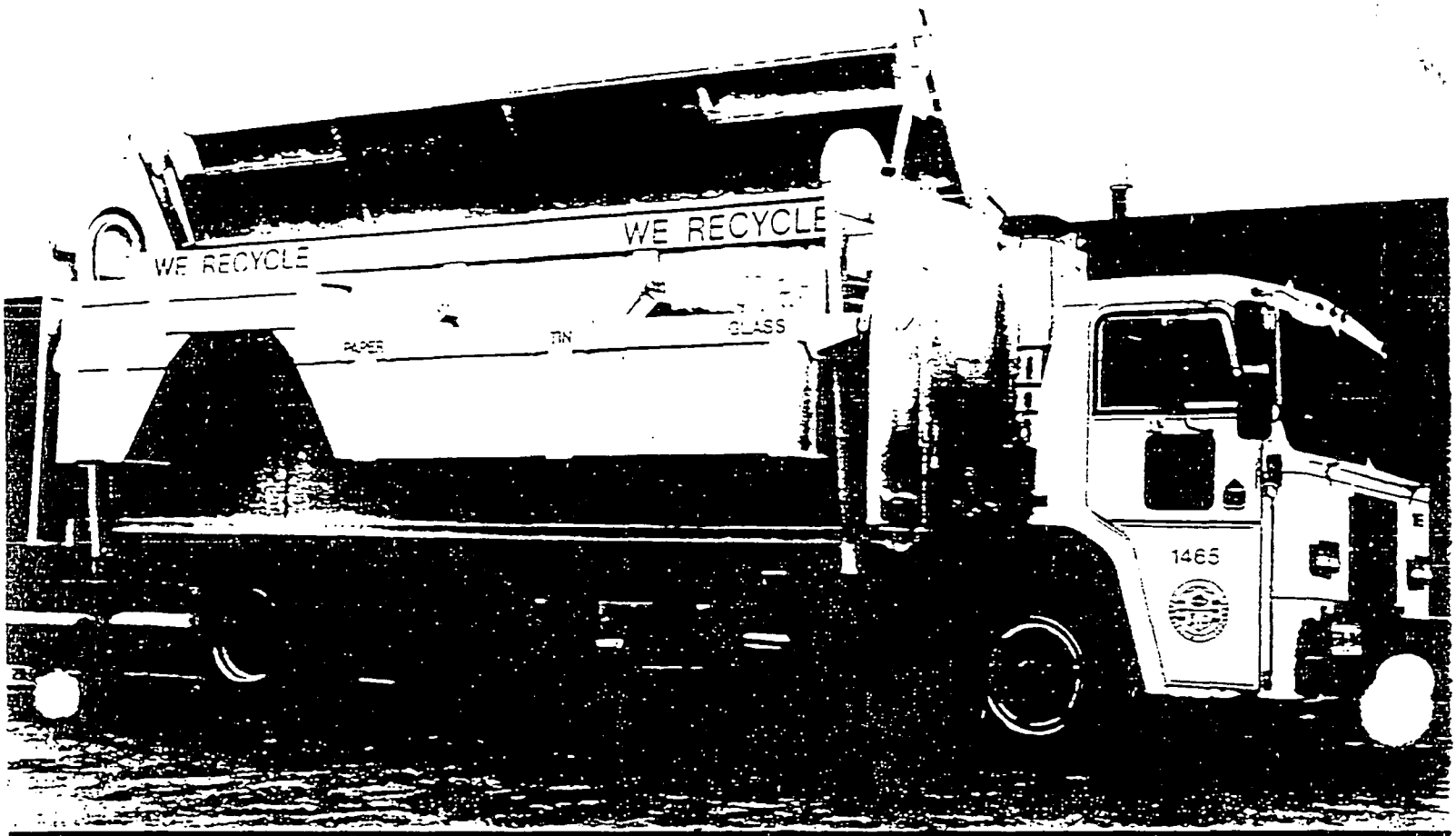
APPENDIX F: Program Alternatives

- B -- Blue Box
- C -- Semi Automated
- D -- Fully Automated

Alternative B

Blue Box

DEMPSTER SYSTEMS



RecycleKing II™

Automated Curbside Collection Vehicle

- Large 31 cubic yard body
- 35 cubic foot trough capacity
- Integrated lift/roof operation
- Ground level release of internal partitions

EXPECT

RecycleKing II™ Automated Curbside Recycling Collection Vehicle

FEATURES

- 31 cu. yd. body
- 35 cu. ft. trough
- 15 second cycle time
- Ground level partition release

BENEFITS

- Reduced trips to recovery facility
- More stops per cycle
- Fast loading
- Reduced exposure to accidental injury

HYDRAULIC SYSTEM

Pump	Tyrone P16 17 gpm @ 1000 rpm
Tilt Cylinder	163" stroke
Trough/Roof Cylinders	4" bore x 22-1/2" stroke
Operating Pressure	2000 psi
Trough Cycle Time	15 seconds
System Oil Capacity	20 gallons

MATERIAL SPECIFICATIONS

	AUTOMATED	MANUAL
Trough	12 Gauge	N/A
Floor	3/16"	10 Gauge
Sides	11 Gauge	11 Gauge
Roof	11 Gauge	12 Gauge
Partitions	11 Gauge	11 Gauge

BODY SPECIFICATIONS

	AUTOMATED	MANUAL
Total Volume	31 cu. yd.	31 cu. yd.
Trough Volume	35 cu. ft.	N/A
Body Weight	10,560 lbs.	7,900 lbs.
Loading Height with 42" Chassis Rail	48"	60"
Overall Height	135"	118"
CHASSIS REQUIREMENTS		
Front Axle	12,000 lb.	
Rear Axle	23,000 lb.	
Cab to Axle (Clear)	190"	157"
Minimum AF	52"	50"

RecycleKing
Manual Curbside Recycling Collection Vehicle

FEATURES

- 31 cu. yd. body
- Four large body access openings
- Aluminum sliding panels
- Ground level partition release
- Large rear door

BENEFITS

- On the route longer
- Less contamination
- Quick and easy adjustments
- Easy on the operator
- No material hang up

DEMPSTER SYSTEMS
RUG International Company

Dempster Systems East
302 North Sage Street
Rockdale, GA 30677
Phone 404/866-6556
Fax 404/866-4318

Dempster Systems West
12927 Marquardt
Santa Fe Springs, CA 90670
Phone 213/921-8652
Fax 213/921-8405

Dempster Systems North
250 New Toronto Street
Toronto, Ontario
Canada M8V 2E8
Phone 416/253-1750

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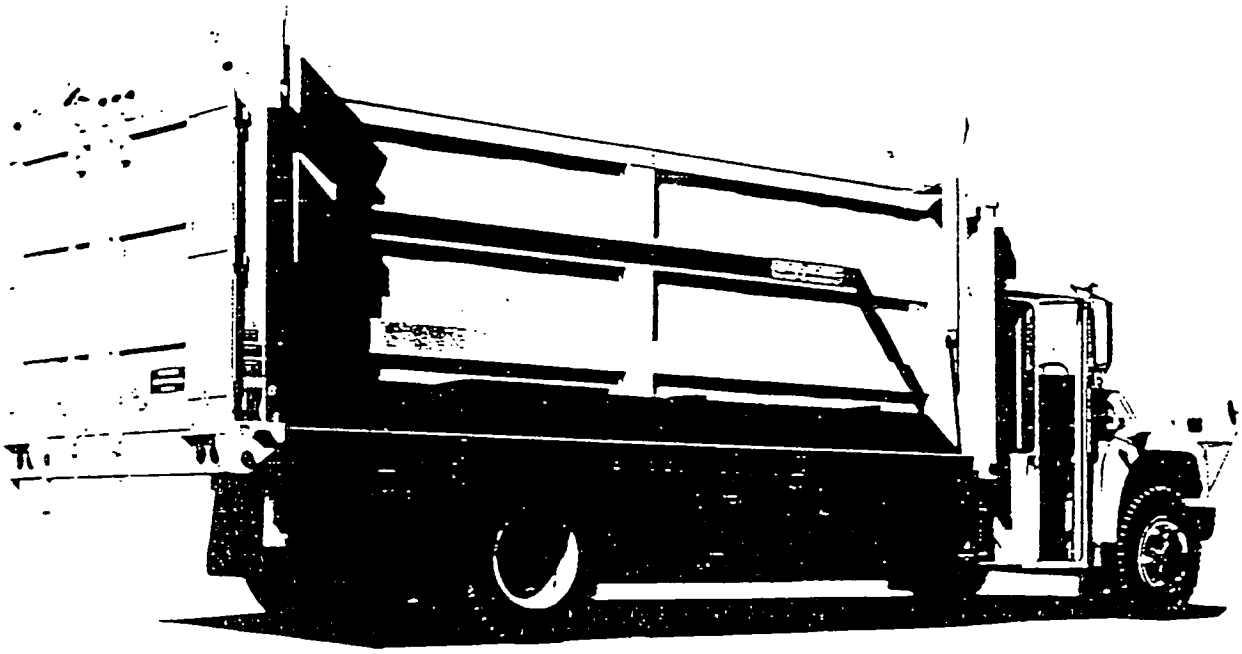
*CONTACT DEMPSTER SYSTEMS for additional details and other applications.
*CLEAR PLATFORM (CT) is the dimension from any item (muffler, transmission shifter housing, etc.) extending behind the cab and above the top of the frame which will interfere with body mounting, to the center line of the trunion of the tandem axle.

THE DESIGN•DURABILITY POWER PLAY



HYDRAULIC OVER TOP LOADING RECYCLER (patent pending)

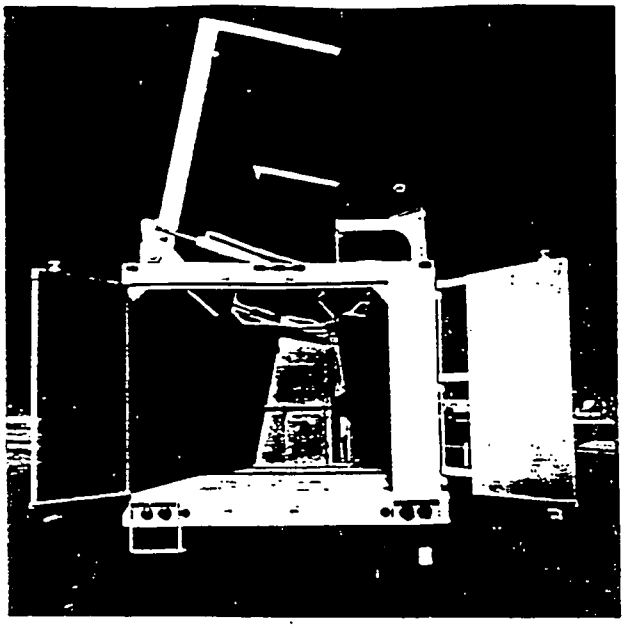
For the collection of recyclable materials, you need the new **LABRIE** Over Top Loading vehicle. Proven to be 75% more productive than any other recycling truck, it saves 2 to 3 hours per day. Designed to keep operator fatigue to minimum, the **LABRIE** Recycler can average more than 125 collection stops per hour or about 2,200 households per day in normal conditions.

The **LABRIE** Recycler is engineered with safety, ease of operation and minimum maintenance in mind. It can be fully loaded with 5 to 6 tons of 2 to 6 different materials in up to 6 adjustable compartments.

LABRIE

TASK FORCE

LABRIE EQUIPMENT LTD.
302, rue du Fleuve, Beaumont, Quebec, CANADA G0R 1C0
Tel.: (418) 837-3606 FAX: (418) 837-7698



FEATURES

- Standard 20 ft 7 inches x 81 inches x 78 inches inside dimensions, 102 inches outside width 31 cu. yds.;
- Hydraulic over top loading device capable of dumping permanent recessed buckets;
- One-man operation;
- Maximum loading height 46";
- Curbside loading;
- Dump unloading;
- Fully opening rear doors;
- 1 to 5 movable swing-type compartment dividers adjustable to 12" centers, for up to 6 different products;
- Overhead track for partition support while moving;
- Walk through insulated cab with sliding doors;
- Right hand side, stand up drive, 16" step in height;
- Left hand side, sit down drive.

AVAILABLE OPTIONS

- Manual loading on left side;
- Attachment system that allows dumping of 3-90 gals roll carts at a time.

Because of our commitment to constant product improvement, all designs, specifications and components are subject to change at the manufacturer's sole discretion at any time without notice.

CHASSIS SPECIFICATIONS (FLAT BACK COWL STYLE)

- Navistar International 1754 "S" series;
- Engine DT-360 Diesel, 170 H.P. at 2 600 R.P.M.;
- Gross vehicle weight 28 000 lbs;
- Transmission Allison MT-643;
- Axles Front: 9 000 lbs
  Rear: 19 000 lbs

Printe) Canada

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LABRIE

TOP SELECT 2000

STANDARD SPECIFICATIONS

- Length 20 ft 8 in. (6.29 m)
- Outside width of body not to exceed 102 in.(259 cm)
- Inside width of body, 59 in.(150 cm) at bottom, 89 in.(226 cm) at top
- Loading height 46 in.(117 cm)
- Maximum height in loading position 13 ft 8 in.(4.16 m)
- Volume 29 cu.yd. (22 cu.m) approximately
- Cycle time 15 seconds

Floor, 3/16" steel
Front, 13 ga steel
Sides, 12 ga steel
Doors, 13 ga steel, barn type
Roof, 16 ga. steel arched

- Loading device hydraulic "over top" permanent recessed buckets
- 1 to 5 movable steel partitions adjustable to 12"(31 cm) centers, for up to 6 different products
- Attachment system that allows dumping of 3-90 gals roll carts at a time
- Walk through insulated cab with sliding doors.
  Right hand side, stand up drive, 18"(46 cm) step in height
  Left hand side, sit down drive

CHASSIS SPECIFICATIONS

- Navistar International 4900 Flat back cowl chassis
- G.V.W. 32,900 lbs (14,923 kg)
- 12,000 lbs (5,443 kg) front axle
- 22,000 lbs (9,979 kg) rear axle
- DT-466, 185 H.P. Diesel
- Allison MT-643 automatic

OPTIONS

- Ford F-800 Flat back cowl chassis, GVW 32,000 lbs (14,515 kg)
- International 4900 Full cab with modified right hand side for stand up drive
- Hydraulic loading device on left hand side
- Air operated partitions
- Plastic crusher
- Left hand side, stand up drive, 18 in. (46 cm) step in height

Administration: 302, rue du Fleuve, Beaumont, (Québec) Canada G0R 1C0
Tél.: 418. 837. 3606 Watt (Québec): 1. 800. 463. 5178 Watt (Canada): 1. 800. 463. 6638 Fax: 418. 837. 7698

Usine: 175, rue du Pont, St-Nicolas (Québec) Canada G0S 2Z0
Tél.: 418. 831. 8250 Fax: 418. 831. 5255

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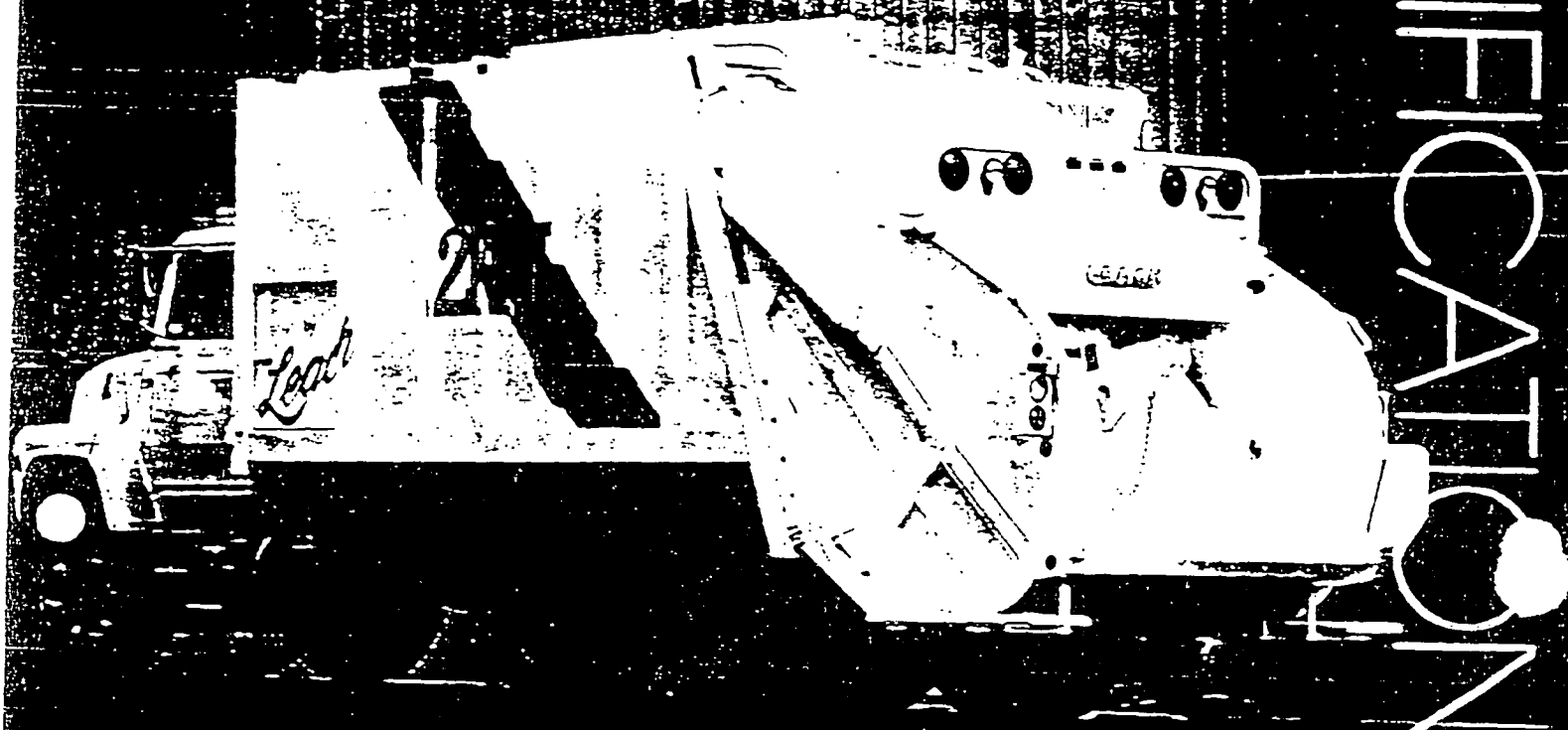
Alternative C

Semi Automated

Leach 2-R II Packmaster®

SPECIFICATIONS



Body shown with optional equipment.

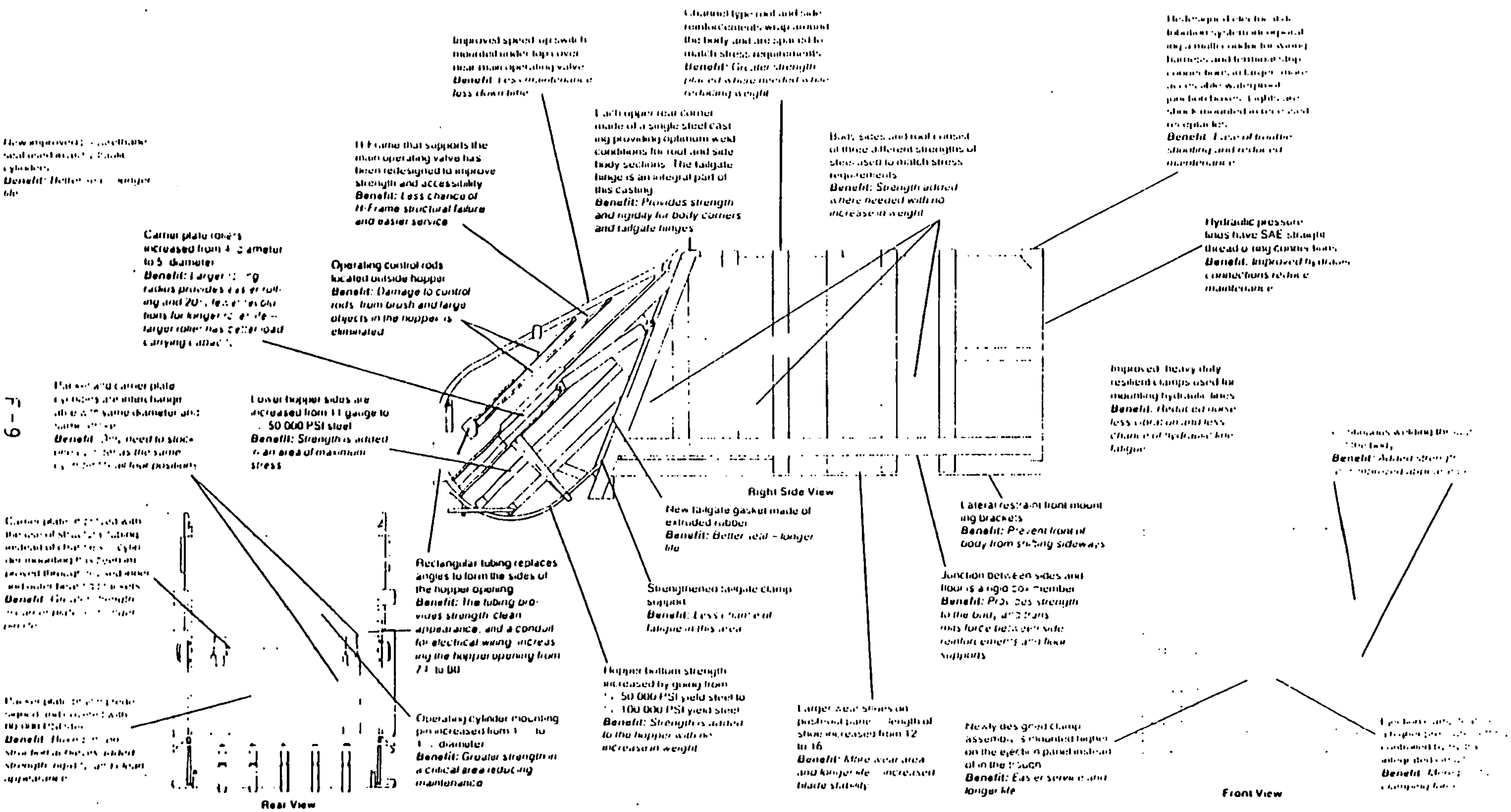
Rugged ■ Strong ■ Greatest compaction in the industry

- Fully Usable 2.7 Cubic Yard Hopper
- Takes Virtually All Types Of Refuse
- Single-Lever Push-Out Control
- Single-Lever Packer Plate Control
- Clean Bulldozer-Shaped Push-Out Plate....Nothing Hangs Up At The Disposal Site
- Exclusive Leach Single Stage Push-Out System
- Open Front End And Standard Side Door For Easy Maintenance Access
- The Industry's #1 Choice
- The Best Compaction In The Industry ... Bigger Loads, Fewer Trips, Greater Savings
- Leach Built....Leach Reliability
- Meets All ANSI Safety Standards
- Available In 20, 25, And 31 Cubic Yard Capacities
- Leach Exclusive Baked-On Enamel Finish
- Built Better To Last Longer

LEACH America's most efficient refuse collection systems.

F-8

Leach 2-R II Features



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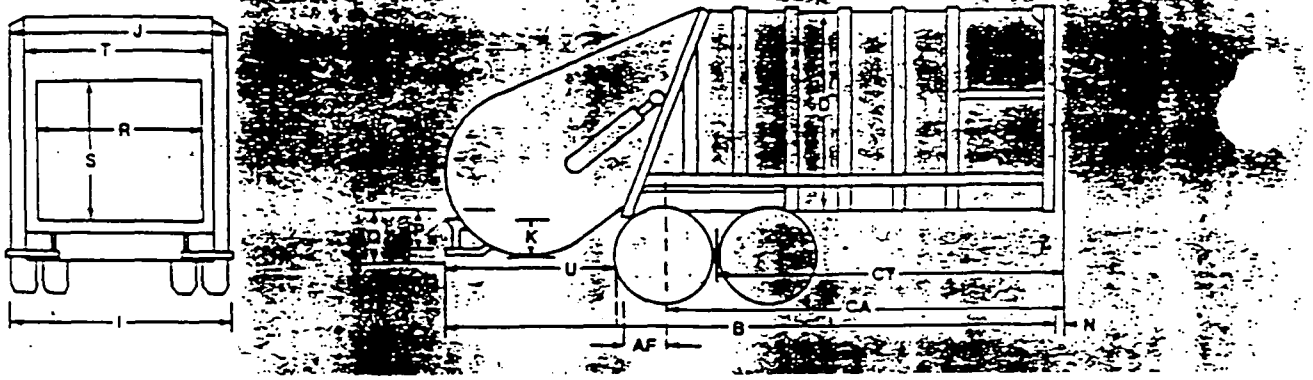
Leach 2-R II Packmaster®

SPECIFICATIONS



	BODY DIMENSIONS	20 Cu. Yd.	25 Cu. Yd.	31 Cu. Yd.	15m³	19m³	24m³
AF	After Frame	20"	20"	20"	508mm	508mm	508mm
B	Overall Length	249"	270"	316"	6325mm	6858mm	8026mm
CA	To Centerline of Rear Axle	154"	175"	221"	3912mm	4445mm	5613mm
CT	To Centerline of Trunion (50" Beam)	129"	150"	196"	3277mm	3810mm	4978mm
D	Height Above Chassis Frame (with 3" sill)	100"	100"	100"	2540mm	2540mm	2540mm
I	Body—Outside Width	96"	96"	96"	2439mm	2439mm	2439mm
J	Body Inside Width	90"	90"	90"	2286mm	2286mm	2286mm
K	Hopper Depth	17"	17"	17"	432mm	432mm	432mm
N	Interference Point Above Chassis Frame	4"	4"	4"	102mm	102mm	102mm
P	Top of Step Below Chassis Frame	19"	19"	19"	483mm	483mm	483mm
Q	Hopper Bottom Below Chassis Frame	23"	23"	23"	585mm	585mm	585mm
R	Hopper Opening Width	80"	80"	80"	2032mm	2032mm	2032mm
S	Hopper Opening Height	56"	56"	56"	1423mm	1423mm	1423mm
T	Hopper Inside Width	80"	80"	80"	2032mm	2032mm	2032mm
U	Rear of Body to Rear of Tailgate Closed	74"	74"	74"	1880mm	1880mm	1880mm
■	Height Above Chassis Frame (Tailgate Raised)	194"	194"	194"	4928mm	4928mm	4928mm
■	Loading Lip Below Chassis Frame	5"	5"	5"	127mm	127mm	127mm
■	Center of Gravity Measured From Front of Body						
	—Body Only	117"	131"	151"	2972mm	3328mm	3836mm
	—Pay Load	94"	103"	120"	2388mm	2617mm	3048mm
■	Hopper Capacity	2.7 Cu. Yd.	2.7 Cu. Yd.	2.7 Cu. Yd.	2.0 m³	2.0 m³	2.0 m³
■	Approx. Body Weight	14,495 lbs	15,020 lbs	16,125 lbs	6575kg	6813kg	7314kg
■	Min Truck GVWR Requirement	46,000 lbs	52,000 lbs	60,000 lbs	21000 kg	24000 kg	28000 kg

NOTES: *Truck selected must be capable of carrying net weight of body plus weight of refuse to be collected.
*A full variable speed governor is preferred on truck equipped with diesel engine.
*CA Must be usable with no obstructions protruding above frame.
*Specifications subject to change without notice.

Features

1. Sides, front and rear reinforced with electrically welded box sections.
2. Contents of body sealed off from outside during compaction period.
3. Steps and grab handles both sides of tailgate.
4. Buzzer system provided both sides at rear to enable loaders to signal driver.
5. Load is pushed out by simple, easily maintained, double-acting cylinder.
6. Single lever packer control at rear of hopper ...curbside.
7. Single lever ejection control at front of body ...street side.
8. Single lever tailgate lift control at front of body ...street side.
9. Leach exclusive baked-on enamel finish. White standard. Other colors optional. (Other colors may affect visibility)
10. Meets all ANSI Safety Standards.

Hydraulic System

- **Cylinders**
  (2) 6" double-acting packer plate cylinders*
  (2) 6" double-acting carrier plate cylinders*
  (1) 6" double-acting ejection cylinder
  (1) 6" single-acting clamping cylinder
  (2) 4" single-acting tailgate lift cylinders
  *Packer and carrier plate cylinders are fully interchangeable... an exclusive with the LEACH 2-R II.
- **Pump**
  Leach—spur gear type
  Capacity—42 GPM @ 1400 RPM
  Maximum operating pressure—1650 PSI
- **Hydraulic Tank**
  Capacity—70 gallons
  Location—Right hand front on floor inside body
  Filters—141 micron in-tank suction strainer
  —20 micron return line filter
  —By-pass valve
- **Sight gauge**—located on tank at eye level

Body Construction

- **Sides**—11 gauge Hi-Tensile, EX-TEN 50, 80,000 PSI
- **Top**—11 gauge Hi-Tensile
- **Floor**—11 gauge Hi-Tensile
- **Floor trough**—3/16" EX-TEN 50

Tailgate Construction

- **Hopper sides**—¼" EX-TEN 50
- **Hopper bottom**—¼" 100,000 PSI
- **Packer and carrier plates**—3/16" EX-TEN 50, Packer Face ¼" Bethstar 80
- **Top Sheet**—Secured with quick release fasteners ...easily removed for maintenance

Optional Equipment

- Chain container attachment
- Hydraulic container attachment
- 8,000 lb. overhead winch
- 12,000 overhead winch
- 12,000 lb. container lifting cylinder

LEACH

Pacesetter in Sanitation

EL Industries Inc.
2 North LaSalle Street
Chicago, Illinois 60602
(312) 236-0728

International Distribution:
EL Industries International
2 North LaSalle Street • Chicago, Illinois 60602
Cable: ELINDINT CGO • Telex 25-4145

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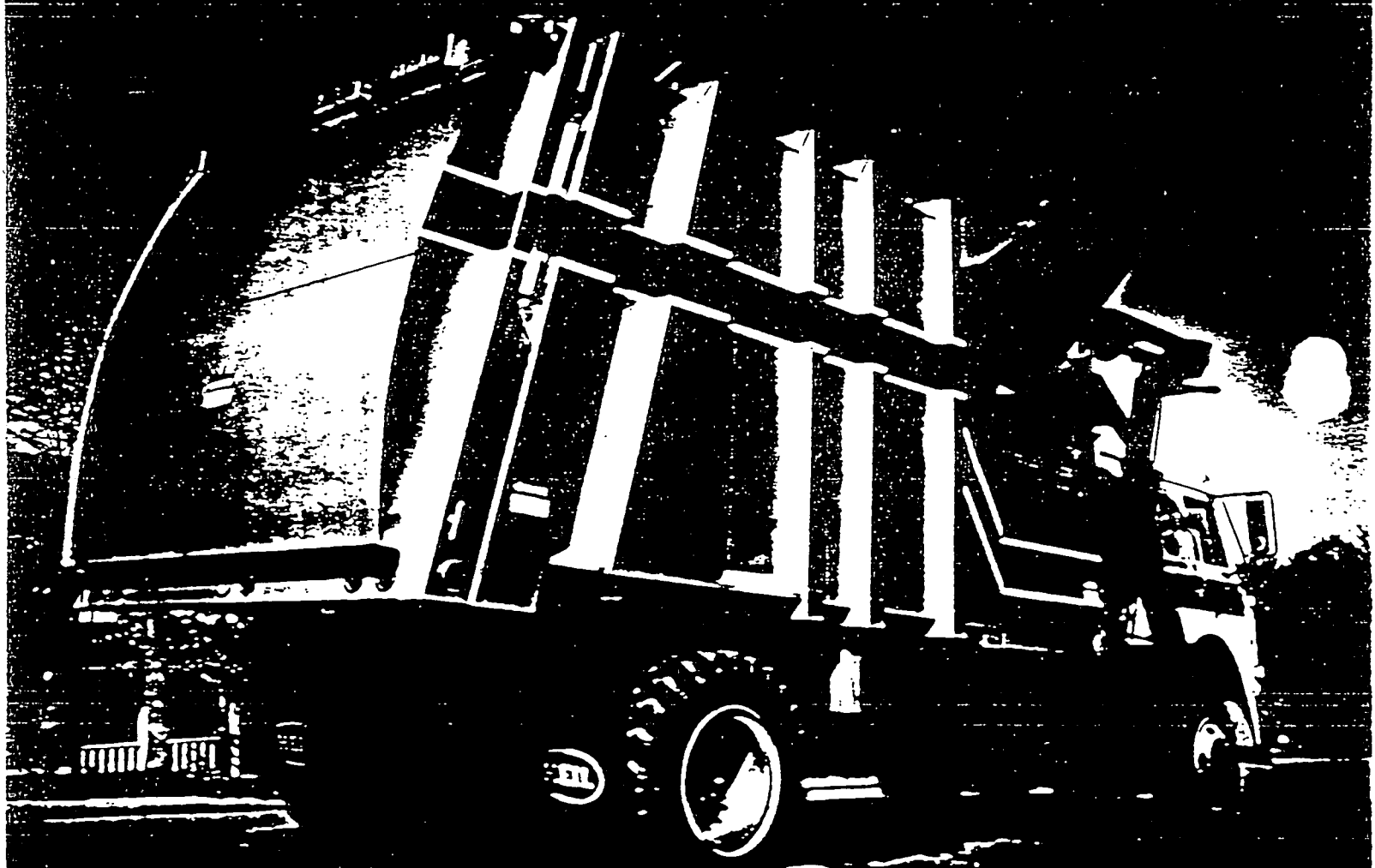
Alternative D

Fully Automated

HEIL FORMULA 7000
AUTOMATED SIDE LOADER

All you need is an operator.

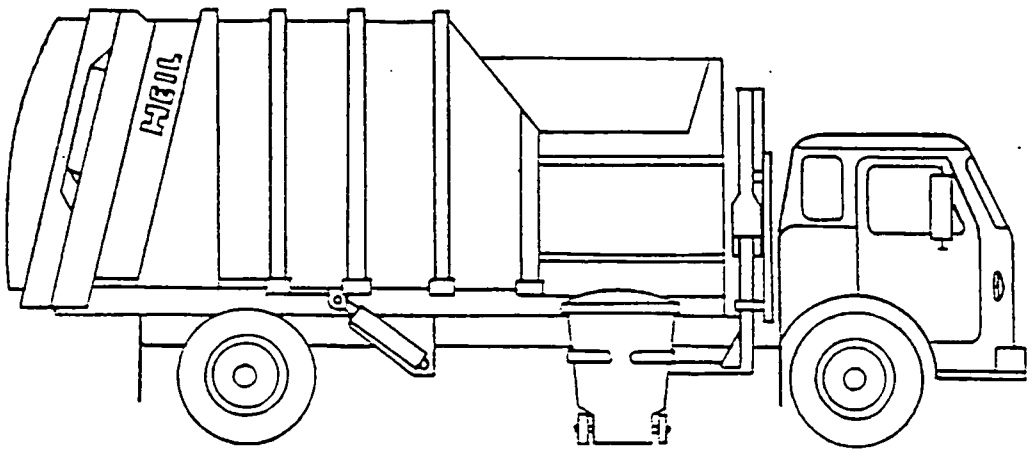


Putting you first keeps us first.

CONSTRUCTION SPECIFICATIONS		
HIGH TENSILE STEEL	Thickness	mm
Body sides	11 ga.	3.038
Body roof	14 ga.	1.897
Body floor	11 ga.	3.038
Body longitudinal	8 ga.	4.176
Floor support members	11 ga.	3.038
Tailgate rear panel	12 ga.	2.657
Tailgate sides	11 ga.	3.038
Hopper floor	7 ga.	4.554
Hopper sides	8 ga.	4.176
Packing ram face	¼ in.	6.350
Spill shield	11 ga.	3.038

HYDRAULIC SPECIFICATIONS	
PUMP	
Type: Front mount, engine driven.	Single aluminum, sleeve bearing.
PTO driven	Single cast iron, roller bearing
Maximum operating pressure.	2,500 psi (17,237 kPa)
Working RPM	1,200 RPM approximate. Stationary.
GPM at Working RPM	23 GPM (87 Liters/min.) approximate
OIL RESERVOIR - Chassis frame mounted	
Tank capacity	44½ gallons (168 Liters)
Oil system gross capacity	60 gallons (227 Liters)
Filters	Return line 25 micron replaceable element.
VALVES	
Shut-off	Suction line. Optional
Packing control	Electric solenoid operated single spool.
Hoist and tailgate	In-cab, cable operated.

FORMULA® 7000
AUTOMATED SIDE LOADER SPECIFICATIONS



BODY SPECIFICATIONS

MODEL	BODY CAPACITY Yds.³	BODY CAPACITY m³	HOPPER CAPACITY Yds.³	HOPPER CAPACITY m³	OVERALL LENGTH (a) In.	OVERALL LENGTH (a) mm	OVERALL LENGTH TAILGATE RAISED In.	OVERALL LENGTH TAILGATE RAISED mm	OVERALL WIDTH In.	OVERALL WIDTH mm	OVERALL HEIGHT ABOVE FRAME TAILGATE LOWERED In.	OVERALL HEIGHT ABOVE FRAME TAILGATE LOWERED mm	OVERALL HEIGHT ABOVE FRAME TAILGATE RAISED In.	OVERALL HEIGHT ABOVE FRAME TAILGATE RAISED mm	OVERALL WEIGHT (b) Approximate Lbs.	OVERALL WEIGHT (b) Approximate kg
7000-24	24.2	18.5	3.0	2.3	228	5791	247	5274	96	2438	95½	2426	169	4293	11,000	4989
7000-33	33	25.3	3.0	2.3	285	7239	307	7798	96	2438	95½	2426	169	4293	12,200	5533

CHASSIS REQUIREMENTS

MODEL	MIN. GVWR	MIN. GAWR Front	MIN. GAWR Rear	USABLE CA Range	USABLE CA Recom.	USABLE CT Range	USABLE CT Recom.	MIN. AF
7000-24	39,000	16,000	23,000	165-180	174	N/A	N/A	**36
7000-33	52,000	18,000	34,000	N/A	N/A	200-205	200	53

** 36" or 5" minimum beyond rear edge of rear spring hanger.

CYLINDERS

2 TAILGATE RAISE				1 PACKING BLADE Double Acting				2 BODY HOIST			
BORE In.	BORE mm	STROKE In.	STROKE mm	BORE In.	BORE mm	STROKE In.	STROKE mm	BORE In.	BORE mm	STROKE In.	STROKE mm
3	76.2	25¼	641.4	5.5	139.7	54	1371.6	4	101.6	56	1422.4

LIFT SPECIFICATIONS

Lift loading capacity	2,000 lbs. (907 kg.)
Cycle time	8 seconds, approximate
Frame	80,000 lb. psi yield
Reach	48 in. (1219.2 mm) from side of body to centerline of 90 gal. container.
Ground clearance	13 in. (330.2 mm) Empty.
Overall width	Within 96 in. (2438.4 mm) legal limit with lift in storage position
Weight	1,000 lbs. (454 kg) approximate
Mounting length	18 in. (457 mm)
Controls	In-cab, three lever with feathering capability.
Hydraulics	Three, 3 in. (76.2 mm) diameter cylinders with hardened and chrome plated rods cushioned at both ends of stroke. Operates at 2,000 psi maximum pressure. Designed to function in - 25° F to 110° F (- 32°C to 43°C) ambient temperature.

(a) Not including lift.
(b) Not including lift but including mounting hardware.

THE HEIL CO.
Solid Waste Systems Division
P.O. Box 8676 • Chattanooga, TN 37411
Telephone (615) 899-9100

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APPENDIX G

List of Operating Material Recovery Facilities

Location/Sponsor/(Owner - Operator) Status	Throughput/ Capital Cost/ Residue	Type of Input
California		
San Francisco (West Coast Salvage) Status: Design)	- - -	Paper/Bottles & Cans Paper: ONP/OCC/Mixed Glass: All Plastic: PET
Connecticut		
Bridgeport Greater Bridgeport Regional Recycling Board Status: Procurement	58,000 TPY (D) - 10% (D)	Total Commingled Paper: ONP/OCC Metal: AC/TC Glass: All Plastic: Possibly later
Bristol Connecticut Resource Recovery Authority (Ogden Martin--Operational 1990) Status: Procurement	100 TPD (D) - 20%	Paper/Bottles & Cans Paper: ONP Metal: AC/TC Glass: All Plastic: HDPE/PET

Groton SE CT Regional Resource Recovery Authority (Owned by SECRRRA and Town of Groton; Oper. by Resource Recovery Systems) Operational since 1982; upgraded in 1989	15 TPD (A) 40 TPD (D) - 20 +% (D)	Bottles & Cans Only Paper: None Metal: AC/TC Glass: All Plastic: HDPE/PET
Hartford Area REI Distributors, Inc. (Owned and oper. by REI since 7/89) Status: Construction	50 TPD (D) - < 2% (D)	Bottles & Cans Only Paper: none Metal: AC/TC Glass: All Plastic: HDPE/PET
South Central CT South Central Reg. COG (Oper. by 1989) Status: Design	80 TPD (D) $2.3-3 million -	Bottles & Cans Only Paper: None Metal: AC/TC Glass: All Plastic: None
Florida		
Palm Beach County Palm Beach County Solid Waste Authority (oper. in 1991) Status: Design	500 TPD (D) $6 million (D) -	Paper/Bottles & Cans Paper: O N P (possibly OCC & Mixed) Metal: AC Glass: All Plastic: HDPE/PET
Pinellas County (owned and oper. by Recycle America-oper. by 12/89) Status: Construction	200 TPD (D) $2 million (D) -	N/A Paper: ONP/OCC/High Grade Metal: AC/TC Glass: All Plastic: HDPE/PET

Illinois

Dupage County Dupage County (oper. by 11/90) Status: Procurement	150 TPD (D) $3-3.5 million 15% (D)	Paper/Bottles & Cans Paper: ONP/OCC Metal: AC/TC Glass: All Plastic: HDPE/PET
Boston Commonwealth of Mass. Status: Design	200 TPD (D) - -	N/A Paper: - Metal: - Glass: - Plastic: -
Cambridge Commonwealth of Mass. Status: Design	200 TPD (D) - -	N/A Paper: - Metal: - Glass: - Plastic: -
Merrimac Valley Ogden Martin Systems (owned & oper. by Ogden Martin Systems--oper. in 1990) Status: Design	150 TPD (D) - -	N/A Paper: ONP/OCC/Mixed (possible) Metal: AC/TC Glass: All Plastic: HDPE/PET
Milberry Wheelabrator Environmental Systems (owned & oper. by Wheelabrator) Status: Design	- - -	N/A Paper: - Metal: - Glass: - Plastic: -

Milbury Wheelabrator Environmental Systems (oper. by Wheelabrator) Status: Design	- - -	N/A Paper: - Metal: - Glass: - Plastic: -
Rochester Materials Recovery and Recycling Corp. (owned by MRRC; oper. by Energy Answers Corp.); oper. in 1990 Status: Design	100 TPD (D) - 10% (D)	Total Commingled Paper: ONP Metal: AC/TC Glass: All Plastic: HDPE/PET
Springfield Commonwealth of Mass. (owned by Commonwealth; oper. by Resource Recovery Systems); operational by 1989 Status: Construction	240 TPD (D) $4.1 million (D) 10% (D)	Paper/Bottles & Cans Paper: ONP/OCC/Mixed (145 TPD) Metal: AC/TC Glass: All Plastic: none
New Jersey		
Atlantic County Atlantic County Utilities Authority (owned and oper. by ACUA) Status: Design	150-160 TPD (D)	Paper/Bottles & Cans Paper: ONP Metal: AC Glass: All Plastic: none
Camden County Camden County Utilities Authority (owned by Camden County; oper. by Resource Recovery Systems); oper since April ;1986 Status: Operational	6065 TPD (A) $400,000 (equip. only) 20% (A)	Bottles & Cans only Paper: none Metal: AC/TC Glass: All Plastic: HDPE/PET (for pilot program)

Cape May County Cape May County Municipal Utilities Authority (owned by CMCMUA; oper. by Empire Returns); oper. by 11/89	225 TPD (D) $5 million (D) <5% (D)	Paper/Bottles & Cans Paper: ONP/OCC/Mixed Metal: AC/TC/AL Glass: All Plastic: HDPE/PET
Cumberland County Cumberland County Improvement Authority (owned and oper. by CCIA); oper. by early 1990 Status: Procurement	50-80 TPD (D) $2.5 million (D) <10%	Paper/Bottles & Cans Paper: ONP Metal: AC/TC Glass: All Plastic: none
Glouchester Glouchester County; RFQ issued in March 1989; construction to begin in 1990 Status: Procurement	38,000-40,000 TPY (D) - -	N/A Paper: ONP Metal: AC Glass: All Plastic: none
Mercer County		
Mercer County Improvement Authority (owned & oper. by MCIA); oper. by 12/1989 Status: Design	300 + TPD (D) - <10%	Paper/Bottles & Cans Paper: ONP/Magazines Metal: AC/TC Glass: All Plastic: HDPE/PET
Monmouth County Monmouth Processing (owned & oper. by Monmouth Processing); oper. since 1/89 Status: operational	2025 TPD (A) 80 TPD (D) $1 million (A) 10% (A)	Bottles & Cans only Paper: none Metal: AC/TC Glass: All Plastic: none

Newark REI (owned & oper. by REI); oper since 2/88 Status: operational	20 TPH (A) 25 TPH (D) - <2%	Bottles & Cans only Paper: none Metal: AC/TC Glass: All Plastic: Summer 1989
Ocean County (owned by Ocean County); oper. in late 1990 Status: operational	300 TPD (D) $5 million (D) -	Total Commingled Paper: ONP/OCC/Mixed Metal: AC/TC Glass: All Plastic: HDPE/PET
Ocean County (owned & oper. by Rosetto Bros.); oper. since 10/88 Status: operational	32 TPD (A) - 25% (A)	Bottles & Cans only Paper: none Metal: AC/TC Glass: All Plastic: none
Somerset County (owned and oper. by Somerset County); oper. in late 1990 Status: Design	10-150 TPD (A) -(D) -(A); $3.8 million (D) 2-3% (A); -(D)	Paper, Bottles & Cans Paper: ONP (A); ONP (D) Metal: AC (A); AC/TC (D) Glass: All Plastic: HDPE/PET (D)
Sussex County Sussex County Municipal Utilities Authority; oper. in late 1990 Status: Design	140 TPD (D) $1.5 million (D) -	Paper/Bottles & Cans Paper: ONP/OCC/high grade Metal: AC/TC Glass: All Plastic: HDPE/PET

Warren County Oper. by Fall 1990 Status: Design	- - -	Bottles & Cans only Paper: none Metal: AC/TC Glass: All Plastic: HDPE/PET
West Patterson (owned & oper. by WPAR); oper. since April 1988 Status: operational	- - -	Bottles & Cans only Paper: none Metal: AC/TC]Glass: All Plastic: HDPE/PET
New York Babylon oper. since 1991 Status: Design	- - -	N/A Paper: - Metal: - Glass: - Plastic: -
Brookhaven (owned and oper. by Town of Brookhaven); oper. by 1/90 Status: procurement	300 TPD (D) $6-7 million (D) 10% (D)	Total Commingled Paper: ONP/Mixed/High Grade Metal: AC/TC Glass: All Plastic: HDPE/PET (possible)
Huntington (owned by Town of Huntington and oper. by Combustion Engineering) Status: procurement	130 TPD (D) $6 million -	Paper/Bottle & Cans Paper: ONP/OCC/Mixed Metal: AC/TC Glass: All Plastic: HDPE/PET

Islip (owned and oper. by Town of Islip); oper. since 1980; upgraded facility oper. in Fall 1990 Status: operational	600 T/W (A); 1500 T/W (D) -(A); $ 6 million (D) 12% (A); -(D)	Total Commingled Paper: ONP/OC.mixed Metal: AC/TC Glass: All Plastic: HDPE/PT (w/ new facility)
New York City (E. Harlem) (owned by NYC; oper. by Resource Recovery Systems); oper. since 6/88 Status: operational	40 TPD (A) $3.6 million (upgrade) -	Bottles & Cans only Paper: none Metal: AC/TC Glass: All Plastic: Will upgrade
New York City (Staten Island--owned by NYC); oper. by end of 1991 Status: Design	200 TPD (D) - -	Paper/Bottle & Cans Paper: ONP/OC/Magazine Metal: AC/TC Glass: All Plastic: HDPE/PT
Syracuse (owned and oper. by Empire Returns Corp.); oper. by May 1989 Status: Construction	160 TPD (D) - -	Paper/Bottles & Cans Paper: ONP/OCC/Mixed Metal: AC/TC Glass: All Plastic: HDPE/PET
W. Finger Lakes (SWM Authority) Status: Design	75 TPD (D) - -	Total Commingled Paper: ONP/OC Metal: AC/TC Glass: All Plastic: HDPE/PET

Westbury (owned & oper. by OMNI Recycling of Westbury); oper. since 9/88 Status: operational	50 TPD (A) $400,000 + (equip. only) 2-3% (A)	Bottles & Cans only Paper: none Metal: AC/TC Glass: All Plastic: none
Westchester County (owned and oper. by Wheelabrator Environmental Systems) Status: Design	100,000 TPY (D) - -	Paper/Bottles & Cans Paper: ONP Metal: AC/TC Glass: All Plastic: none
North Carolina		
Mecklenberg County (Oper. in 9/89) Status: Procurement	200 TPD (D) $2.5 million (D)	Total Commingled Paper: ONP/OCC Metal: AC/TC Glass: All Plastic: PET
Ohio Akron (owned & oper. by WTE); oper. by April 1989 Status: Procurement	9,000 TPY (D) - -	Paper.Bottles & Cans Paper: ONP Metal: AC/TC Glass: All Plastic: HDPE/PET
Pennsylvania Berks County (construction to begin in 1990) Status: Design	- - -	Paper/Bottle & Cans Paper: ONP Metal: AC/TC Glass: All Plastic: none
Bristol (owned and oper. by Otter)--oper. since 9/88	40-50 TPD (A); 60+ TPD (D) $1 million (A) 1-2% (A)	Bottles & Cans only Paper: none Metal: AC/TC Glass: All Plastic: none

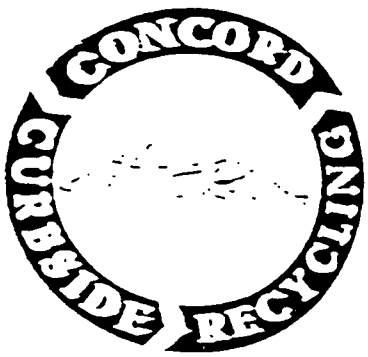
Bucks County (oper. by summer 1990) Status: procurement	145 TPD(D) - 10-15% (D)	Total Commingled Paper: ONP/OCC/Mixed Metal: AC/TC Glass: All Plastic: HDPE/PET
Centre County (owned and oper. by Centre County Solid Waste Authority); oper. by 9/89	80-100 TPD (D) $.8-1 million (D)	N/A Paper: ONP/OCC/high grade Metal: AC/TC Glass: All Plastic: HDPE/PET
Lackawana County (owned by Lackawana Co. SWM Authority; oper. by 1/90)	100 TPD (D) $2 million (D)	Paper/Bottles & Cans Paper: ONP/OCC/ Magazines Metal: AC/TC Glass: All Plastic: HDPE/PET
Monroe County (owned by Monroe Co. Gen. Authority--construction to begin in 1990)	40 TPD (D) - -	Bottle & Cans only Paper: none Metal: AC/TC Glass: All Plastic: HDPE/PET
Philadelphia (owned & oper. by Nat'l Temple Recycling--oper. by summer 1989)	10 TPD (A); 100 TPD (D) $1-1.7 million (D)	Paper/Bottles & Cans Paper: ONP Metal: AC/TC Glass: All Plastic: HDPE/PET

York County (Owned and oper. by Recycle America); oper. since 1/89	- - -	Paper/Bottles & Cans Paper: ONP Glass: All Plastic: none
Rhode Island		
Rhode Island (Owned by RISWMC; oper. by NECRINC); oper. by April 1989	140 TPD (D) $4.15 million (D) <10%	Paper/Bottles & Cans Paper: ONP/OCC-60 TPD (D) Metal: AC/TC Glass: All Plastic: HDPE/PET
Washington		
Seattle (owned & oper. by Recycle America); oper. since 10/88	100 TPD (A) $500,000 (equip. only) <1% (A)	Paper/Bottle & Cans Paper: ONP/OCC/Mixed Metal: AC/TC Glass: All Plastic: some (pilot)
Seattle (owned and oper. by Rabanco); oper. since April 1988	80 TPD (A); 200 TPD (D) <$4 million (A)	Total Commingled Paper: ONP/OCC/Mixed Metal: AC/TC Glass: All Plastic: none

A - Actual D - Design TPH - Tons per hour
TPD - Tons per day TPY - Tons per year ONP - Old Newsprint
OCC - Old Corrugated cardboard AC - Aluminum cans TC - Tin/Bi-metal cans
Total commingled - mixed recyclables (not a totally commingled waste stream)

Note: This list of Matieral Recovery Facilities was compiled from BioCycle, Journal of Waste Recycling, May 1989.

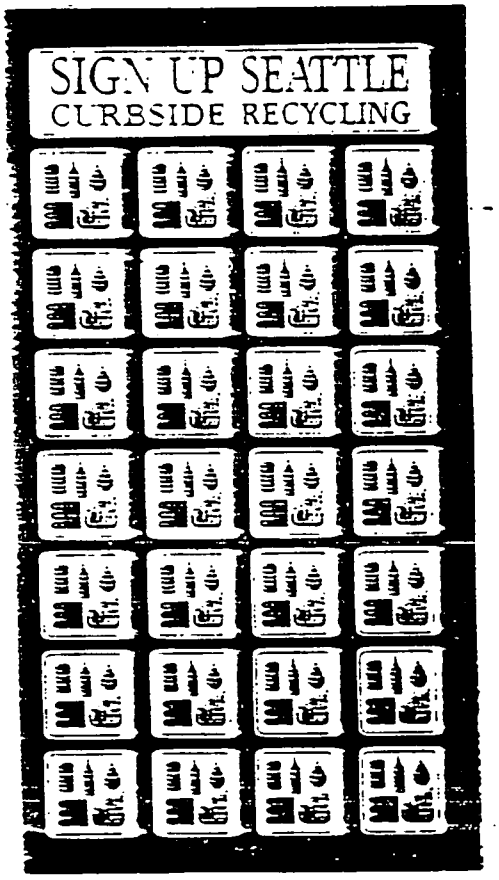
APPENDIX H


CONCORD
CURBSIDE RECYCLING


LET'S
RECYCLE
FOR AMERICA
SM


VISTA LOVES
RECYCLING


Modesto
Recycles


SIGN UP SEATTLE
CURBSIDE RECYCLING


SAN JOSE
RECYCLES


MONTEREY
RECYCLING
PROGRAM


CLEAN GREEN
Recycle Yard Waste


City of San Marcos
Recycling

APPENDIX I

TABLE 1

IMPACT OF RECOVERY RATES ON PROGRAM REVENUE AND LANDFILL AVOIDANCE

REVENUES
SALES/CURBSIDE

ITEM	UNIT	PRICE	ANNUAL REVENUE/ RECOVERY RATE/ ANNUAL TONNAGE								
NEWSPAPER	TON	$10.00	3,533	6,477	9,421	12,365	15,309	18,253	21,197	24,141	27,085	30,029
			12.00%	22.00%	32.00%	42.00%	52.00%	62.00%	72.00%	82.00%	92.00%	102.00%
			353	648	942	1,237	1,531	1,825	2,120	2,414	2,709	3,003
GLASS	TON	$120.00	4,107	12,320	20,534	28,747	36,961	45,174	53,388	61,602	69,815	78,029
			2.00%	6.00%	10.00%	14.00%	18.00%	22.00%	26.00%	30.00%	34.00%	38.00%
			34	103	171	240	308	376	445	513	582	650
ALUMINUM	TON	$1,400.00	1,843	5,528	9,214	12,899	16,585	20,271	23,956	27,642	31,327	35,013
			1.00%	3.00%	5.00%	7.00%	9.00%	11.00%	13.00%	15.00%	17.00%	19.00%
			1	4	7	9	12	14	17	20	22	25
PLASTIC	TON	$650.00	542	1,626	2,709	3,793	4,877	5,961	7,044	8,128	9,212	10,295
			1.00%	3.00%	5.00%	7.00%	9.00%	11.00%	13.00%	15.00%	17.00%	19.00%
			1	3	4	6	8	9	11	13	14	16
CARDBOARD	TON	$15.00	498	995	1,493	1,990	2,488	2,985	3,483	3,980	4,478	4,976
			2.00%	4.00%	6.00%	8.00%	10.00%	12.00%	14.00%	16.00%	18.00%	20.00%
			33	66	100	133	166	199	232	265	299	332
SUBTOTAL	ANNUAL REVENUE		10,522	26,946	43,371	59,795	76,220	92,644	109,069	125,493	141,917	158,342
	TONS		423	823	1,223	1,624	2,024	2,424	2,825	3,225	3,625	4,026
	TONS/DAY		1.62	3.15	4.69	6.22	7.76	9.29	10.82	12.36	13.89	15.42
RECYCLING RATES AS PERCENT OF RESIDENTIAL WASTE STREAM												
CITY-WIDE	% OF ALL WASTE		.23%	.45%	.67%	.89%	1.11%	1.33%	1.55%	1.76%	1.98%	2.20%
	% OF RECYCLABLES		1.55%	3.03%	4.50%	5.97%	7.44%	8.91%	10.38%	11.86%	13.33%	14.80%
TARGET AREA	% OF ALL WASTE		.96%	1.88%	2.79%	3.70%	4.61%	5.53%	6.44%	7.35%	8.26%	9.18%
	% OF RECYCLABLES		6.48%	12.61%	18.74%	24.87%	31.00%	37.14%	43.27%	49.40%	55.53%	61.66%

TABLE 2

LANDFILL AVOIDANCE REVENUE

TIPPING FEES/TON	$10.50	$4,440	$8,643	$12,846	$17,050	$21,253	$25,457	$29,660	$33,863	$38,067	$42,270
HAULING COSTS/TON	$18.00	7,611	14,817	22,023	29,228	36,434	43,640	50,846	58,052	65,257	72,463
SUBTOTAL		12,051	23,460	34,869	46,278	57,687	69,097	80,506	91,915	103,324	114,733
TOTAL		22,573	50,406	78,240	106,073	133,907	161,741	189,574	217,408	245,242	273,075

TABLE 3
PROGRAM EXPENDITURES

CAPITAL EXPENDITURES

COLLECTION

ITEM	QUANTITY	UNIT	TOTAL
TRUCKS (ROUNDED)	1	115,000	115,000
TRUCKS (FRACTION)	1.10		
ANNUAL PICKUPS	12		
WORKDAYS	251		
PASSBYS	1500		
SPARE RATIO	1.00		
BINS	25,200	60	1,512,000
NONCOMPETITIVE BIDDING		5.00%	75,600
		SUBTOTAL	1,702,500
	ANNUAL DEBT COLLECTION		1,702,500
	TERM (YEARS)	1	
	INTEREST	.00%	

SMRF/100 TONS PER DAY
(APPENDIX D/LA PLAN)

SITE ACQUISITION	3 ACRES @ 250,000		750,000
PLANT CONSTRUCTION	$40/SF-30K		1,200,000
		SUBTOTAL	1,950,000
	ANNUAL DEBT FACILITY		198,512
	TERM (YEARS)	20	
	INTEREST	8.00%	
PLANT EQUIPMENT			
PAPER			422,300
CONTAINER			
RECIEVING			149,500
FERROUS			114,400
GLASS			80,050
ALUMINUM			45,390
PLASTIC			41,600
MISC			130,980
ROLLING STOCK			60,000
		SUBTOTAL	1,014,920
	ANNUAL DEBT EQUIPMENT		201,635
	TERM (YEARS)	7	
	INTEREST	9.00%	
	TOTAL CAPITAL		4,667,420
	TOTAL FINANCING		2,102,347

TABLE 3
PROGRAM EXPENDITURES
(CONTINUED)

ANNUAL EXPENDITURES		
OPERATIONS/COLLECTIONS		
EMPLOYEE SERVICES		
FTES (1.2* #TRUCKS)		1.00
@ 38,900 EA		38,900
SERVICES AND SUPPLIES		
OPERATIONS/MAINT		20,000
CONSULTING		0
INDIRECT CHARGES @ 25%		9,725
EQUIPMENT RENTAL		49,296
DEBT SERVICE		1,702,600
CAPITAL EQUIPMENT		0
SUBTOTAL		1,820,521
OPERATIONS/RECOVERY		
EMPLOYEE SERVICES		471,494
MRF SUPERVISOR	44,054	
EQUIPMENT OPERATOR	68,609	
MAINT WORKER	223,314	
GEN HELPER	135,517	
SERVICES AND SUPPLIES		
OPERATIONS/MAINT		150,000
TRANSPORTATION TO MARKET		100,000
CONSULTING		0
INDIRECT CHARGES @ 25%		117,874
EQUIPMENT RENTAL		10,000
DEBT SERVICE		400,247
CAPITAL EQUIPMENT		0
SUBTOTAL		1,249,615
SUBTOTAL CITY PARTIC	10.00%	124,961
PUBLIC INFORMATION		
EMPLOYEE SERVICES		81,695
PIO	43,426	
TC I (1.5)	38,268	
SERVICES AND SUPPLIE		
ADVERTISING		75,000
INDIRECT CHARGES @ 25%		20,424
SUBTOTAL		177,118
TOTAL PROGRAM COSTS		2,122,501
CONTINGINCY		80,000
GRAND TOTAL		2,202,501

1988

TABLE 4

PROGRAM COSTS AND RATE INCREASE REQUIREMENTS

	PROJECTED	NET PROGRAM EXPENDITURES UNDER VARIOUS PARTICIPATION RATES AND MARKET CONDITIONS									
TOTAL PROGRAM COSTS	2,202,601	2,202,601	2,202,601	2,202,601	2,202,601	2,202,601	2,202,601	2,202,601	2,202,601	2,202,601	2,202,601
(PARTICIPATION/RECOVERY RATE)		6.48%	12.61%	18.74%	24.87%	31.00%	37.14%	43.27%	49.40%	55.53%	61.66%
PROJECTED REVENUES	76,220	10,522	26,946	43,371	59,795	76,220	92,644	109,069	125,493	141,917	158,342
PROGRAM NET EXPENDITURES	2,126,381	2,192,079	2,175,654	2,159,230	2,142,806	2,126,381	2,109,957	2,093,532	2,077,108	2,060,683	2,044,259
NET EXPENDITURES WITH 100% INCREASE IN MARKET		2,181,557	2,148,708	2,115,859	2,083,010	2,050,161	2,017,313	1,984,464	1,951,615	1,918,766	1,885,917
NET EXPENDITURES WITH 50% DECREASE IN MARKET		2,197,340	2,189,128	2,180,915	2,172,703	2,164,491	2,156,279	2,148,066	2,139,854	2,131,642	2,123,430
COST PER TON											
COLLECTIONS	899	4,306	2,212	1,488	1,121	899	751	644	564	502	452
RECOVERY	62	296	152	102	77	62	52	44	39	34	31
EDUCATION	88	419	215	145	109	88	73	63	55	49	44
CONTINGENCY	40	189	97	65	49	40	33	28	25	22	20
REVENUE OFFSET	(38)	(25)	(33)	(35)	(37)	(38)	(38)	(39)	(39)	(39)	(39)
TOTAL	1,051	5,184	2,643	1,765	1,320	1,051	870	741	644	568	508

TABLE 4
(CONTINUED)

FEE INCREASES	PROJECTED	RATE INCREASES UNDER VARIOUS PARTICIPATION RATES AND MARKET CONDITIONS									
RECOVERY RATES		6.48%	12.61%	18.74%	24.87%	31.00%	37.14%	43.27%	49.40%	55.53%	61.66%
ALL RESIDENTIAL CUSTOMERS											
CURRENT FEES	10,419,600	10,419,600	10,419,600	10,419,600	10,419,600	10,419,600	10,419,600	10,419,600	10,419,600	10,419,600	10,419,600
FEE INCREASE REQUIRED	20.41%	21.04%	20.88%	20.72%	20.57%	20.41%	20.25%	20.09%	19.93%	19.78%	19.62%
RATE INCREASE WITH 100% INCREASE IN MARKET		20.94%	20.62%	20.31%	19.99%	19.68%	19.36%	19.05%	18.73%	18.41%	18.10%
RATE INCREASE WITH 50% DECREASE IN MARKET		21.09%	21.01%	20.93%	20.85%	20.77%	20.69%	20.62%	20.54%	20.46%	20.38%
	EXISTING RATE	PROJECTED	CHANGE								
RESIDENTIAL 90 GALLON	9.14	11.01	1.87	20.41%							
TARGET AREA CUSTOMERS ONLY											
CURRENT FEES	2,632,320	2,632,320	2,632,320	2,632,320	2,632,320	2,632,320	2,632,320	2,632,320	2,632,320	2,632,320	2,632,320
FEE INCREASE REQUIRED	80.78%	83.28%	82.65%	82.03%	81.40%	80.78%	80.16%	79.53%	78.91%	78.28%	77.66%
RATE INCREASE WITH 100% INCREASE IN MARKET		82.88%	81.63%	80.38%	79.13%	77.88%	76.64%	75.39%	74.14%	72.89%	71.64%
RATE INCREASE WITH 50% DECREASE IN MARKET		83.48%	83.16%	82.85%	82.54%	82.23%	81.92%	81.60%	81.29%	80.98%	80.67%
	EXISTING RATE	PROJECTED	CHANGE								
RESIDENTIAL 90 GALLON	9.14	16.52	7.38	80.78%							
ALL RESIDENTIAL AND COMMERCIAL CUSTOMERS											
CURRENT FEES	19,006,000	19,006,000	19,006,000	19,006,000	19,006,000	19,006,000	19,006,000	19,006,000	19,006,000	19,006,000	19,006,000
FEE INCREASE REQUIRED	11.19%	11.53%	11.45%	11.36%	11.27%	11.19%	11.10%	11.02%	10.93%	10.84%	10.76%
RATE INCREASE WITH 100% INCREASE IN MARKET		11.48%	11.31%	11.13%	10.96%	10.79%	10.61%	10.44%	10.27%	10.10%	9.92%
RATE INCREASE WITH 50% DECREASE IN MARKET		11.56%	11.52%	11.47%	11.43%	11.39%	11.35%	11.30%	11.26%	11.22%	11.17%
	EXISTING RATE	PROJECTED	CHANGE								
RESIDENTIAL 90 GALLON	9.14	10.16	1.02	11.19%							

APPENDIX J

Other Curbside Recycling Programs

A Summary

San Jose: Starting in May 1985, San Jose contracted with a private company to test a pilot, residential, curbside recycling program. That program has since been expanded city-wide to serve 180,000 residences as of November 1987. Each residence is provided a set of stackable bins (3) for set-out on the same day as regular refuse collection. Recyclables are collected weekly. The program recovers newspaper, cans, bottles and plastic soft drink bottles. Participation is voluntary with an average of 420 lbs. collected per residence per year. No incentives are offered as the City of San Jose offers unlimited garbage collection at a flat fee. The program is contracted to Recycling America, a subsidiary of Waste Management, Inc. This curbside program currently diverts 4.9% of the total waste stream for San Jose.

Seattle: The City of Seattle began its curbside recycling program in February of 1988. The program serves 153,000 residences. In the north half of the City, residents receive three stackable containers for use in a weekly collection program. On the south side, residents are provided a 60 or 90 gallon containers to place commingled recyclables in. Both programs collect newspaper, mixed paper, glass, and cans. Both programs have a Material Recovery Facility to further process the material.

The source separation program on the north side of the City has a 70% monthly participation rate while the south side has a 45% participation rate. However, there are several variables which could account for this difference. In addition to a different frequency of collection, it has been suggested that the south side may be taking more recyclables in for sale. Seattle residents are further motivated to recycle by a variable can rate which rewards residents who reduce the size of the refuse can they set out. This variable can rate is reinforced by extremely high tipping fees and an environmental awareness reified by Seattle's difficulty in siting a new landfill.

Mississauga, Ontario, Canada: The City of Mississauga provides all residences (both multiple family residences and single family residences) with a single two-foot by two-foot box. Recyclables are commingled in the box and hand sorted by drivers at the curb. Collection is weekly. Materials are lightly processed at an intermediate facility. Participation is reported to be 75 to 85% monthly with a 15% reduction in the waste stream.

Toronto, Ontario, Canada: The City of Toronto provides curbside recycling collection services to 120,000 single family residences.

Each household receives one blue box to store commingled glass, metal and PET. Newspaper and corrugated cardboard are separately collected. One packer collects the commingled recyclables and another rear loader collects the corrugated cardboard and newsprint.

Minneapolis: Minneapolis provides curbside recycling services to 124,000 single family residences. Monthly participation is reported to be between 25 to 35% with a 6% diversion of the waste stream. Residents are asked to separate cans, newspaper, cardboard, mixed paper and different colors of glass. Residents have recently been provided containers. One group was provided a single container with residents asked to separate their recyclables in paper bags within this one large container. The other group was provided two stackable containers. The areas provided containers report a 50% increase in participation level and a 30% increase in the volume of material collected.

Marin County: Residents who wish to participate in Marin's curbside recycling program are provided two 5-6 gallon buckets. One bucket is for metal containers and the other is for plastic and glass containers. Newspapers are bundled or placed in bags next to the buckets at curbside. These materials then go to an intermediate processing facility. Prior to providing residents with containers, the monthly participation was at 20%. This participation rate rose to 60% after containers were provided. This program is subsidized by a $1 per month charge to all residences.

Next to this facility is a MRF/Transfer Station for handling mixed waste from both commercial and residential routes. MRRC was constructed at a cost of $9.5 million. It accepts mixed waste from the commercial and the public sector.

San Francisco: Beginning in April 1989, San Francisco entered Phase one of its plan to implement a citywide curbside recycling program. Plans call for all residents (including apartment dwellers) to be provided a single 14 gallon container with fiber such as newsprint being bundled separately. Newsprint is then placed at the curb next to the 14 gallon bin on the same day as weekly refuse collection.

Berkeley: The City of Berkeley provides bins for the source separation of materials by its residents. This includes apartment residents. With a participation rate of 20-25%, the City of Berkeley is diverting 15% of its total waste stream including recycling at its buy-back centers and transfer station. Berkeley also sorts out wine bottles for a washing program and color sorts its glass from the curbside collection with processing at the "backside".

Concord: The City of Concord provides curbside collection for its

residents on a weekly basis. About 90% of the City is containerized. Residents who have containers are provided two boxes. One box is for commingled recyclables (i.e., aluminum and glass). The other container is for newsprint.

Davis: The City of Davis contracts the operation of a program which serves 10,800 residences. Residents are not provided containers but they are asked to separate, glass, aluminum, cardboard and newsprint at the curb for weekly collection. Glass is sold mixed and materials receive little processing before going to market. This program diverts 8% from the total waste stream.

San Diego: The City of San Diego currently operates a curbside program serving 11,200 residences with plans for expansion. Residents are provided 3 stackable Rehrig containers for separating aluminum and tin, glass and newsprint. Collection is once each week and glass is color sorted by hand at a processing facility operated by Waste Management.

Brampton, Ontario, Canada: 45,000 homes receive weekly curbside collection. Residents are provided one plastic box to place mixed recyclables in. Participation is rated at 50-60%/mo. for those residents with containers and 30-40%/mo. for residents without containers. About 3% of the residential waste is diverted from the landfill.

Camden, New Jersey: The curbside program in Camden County provides service to 25,000 residences. This program diverts 7% of the residential waste from the landfill. Residents are not provided containers for this source separation program. They are provided decals to place on their own containers to use at curbside. Monthly participation in this program is 60-70%.

Kieve, West Germany: This curbside recycling program is typically described as some modification of the "green bin" system. Collection is every other week including all plastics, newsprint, corrugated cardboard, glass and metal. The collection vehicle is an automated packer with a high degree of sorting at a processing facility.

San Mateo: The City of San Mateo contracts out the delivery of a curbside recycling program to BFI. This program serves single family residences. According to representatives of BFI, San Mateo averages a weekly set-out rate of 41% diverting about 5% of the total waste stream. Under BFI's current agreement with the City of Mateo, BFI is paid $80/mo per residence plus the revenue from the recyclables. This program involves the use of 3 stackable containers. It is a source separate program unlike BFI's preferred method of collection involving a single container for commingled materials. The stackable containers used in San Mateo's program are manufactured from 25% recycled plastic.

BFI's trucks have a 36 cubic yard capacity with mechanized top loading. Drivers load recyclables into a bin at waist height to increase collection efficiency and to reduce injuries. The trucks are self-dumping.

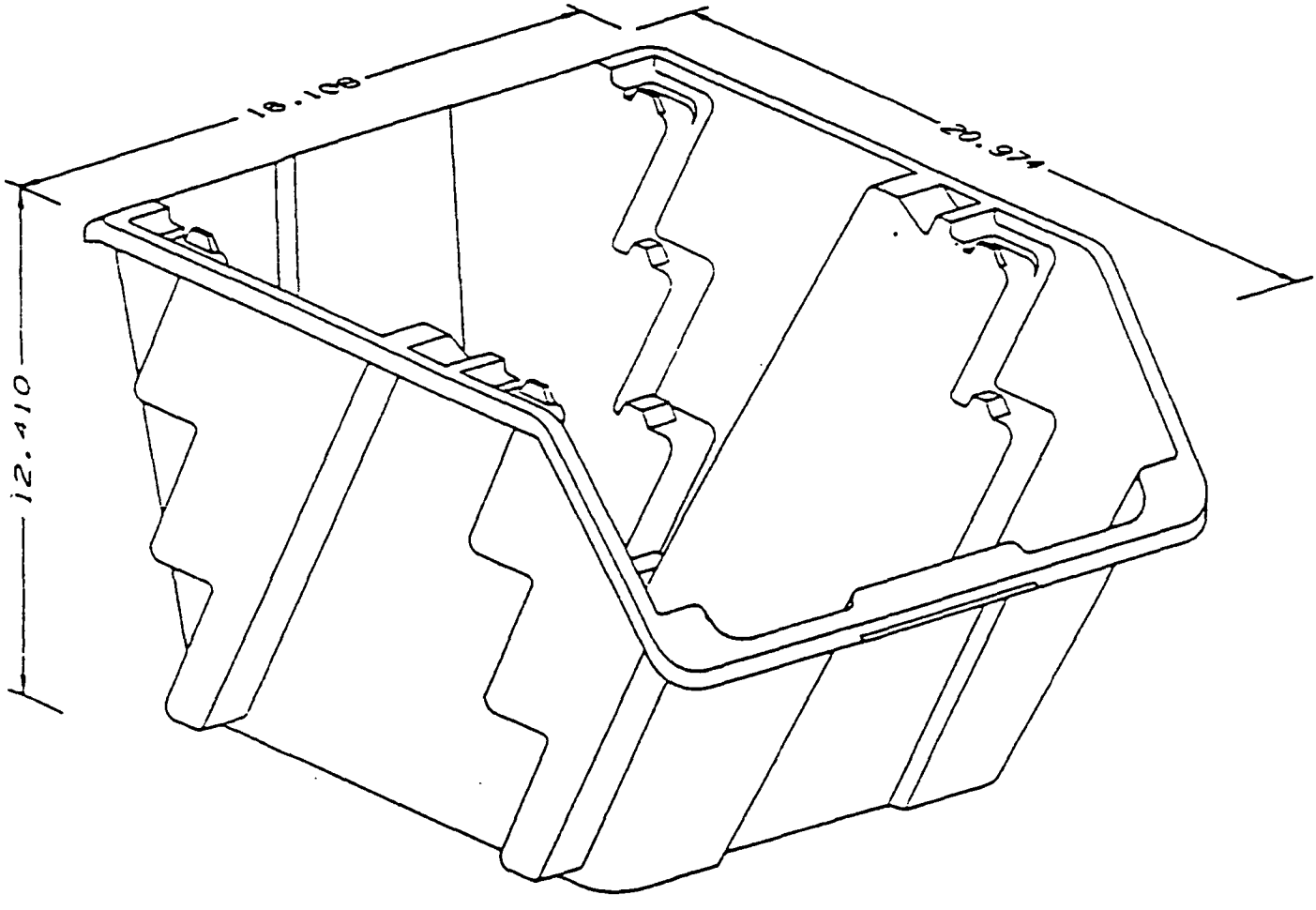
Recyclables are processed at a MRF with a 72/ton/day capacity. It has picking lines for color sorting of glass. PET, glass, cans, aluminum and newsprint are collected as a part of this program.

Phoenix, Arizona: The City of Phoenix operates a pilot program serving 4,000 residences. One (1) fully automated side-loader packer picks up 1000 residences in a day. Each residence is provided a blue 90 gallon container. Regular garbage service uses a green 90 gallon container. Materials are processed at a recycling center operated by St. Vincent dePaul, a charitable organization. The material is dumped on a concrete pad and pushed onto four conveyors where all materials are hand sorted. Materials collected in this operation include newspaper, cardboard, plastic, metal/aluminum and glass.

APPENDIX K

Curbside
Recycling
Containers
CANS
NEWSPAPER
Rehrig Pacific Company

Rehrig Pacific Company



NESTABLE/STACKABLE RECYCLE BIN

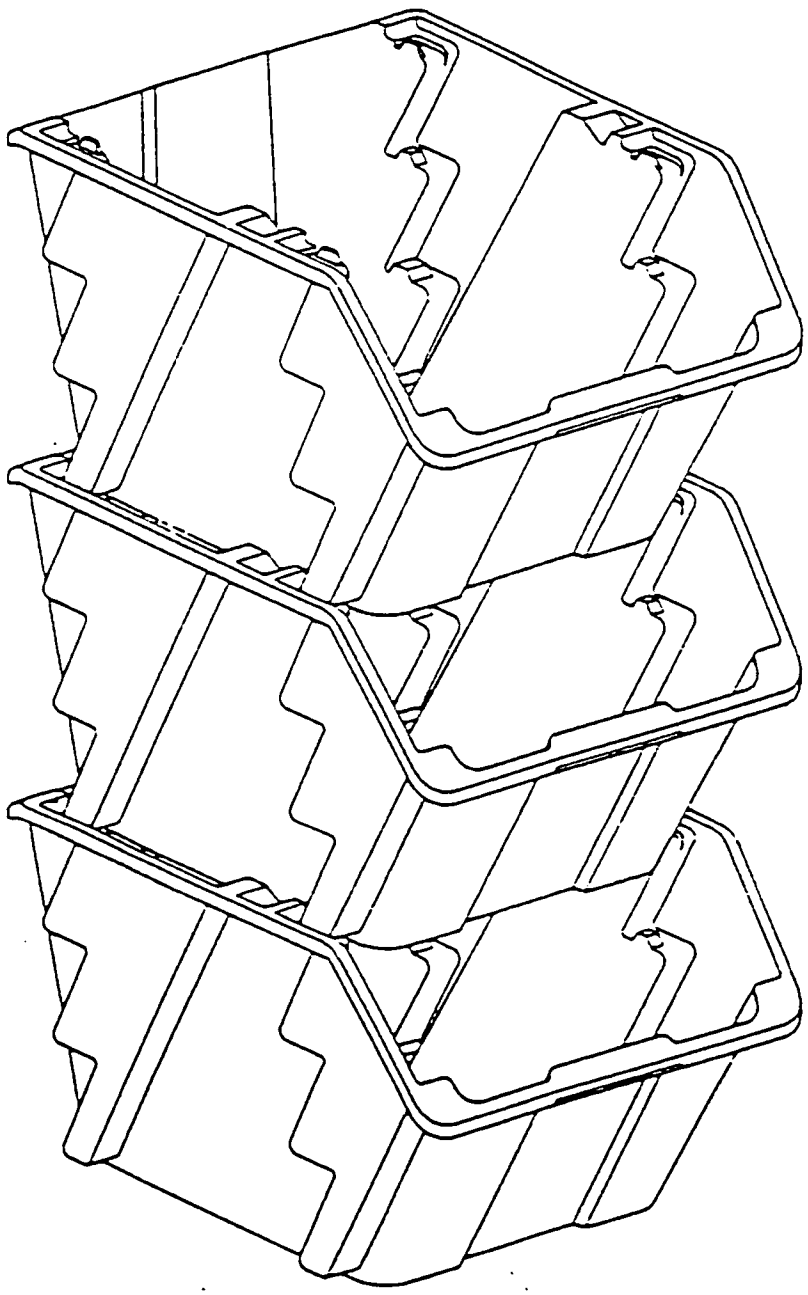
Capacity: 11.2 gallons

4010 EAST 26TH ST. • LOS ANGELES, CALIF. 90023/213-262-5145

QUALITY PRODUCTS FOR INDUSTRY SINCE 1913

200

Rehrig Pacific Company



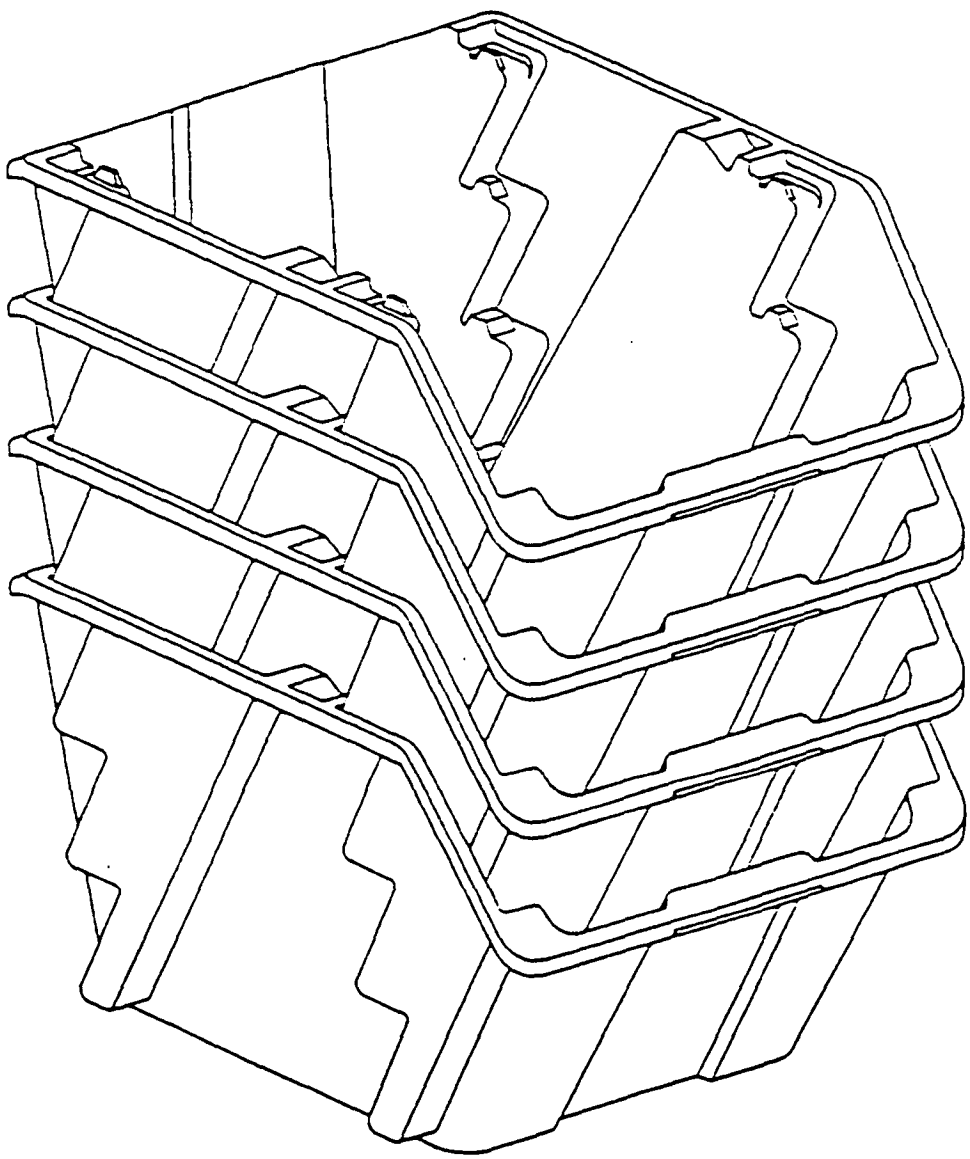
STACKED BINS

4010 EAST 26TH ST. • LOS ANGELES, CALIF. 90023/213 • 262-5145

QUALITY PRODUCTS FOR INDUSTRY SINCE 1913

20

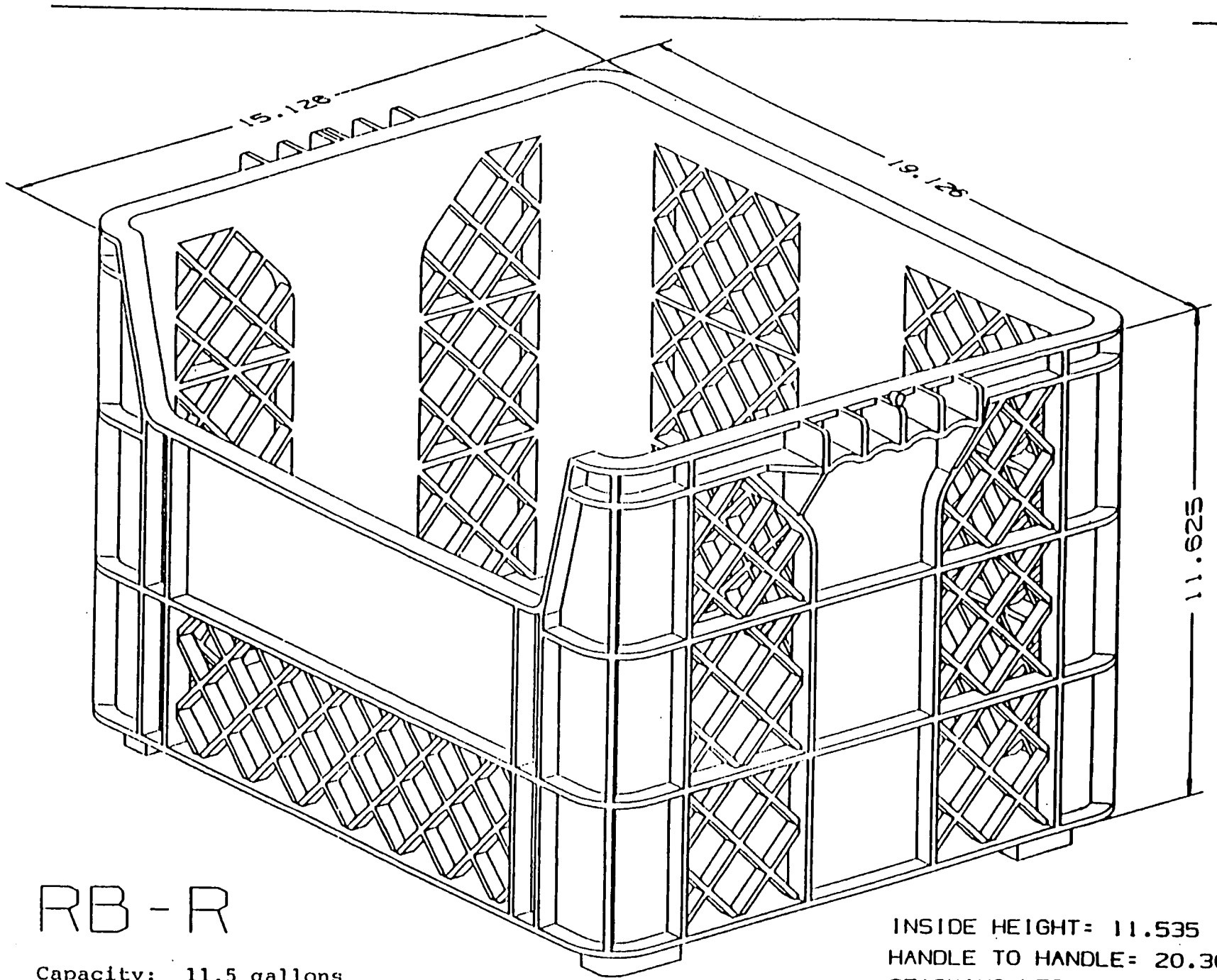
Rehrig Pacific Company



NESTED BINS

4010 EAST 26TH ST. • LOS ANGELES, CALIF. 90023/213-262-5145

QUALITY PRODUCTS FOR INDUSTRY SINCE 1913

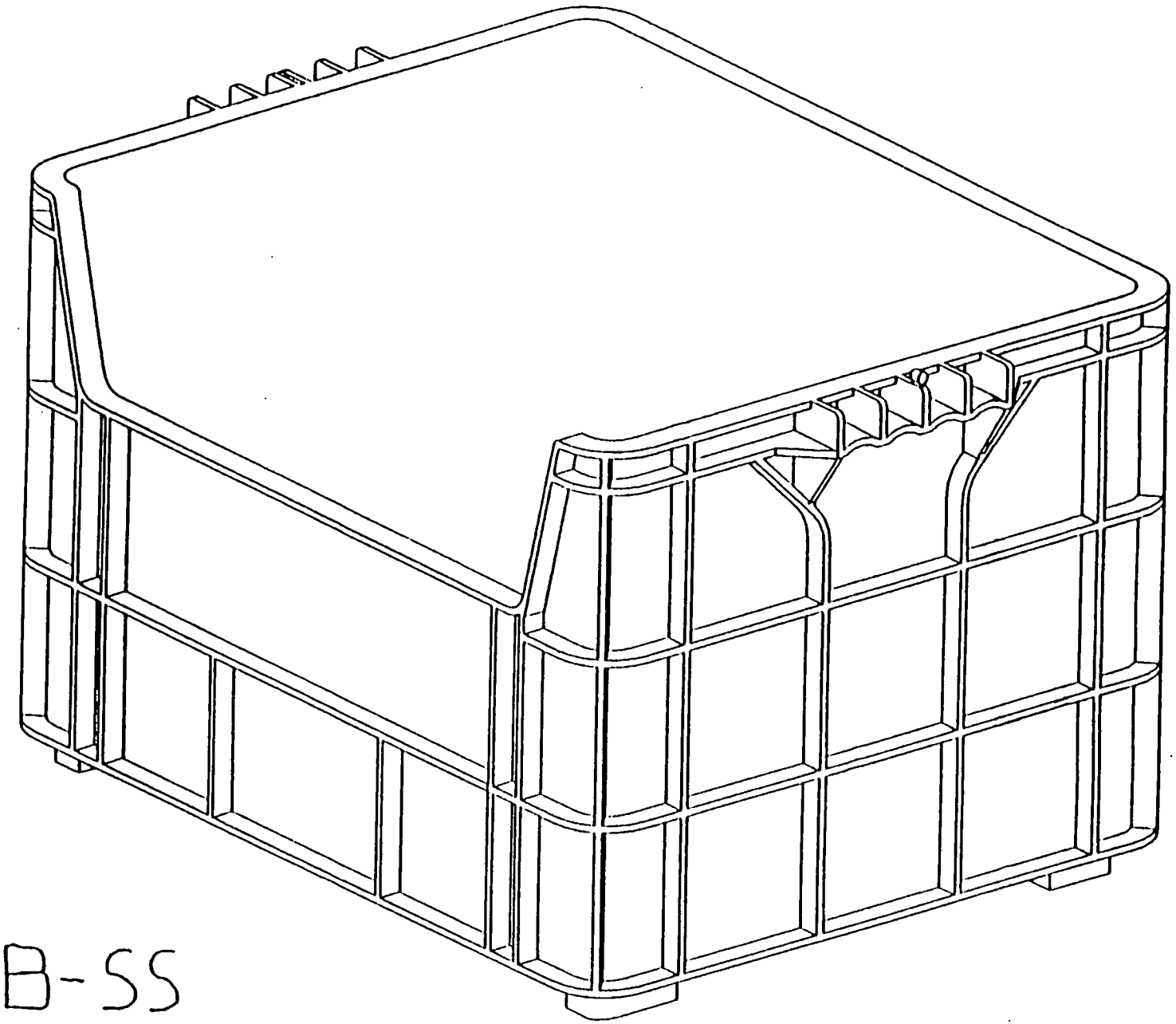


RB-R

Capacity: 11.5 gallons

INSIDE HEIGHT= 11.535
HANDLE TO HANDLE= 20.306
STACKING LEGS= .750

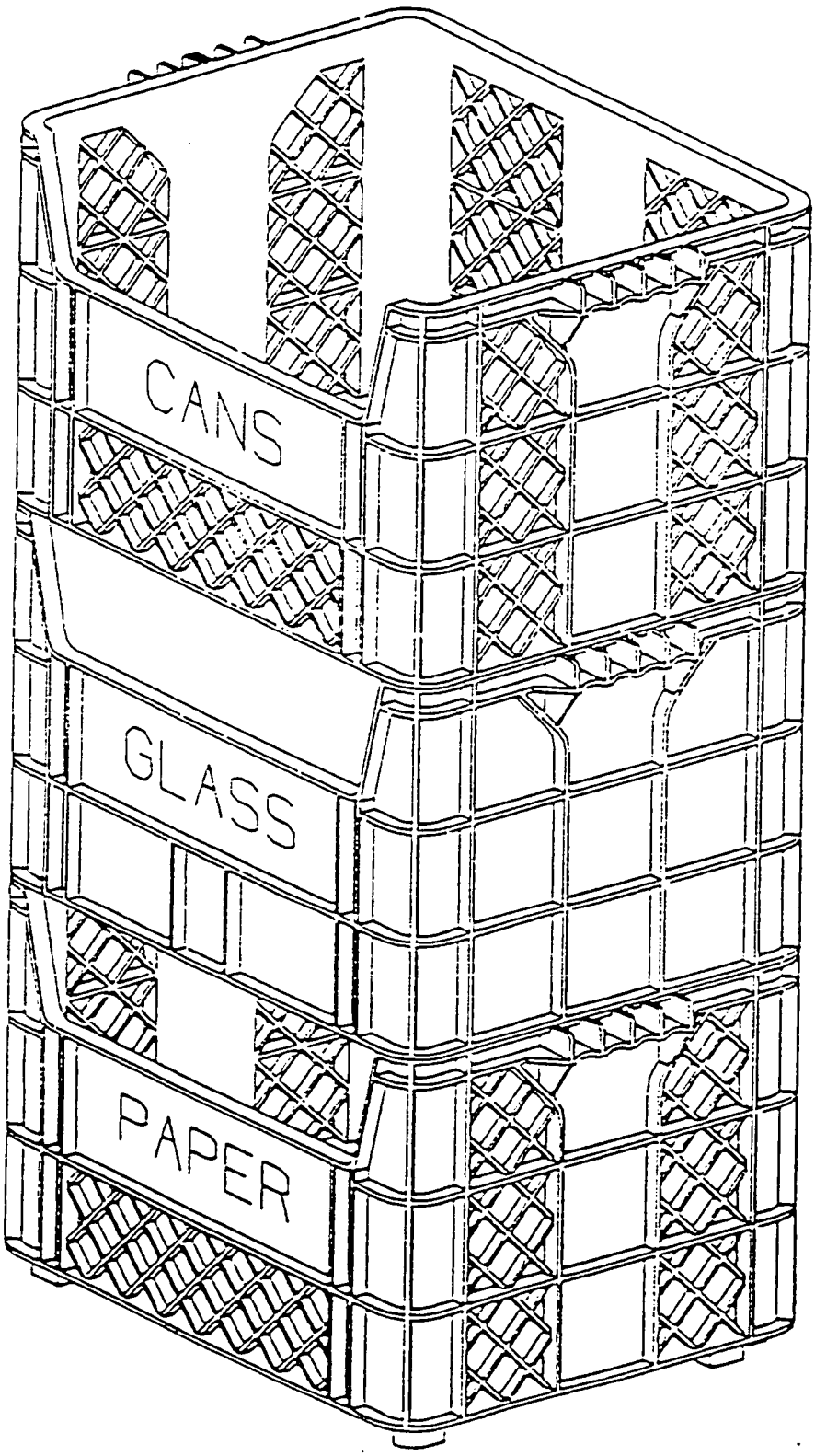
CURBSIDE CONTAINER FOR PAPER OR CANS



RB-SS

CURBSIDE CONTAINER FOR GLASS

STACKING CONFIGURATION FOR CURBSIDE CONTAINERS

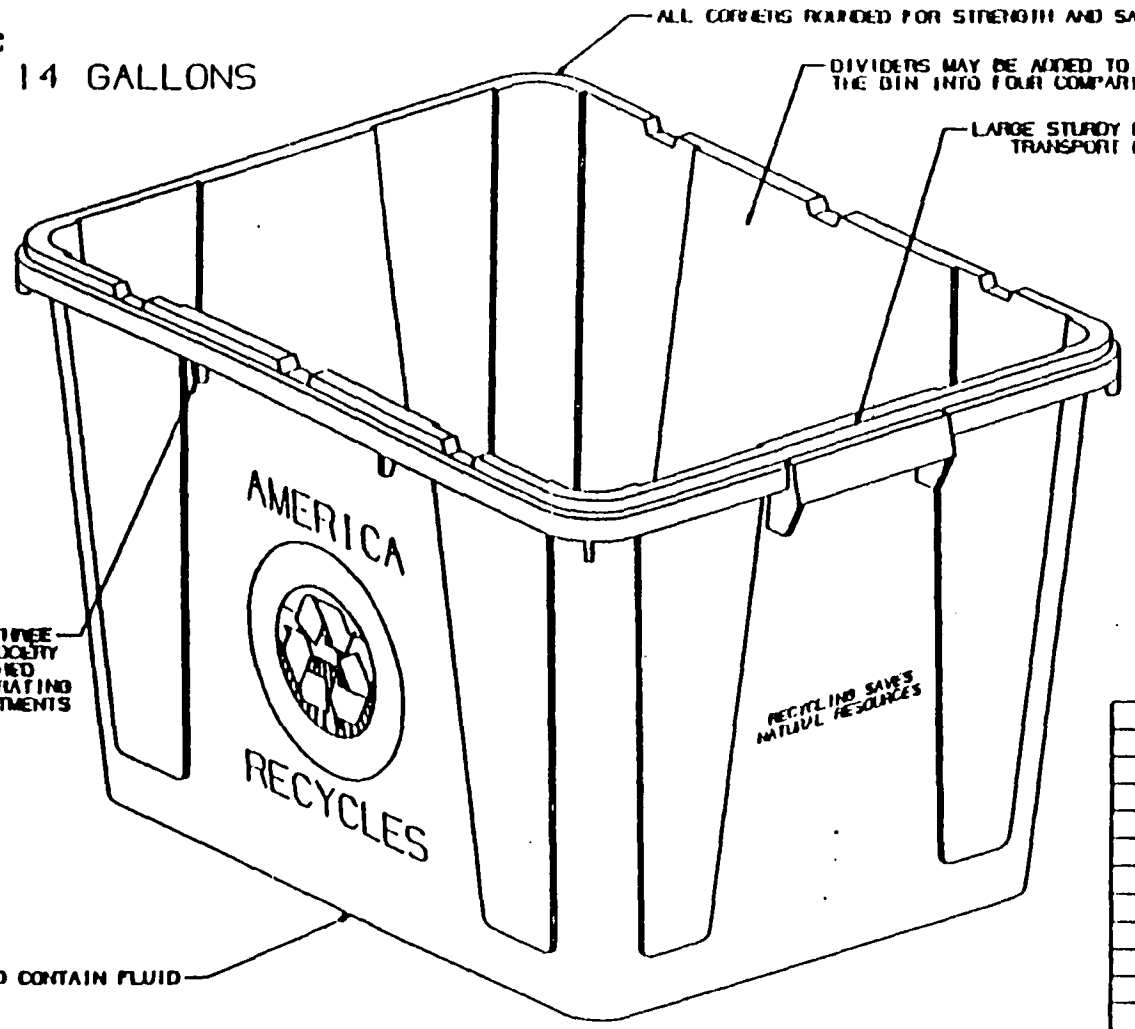


PRINTED ON RECYCLED PAPER

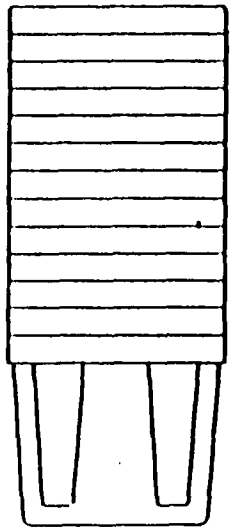
296

OUTSIDE DIMENSIONS:
21.750 X 15.961 X 13.000

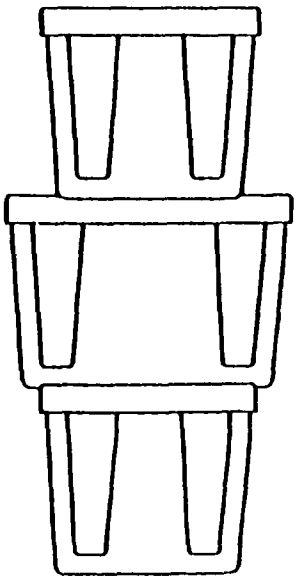
CAPACITY:
APPROX. 14 GALLONS



NESTABLE/STACKABLE SINGLE/MULTI RECYCLE BIN SYSTEM



NESTED STACK
6.5 TO 1 RATIO



CROSS-STACKED BINS
FORM MULTI SYSTEM

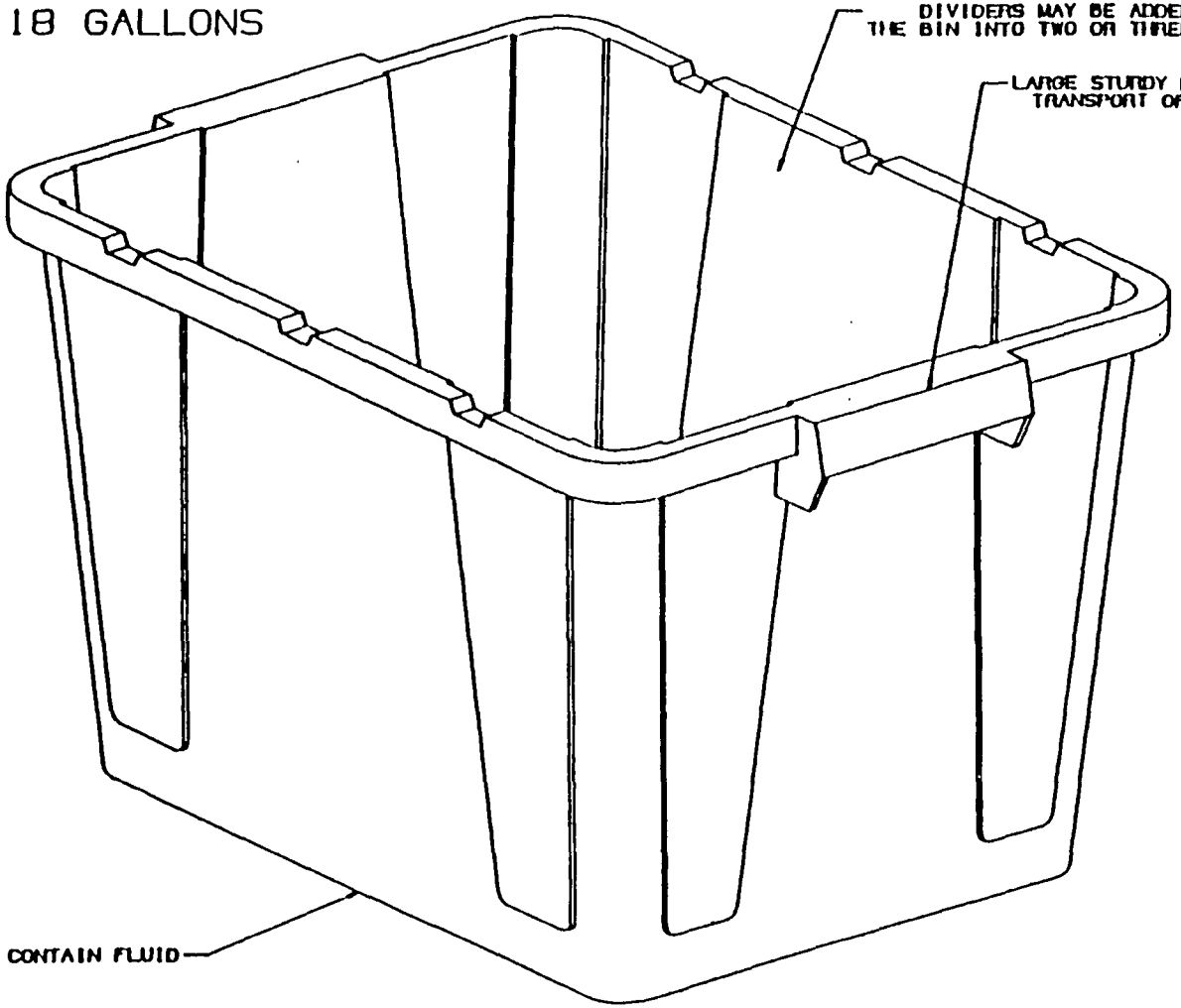
PRINTED ON RECYCLED PAPER

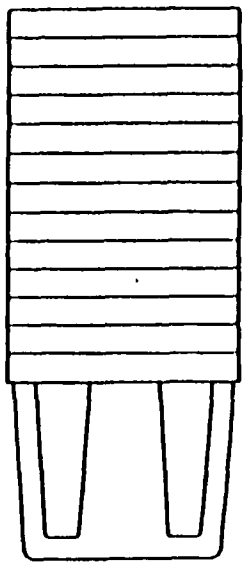
K-9

202

OUTSIDE DIMENSIONS:
25.250 X 17.600 X 13.500

CAPACITY:
APPROX. 18 GALLONS

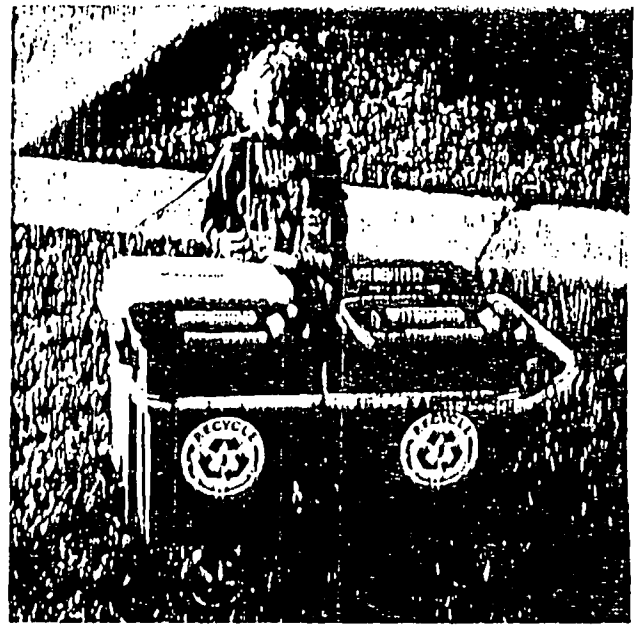




NESTED STACK
8 TO 1 RATIO

NESTABLE/STACKABLE SINGLE/MULTI RECYCLE B ' SYSTEM

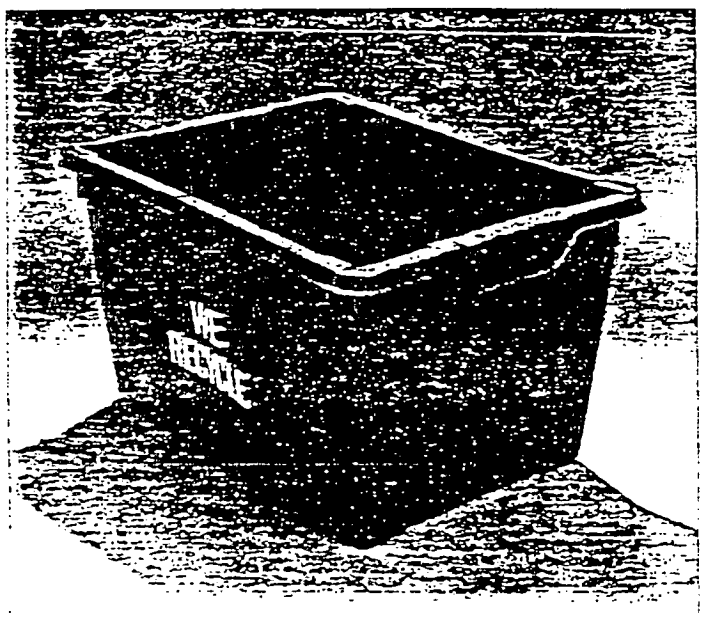
Recycling idea—from our cover!

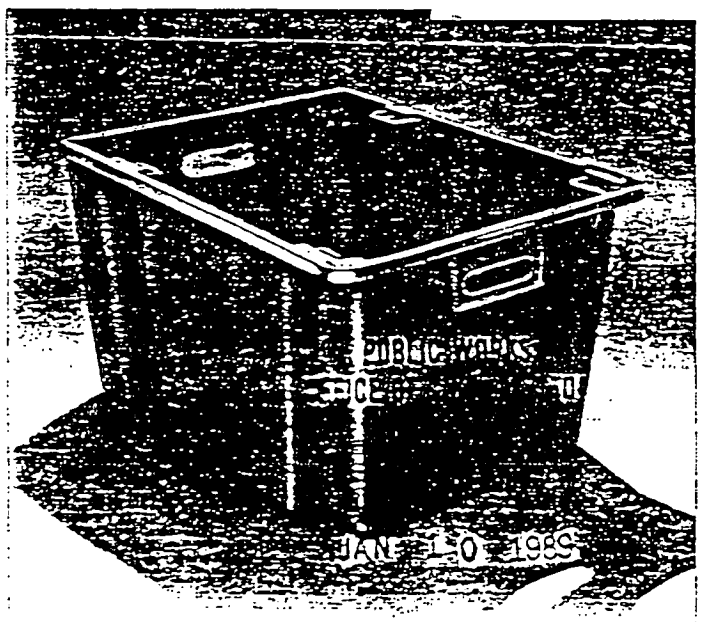


Officials of the newly formed Advanced Recycling Systems (Waterloo, Iowa) say they began brainstorming that led to their Residential Recycling Kit (above) when they saw the July, 1987, Waste Age cover—of a little girl with various recyclables in different containers. The kit, consisting of small plastic containers on a wheeled frame, is said to make curbside recycling easier.

OURSIDER

Recycling Containers





Buckhorn Canada's leading manufacturer of injection-molded industrial and commercial containers, is pleased to announce another container especially designed for the recycling industry.

Our commitment to the recycling industry is so strong that we are one of the few suppliers to have more than one type of container.

Every Buckhorn Oursider comes with its own warranty, even though you'll never need it. Buckhorn Oursiders are Built to Last!™

Other facts about Buckhorn

- Containers built to last
  Of all the injection molded Oursider containers sold by Buckhorn in 1983, 1984, 1985, 1986 and 1987, none were returned under a warranty claim. This is proof that Buckhorn containers are built to stand up to tough, everyday use, all types of weather, and give unlimited service life.
- First with a recate program
- First with a leasing program

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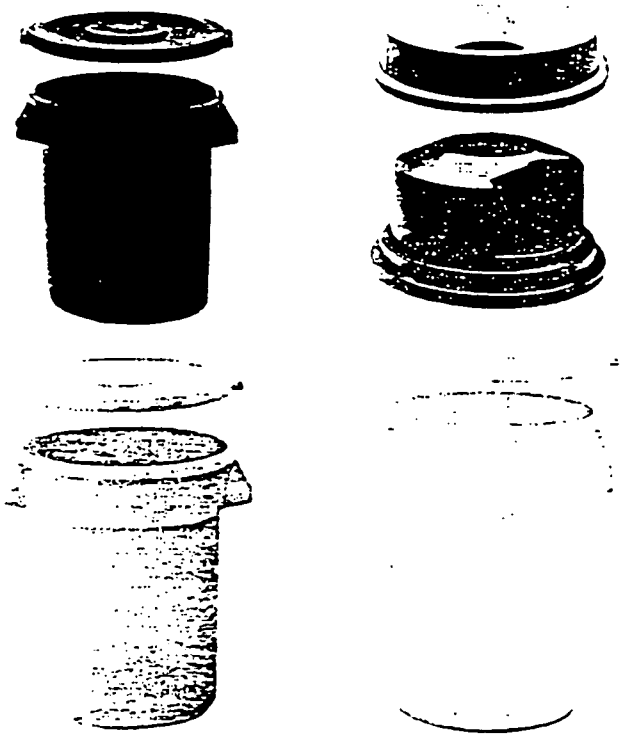
"We've been helping to conserve trees for 30 years".

55 WL TECHNE CENTER DRIVE • MILFORD, OHIO 45150 Tel (800) 543-4454 (513) 831-4402 Fax (513) 831-5471

There's only one container tough enough to be called the Brute™ container

No.	Description	Color	Pack
10 Gal. Brute™ Container & Lid			
†*2610	**Container,** 10 gal. 15½" dia. x 17¼" h.	Gray White	6
†2609	**Flat Lid** 16" dia. x 1" h.	Dk. Gray White	6
	Tuffmade Polyliner™ Bag No. 3003		500
†NSF-Listed: Std. 2; Std. 21			

No.	Description	Color	Pack
20 Gal. Brute™ Container & Lid			
†*2620	**Container,** 20 gal. 19¼" dia. x 22¾" h.	Gray, White, Yellow	6
†2619	**Flat Lid** 19⅝" dia. x 1¼" h.	Gray, White, Yellow	6
	Tuffmade Polyliner™ Bag No. 3006		300
U.S. Pat. No. D-260,229 (2620)			
†NSF-Listed: Std. 2; Std. 21			



No.	Description	Color	Pack
32 Gal. Brute™ Containers, Tops & Lid			
†*2632	**Container,** 32 gal. 22" dia. x 27¼" h.	Gray, Red, White, Yellow	6
	Tuffmade Polyliner™ Bag No. 3007		300
†2634	**Mobile Container,** 32 gal. 22" dia. x 32¼" h.	Gray	6
	Tuffmade Polyliner™ Bag No. 3007		300
†2631	**Flat Lid** 22¼" dia. x 1¾" h.	Gray, White, Yellow, Red	6
2637	**Dome Top, Duramold®** 22⅞" dia. x 12¼" h.	Gray, Orange, Red	1
3543	**Funnel Top** 22½" dia. x 5" h.	Gray	4
U.S. Pat. No. D-260,229 (2632, 2634)			
U.S. Pat. No. D-280,857 (2637)			
†NSF-Listed: Std. 2; Std. 21 (2632, 2631)			

No.	Description	Color	Pack
44 Gal. Brute™ Containers, Tops & Lids			
†*2643	**Container,** 44 gal. 24" dia. x 31½" h.	Gray, White, Yellow, Red	4
	Tuffmade Polyliner™ Bag No. 3008		200
†2641	**Mobile Container,** 44 gal. 24" dia. x 36½" h.	Gray	4
	Tuffmade Polyliner™ Bag No. 3008		200
†2645	**Flat Lid** 24½" dia. x 1½" h.	Gray, White, Yellow, Red	4
2647	**Dome Top, Duramold®** 24¾" dia. x 12⅞" h. Fits 55 gal. steel drum	Gray, Orange, Red	1
U.S. Pat. No. D-260,229 (2643, 2641)			
U.S. Pat. No. D-280,857 (2647)			
†NSF-Listed: Std. 2; Std. 21 (2643, 2641)			
*Custom imprinting available. Contact your Rubbermaid representative for details.			

No.	Description	Color	Pack
55 Gal. Brute™ Container, Top & Lid			
†*2655	**Container,** 55 gal. 26½" dia. x 33" h.	Gray	3
†2654	**Flat Lid** 26½" dia. x 2" h.	Gray	3
2657	**Dome Top Duramold®** 27¼" dia. x 14½" h.	Gray, Orange, Red	1
	Tuffmade Polyliner™ Bag No. 3011		100
U.S. Pat. No. D-260,229 (2655)			
U.S. Pat. No. D-280,857 (2657)			
†NSF-Listed: Std. 2; Std. 21 (2655, 2654)			

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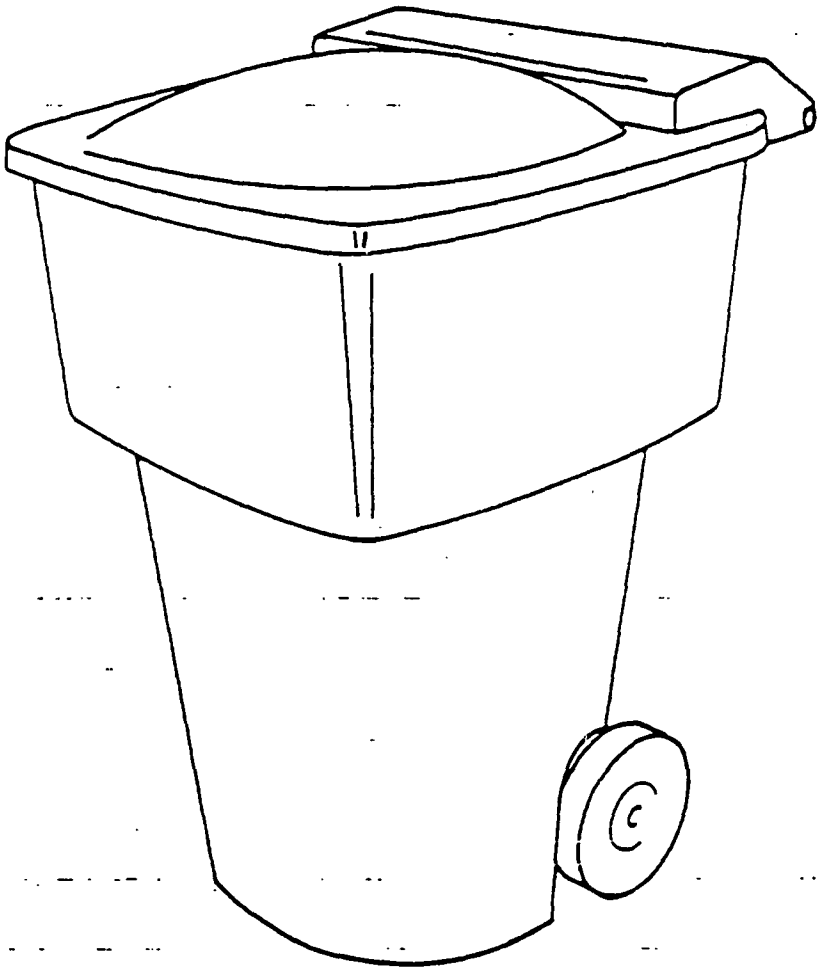
MASTER CART INTERNATIONAL INCORPORATED

PRODUCTS WITH TECHNICAL EXCELLENCE
DESIGNED BY SOLID WASTE PROFESSIONALS
PRODUCED BY EXPERTS IN PLASTIC TECHNOLOGY

MASTER CART™



MASTER CART is a technically oriented company that is staffed with professionals from the Solid Waste Industry. The company is totally dedicated to the refuse industry; and its expertise in plastic technology is coupled with sound field testing for superior products.

MASTER CART is computer designed and engineered by refuse department professionals from several major municipalities and private haulers.

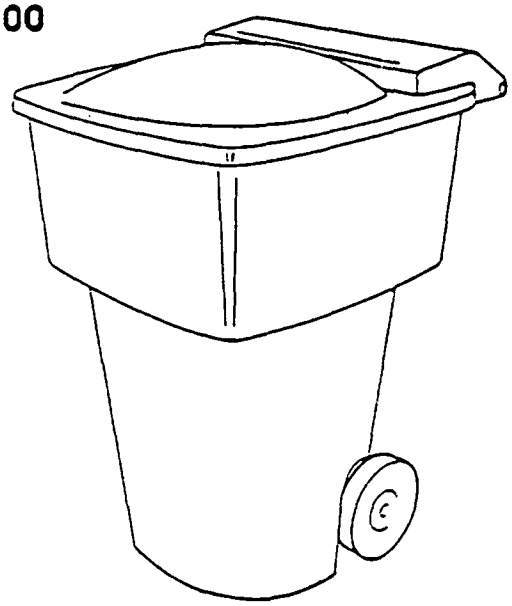
The technical excellence of the rotational molding process produces superior carts with the greatest strength possible to meet the exacting demands of residential refuse systems.

The longest field service life is assured by the 15 year proven record in actual household usage of Cross-linked Polyethylene. This performance is unmatched by any other plastic material.

MASTER CART™
Automated Refuse Carts

MASTER CART is engineered for toughness by experts in the Solid Waste Industry. MASTER CART embodies the most superior design features that makes this the state of the art container for solid waste collection.

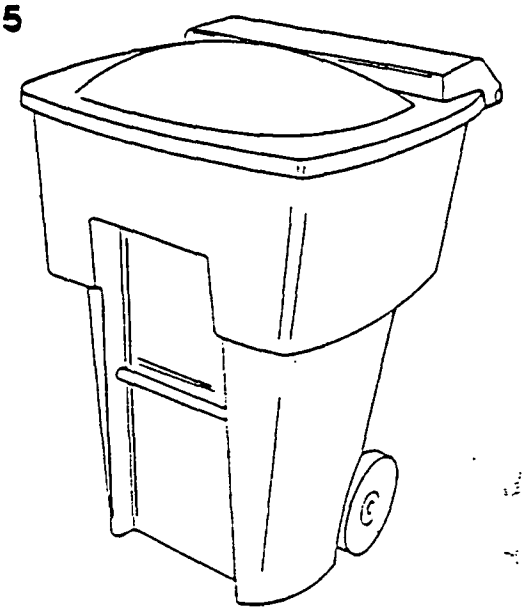
MC-100



100 Gallon Automated

Engineering balanced for easy handling
APPROX. WEIGHT: 40 lbs.
DIMENSIONS: Height 47," Width 31," Depth 35."

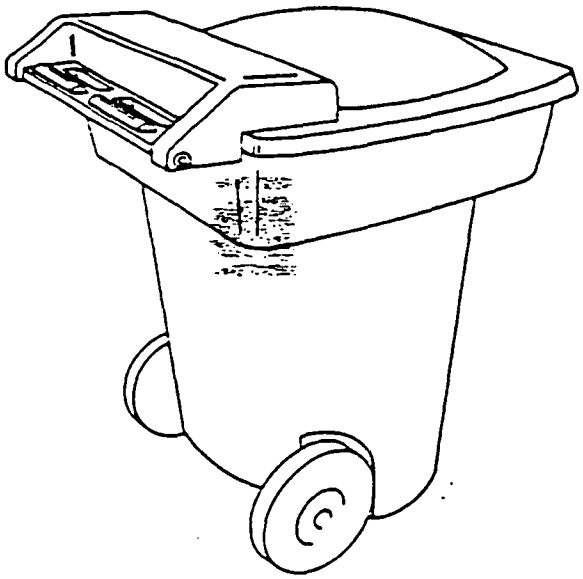
MC-95



95 Gallon Combo Automated

Works with existing semi-automatic lifts.
Converts to full automation.
APPROX. WEIGHT: 40 lbs.
DIMENSIONS: Height 47," Width 31," Depth 35."

MC-60



60 Gallon Automated

The alternate size for special needs.
APPROX. WEIGHT 28 lbs.
DIMENSIONS: Height 39," Width 31," Depth 35."

Specifications:

- ☐ Rotational Molding Process.
- ☐ 100% Cross-Linked Polyethylene Including Wheels.
- ☐ Wheels: 10" Diameter. Load Factor 400 lbs.
- ☐ Axle: 5/8" Solid Steel Zinc Coated.
- ☐ Hinge 5/8" Coated Steel Tube.
- ☐ 4 Pal Nuts—Zinc Plated.
- ☐ Lid Designed With 270° Opening.
- ☐ Molded-in Date of Manufacture Code.

MASTER CART

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TELEPHONE: 916/381-3340

December 12, 1989

City of Sacramento
Department of Public Works
City Hall, Room 207
915 I Street
Sacramento, CA 95814-2673

Attn: David Pelser, Solid Waste Division Manager

Dear David:

Thank you and City Staff for the Recycling Educational Program you conducted on December 7th. The Program was an excellent opportunity for representatives of industry, the various committees, the environmental community, government agencies and the public to learn of existing programs and exchange ideas.

One aspect of the program is of great concern, however. It appears that the City is leaning toward an automated comingled collection method for its proposed curbside program. While watching the tape of the Pheonix program, one fellow, later identified as a vendor of 90 gallon containers, commented that Pheonix program had contamination in paper down to 4% "which was neglible." This statement is not true. As you can see on pages four and five of the attached copy of Circular PS-86, "Paper Stock Standards and Practices", published by the Paper Stock Institute of America, allowable contamination varies from a high of 10% in Mixed Paper to a low of .25% in Special DeInk News. As well, the type of contamination may render the product unsaleable should it be a "Prohibitive Material" and exceed allowable levels. The point is that quality of saleable recycleable material was not addressed with regard to its importance.

Since our goal in curbside and other recycling programs is to divert material from landfill to a market in which the materials may be used, perhaps an overview of what we in the industry see happening may be useful to you. We believe that the additional newspaper generated by implementation of AB939 in California will exceed market demand. We base this belief on the following factors:

INDEPENDENT PAPER STOCK CO.

A Wholly Owned Subsidiary of Smurfit Newsprint Corporation
An Affiliate of Jefferson Smurfit Corporation

Reclamation Division
4800 FLORIN-PERKINS ROAD
SACRAMENTO (EAST), CA 95826
TELEPHONE: 916/381-3340

Now. I am not saying (and I stress "not") that the City will be unable to sell collected newspaper.

When we have experienced oversupplied markets in the past, it has been our experience that end user Mills become highly selective in what materials they will purchase. As result, the higher the quality--the better the saleability. Hence, whatever system the City decides to implement, in our opinion, should consider quality an imperative.

After the City's workshop, I called the brokers that handle the material collected in Seattle. As you are aware, half of Seattle is serviced by Rabanco using an automated collection system for curbside and the other half is serviced by Waste Management using a source sorted method. The broker for the Waste Management portion told me that he is selling to mills that have high standards. The broker of the Rabanco material told me they were changing their system. I have since learned that the Rabanco material is unacceptable at Smurfit Newsprint Corp. (see "Beck", pg. 4-5) and has experienced rejections of corrugated at Sonoco Corp.'s Mill close to Seattle. The main complaint from the mills is the presence of glass. Glass, in any quantity, is a "Prohibitive Material".

Throughout this letter I have been using the example of newspaper. I have done this since it is a material with which I have been dealing for the past 10 years and it constitutes roughly 1/6 of the Sacramento waste stream and, as such, is significant. It is reasonable, based on reports in the media and trade journals, that the concerns expressed here apply for other materials as well. I should note also that selling materials is not just a matter of selling as a lower, less stringent grade. We have had Mixed Waste rejected by local mills for too high of a Newspaper content.

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Ca. Population 1989	28,662,249
Persons/Household	2.7
Households	10,615,648

(Source, Ca. Statistical Abstract, 1989)

Based on R.W. Beck's estimate of 11 pounds of newspaper per household per week for Sacramento County and that Sacramento County is probably representative of California as a whole, this extends to 3,036,075 tons of newspaper available for recycling in the state. Assuming that we achieve statewide the recycling level at which we are currently operating in Sacramento County [42.8%, (R.W. Beck)]. The material looking for a market becomes 1,299,440 tons. When we include Washington and Oregon with a combined population of 6,753,916 (1980 Census) and extend this to newspaper, assumming the same demographics and a low estimate of a 50% recycling rate, an additional 357,707 tons is available for a total figure of 1,657,147 tons of newspaper annually.

In the Beck Study the following 1988 markets (actual usage) were identified:

California	314,000 Tons
Oregon	300,000 "
Washington	30,000 "
Ca. Export	470,000 "
Est. Northwest Export (Based on ratio of Ca. to Wa./Ore. Pop.)	110.750 "
Total	1,224.750 Tons

The only major project, of which I am aware, that is scheduled to come on line in the next three years is at the Weyerhaeuser, Longview, Wa., Mill which will use an estimated 350,000 tons of newspaper annually. Including this, total identified market is 1,574,750 tons per year.

Should the above situation (which we believe is reasonable to expect) come to pass, the supply of newspaper on the West Coast will have exceeded the demand by 82,397 tons. Based on what has happened in other areas of the country as supported by enclosed articles, we consider this scenario to be the probability rather than the possibility.

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TELEPHONE: 916/381-3340

We sincerely hope that this information may be of some use in the City's decision making process. If I may be of any service feel free to contact me.

Sincerely,

Harry E. Miller
Account Manager

HEM/mm

Enc.

cc: George Lynch, County of Sacramento
Carl Hauge, SWAC

DEPARTMENT OF
PUBLIC WORKS

SOLID WASTE DIVISION

CITY OF SACRAMENTO
CALIFORNIA

921 TENTH STREET
SUITE 500
SACRAMENTO, CA
95814-2715

916-449-5757

DAVID A. PELSER
SOLID WASTE
DIVISION MANAGER

February 6, 1990

Mr. Harry E. Miller, Account Manager
Independent Paper Stock Co.
Reclamation Division
4800 Florin-Perkins Road
Sacramento, CA 95826

Dear Mr. Miller:

Thank you for your letter of December 12, 1989 concerning the alterative methods for residential recycling curbside collection. You raised some important questions that needed to be addressed. We have conducted some additional research in order to respond to your letter and similar comments from others. That research is partly responsible for our late response to your letter.

In our staff reports to the City Council's committees on November 14, 1990, and in our public education workshops on the same issues, we presented an analysis of different methods of collecting and processing residential recyclable materials. One of the methods discussed was the collection by automated methods of commingled recyclables. This is the one that caused you concern because of the combining of paper products in the same container as other recyclable materials, especially glass.

First, let me clarify the staff recommendation in the November 14, 1990 report. At that time, we stated that the "Blue Box" method (Alternative B in the report) was the staff recommended method of manual collection for a residential curbside program. We also stated that automated collection of commingled recyclables was being tried in several communities and had some promise, although it was not well tested. Because information was lacking on the automated collection system, the possibilities for a greater impact on the waste stream, and the low financial risk in trying a pilot program with automated collection, we recommended such a pilot program with the ability to revert to manual collection if it didn't work.

Since our report was written and we received your letter, we have contacted a number of people around the country and visited the Seattle and Phoenix recycling programs. Based on these contacts, we have a good understanding of the current thinking about the alternative systems. Using this information, I will respond to each of the major points of your letter.

1. You referred to the video tape we have of the Phoenix program where the operator was interviewed and mentioned a 4% contamination rate. Actually, the 4% is the amount of material collected which is not recyclable and is discarded from the program. It does not mean that paper being marketed has 4% contaminants as you had thought.

2. You mentioned that the supply of old newspaper (ONP) will exceed the demand on the west coast in the near future. I agree, as it relates to the demand for high quality ONP to be used in newspaper mills for making new newspaper. Absent from your discussion was the other markets for ONP including overseas sales, and processing into other paper fiber products and building materials (insulation), etc. It is obvious that as additional recycling programs come on line and the markets are saturated, even the highest quality ONP may not be used to make new newspaper. Thus, we must be looking to develop additional markets for the material to keep it out of landfills.

3. You have experienced that in oversupplied markets, end user mills are highly selective of the material they purchase. Again, I agree. This is also the case with other recyclable materials, not just ONP. Therefor, the same logic applies to other materials as well; in order to maximize the quantities recycled, all opportunities for recycling must be pursued. For example, recycling of certain plastic beverage and food containers may result in the production of wood substitutes instead of new food containers. Similarly, some mixed cullet from broken glass may be used as aggregate in construction instead of producing new bottles. Basically, recyclables need to be considered as a raw material which could be directed to any number of uses depending on the market opportunities and restrictions at a given time. This is why we believe that any curbside recycling program should be as flexible as possible to respond to changing conditions.

4. The specific concern you had about the fully commingled, automated collection system was the possibility of glass contamination in paper with the resulting problem of marketing the contaminated paper. This is the major concern expressed by most people when first hearing about the fully commingled systems. The Phoenix pilot program has experienced no real problem with glass in the ONP. In fact, more glass breakage occurs in the handling

of the materials at the processing center than in the automated collection and compaction in the trucks. Suprisingly, the mixing of recyclables in one container tends to reduce breakage in the Phoenix program because the paper materials and PET bottles cussion the glass during handling. In Seattle, the Rabanco program is selling their ONP at Grade 6, the same grade your company has assigned to ONP from the County of Sacramento source separation program and the same as the Waste Management Inc. Recycle America source separation programs. When conducting our interviews of various program operators, we noticed a tendency for the private companies to exaggerate the success rate of their programs and downgrade their competitors. It has been necessary to ask the same questions of several different people in each City in order to have some confidence in our conclusions. So far, glass contamination in paper is still a major concern about commingled recyclables collection. But the few programs now operating this way are in fact selling their ONP at reasonable rates. Another consideration is the future of glass in residential recycling programs. Although a "long shot" now, it is conceivable that the trend in California to increase the redemption value on glass containers may eventually result in little glass appearing in a municipal collection system. In that case, the best overall strategy might be to exclude glass from the collection system and concentrate on mixed papers, old corrugated cardboard, plastics, and metals.

5. In your letter, you drew the logical conclusion that if glass is a problem for newspaper, then other commingled materials may have contamination problems also. Our review of existing programs shows this is not the case. The only contamination issue encountered by fully commingled systems is the glass and newspaper potential problem addressed above. Ironically, there are some contamination problems with other collection systems which require material separation by residents. One operator told us that separately bundled ONP often contains plastic and other incompatible paper products that are difficult to clean up in a "source separation" program which is not designed for higher levels of processing before shipping to market. Further, even in "source separation" programs, we have found that many operators must do additional sorting and upgrading before marketing their materials. No matter what kind of program is used, some sorting and processing of materials must take place.

In summary, the information you provided, and the questions you raised were very useful in continuing our analysis of alternative methods of providing curbside collection of recyclables to City residents. You helped us to focus our research efforts which will influence our conclusions. At the time of writing this letter, we have not yet finalized our recommendations which we expect to present to the Council's joint committees on February 27, 1990. In fact, Gary Van Dorst and I (along with Denny Kerton of the

County staff) are attending an international recycling conference in Seattle next week. We will be visiting the Rabanco and Waste Management Inc. programs and we are scheduled to meet with representatives of the City of Seattle. This experience should help us reach well informed conclusions about the direction the City and County should take.

Sincerely,

David A. Pelser

David A. Pelser
Solid Waste Division Manager

cc: SWAC and recycling subcommittees
Reginald Young, Deputy Director of Public Works
Gary Van Dorst, Waste Reduction Coordinator
File: RR-1.1

C O P Y

2125 12th Ave., Apt. 7
Sacramento, CA 95818
February 27, 1990

Carl J. Hauge, Chairman SWAC and
City Recycling Subcommittee
2600 Marshall Way
Sacramento, CA 95818

Dear Carl and Committee Members:

As I will be out of town the first three weeks of March, there are some comments I'd like to pass on to you and the Committee as you make your recommendation decision on a recycling system.

While it is compelling to coordinate systems with the County decision, there are other considerations that I believe carry considerable weight.

First, I believe the City Staff produced a very comprehensive a and responsible study of the alternatives. Their immersion in the various alternatives opened up a range of possibilities. It is important for the City Subcommittee to be equally open to solutions other than the familiar or pre-conceived ones in order to make the best possible choice. Systems that do not have built-in possibilities of change or development are often found inadequate in a short time. A system that is 'tried and true' may be that much closer to obsolescence.

The City Staff Report on p. 49 states that "the source separation method is no longer regarded as the wave of the future by experienced program operators."

In regard to contamination of materials, a major drawback of commingled recyclables, the report also states on p. 49 that "revenue from materials is insignificant compared to the cost of collection and processing." As Michael Rock reminded us, recycling must not be thought of chiefly as a revenue-producing activity, but a necessary service for the sustained health of our ecology.

I am writing in support of Alternative D, the fully automated and commingled recyclables from 15, 30, 60 or 90-gallon containers. My reasons are listed below:

1. It is a strong City Staff recommendation. Their experience is crucial to this process.
2. Other materials like cardboard and plastics can be added as markets develop. It offers easy expansion and increase in recycling.
3. Less frequent collection saves labor and fuel costs. Vehicles and equipment are already compatible. If unsuitable in the pilot program, the equipment is easily integrated into the present system.

4. If there was a good reason for the shift to automated collection of garbage, there is an equally good argument for the automated collection of recyclables.

   a. Lifting injuries and stress are reduced for personnel.

   b. Lifting injuries are avoided for householders. (Remember the convenience factor.) The ease of moving a wheeled container far surpasses that of carrying heavily loaded stackers to the curb. The population is aging. Many women live alone. They would be unable to carry a stacker loaded with newsprint or glass to the curb.

5. Stackers offer no protection from rain which completely ruins newspaper. The drought won't last forever (I hope).

6. Automatic containers also offer protection from scavenging, be design, and the fact that beverage containers are mingled.

7. There are many measures that can be taken to reduce breakage and contamination in the mingling of recyclables.

8. Householders still have to separate recyclables from other garbage. "Raising consciousness" is not a sufficient reason for selecting stackable containers.

9. The Subcommittee's own recommendations (Phase I report, p. 39, I, (c), state that "Recycling solid waste should be as convenient as throwing solid waste away," and include options for multi-family dwellings. For apartment dwellers who live in smaller spaces, maintaining separate containers is virtually impossible for lack of indoor or outside space. Having one central recyclable container on the premises is their only convenient possibility.

10. Please read over the eight steps to successful innovation listed on the enclosure. Every one of them affects the establishment of this new program. They ought not to be ignored.

Finally, could the Sacramento Bee be asked to conduct a telephone poll of public opinion as the S.F. Chronicle has done in the past? One week an article is printed giving the pros and cons of two alternative choices. Two telephone numbers are printed, one for the yeas, another for the nays, with a deadline for reply. Real public input here would seem to be a very important need. Public hearings at City Hall don't attract notice from the average citizen.

Your City Subcommittee is a truly dedicated and conscientious group of citizens. I am most impressed with your abilities and responsibility. You have difficult choices to make, but there are also many sources of competent help you can call on. I wish you a clear crystal ball when the time comes for the big decision. Best of luck.

Yours sincerely,

Patricia A. McHugh

cc. All Committee members
Enc.: 8 Tactics for reducing resistance to innovation

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Eight Tactics for Reducing Resistance to Innovation*

#1 **Perceived advantage:** The user should be able to see, *easily*, an advantage of the innovation over what he is doing now.

#2 **Compatibility:** the better the new idea is perceived to fit with what is already being done, the more likely it is that it will be accepted.

#3 **Simplicity:** Keep the supporting activity needed for successful use of the innovation as simple as possible. This doesn't mean the mechanism should not be complex. It merely means the user's perception of the innovation should be simple.

#4 **Divisibility:** the more the innovation can be tried one piece at a time, the easier it will be to accept.

#5 **Communicability:** if you use old vocabulary to describe the new idea, you make it easier to accept.

#6 **Reversibility:** it must be easy for the user to withdraw from the use of the innovation.

#7 **Relative Costliness:** the degree to which the innovation absorbs the user's resources--including time, money, personpower, emotional commitment, etc.-- should be *less* than what it is replacing.

#8 **Failure Consequences:** the user must understand the consequences of failure of the innovation and, obviously, the less potential injury from failure, the more interested the user will be.

✳ **Remember, the key is how the *user* perceives the impact of the innovation, not how you, the innovator perceives it.**

*Originally based on research on the diffusion of innovations by Dr. Everett Rogers and modified and expanded by Professor James R. Bright.

MATRIX COMPARISON OF THREE SYSTEMS

Three Stackable Bin System	"Blue Box" Single Container	Fully Automated Collection of Commingled Recyclables
Description: Residents provided minimum of 3 bins for source separation of bottles, cans, and newsprint; collection of old corrugated cardboard (OCC) an option under this collection method; weekly collection same day as regular garbage collection.	Description: Residents commingle all boxes in single boxes (14-20 gallon size) with newsprint stacked separately on top of or at side of containers; weekly collection same day as regular garbage collection; OCC not an option for collection under this collection method; vehicle with two bins as opposed to multiple bins under A.	Description: Monthly same day collection as regular refuse using fully automated side-loader; use of 60-90 gallon can, fully automated with commingling of all recyclables including OCC.
Design Considerations: Least processing of materials requiring less capitalization for construction of material recovery facility (MRF); life span of containers estimated to be 5-10 years with minimum 5% annual replacement cost; requires truck with minimum of 3 bins or even multiple bins; problem for expanded program when materials are added; manual loading of typical truck does not allow for use of cull capacity of bins requiring more frequent returns to processing center; greatest number of vehicles and drivers associated with this alternative.	Design Considerations: Greater pounds per residence according to industry representatives operating both stackable bin systems and blue box systems; containers inexpensive at $4.50/each compared to other alternatives; preferred design by current operators of 3 stackable bin systems in San Mateo and San Jose; least capital outlay of three systems analyzed; life of container estimated to be 5-10 years with some possibly less annual replacement cost than Alternative A; greater passes by per vehicle than A but less than fully automated system; two bins on truck allows truck to stay on route longer than Alternative A with top loading from semi-automated top loading allowing for use of full capacity of vehicle.	Design Considerations: Residents provided 60 or 90-gallon can for recyclables; larger can provides residents capacity for more materials and to put can out less frequently increasing efficiency of collection with greatest passes-by; commingling of fiber with glass could cause contamination of fiber; research has shown that this is not a problem based on few fully automated, fully commingled systems surveyed relative to the many 3 bins systems and the blue box systems; container protects newsprint and OCC from contamination by inclement weather; life span of container 10+ years.

Processing of Materials: Least processing of alternatives but still requires intermediate processing to upgrade materials and to remove contaminants (e.g. removal of brown kraft, waxed cardboard, and plastic from newsprint, color sorting of glass, etc.); materials collected would be aluminum beverage containers, glass containers, tin cans, old newspapers, OCC, and polyethylene terephthalate (PET).	Processing of Materials: Somewhat higher level of processing of materials; greater ability to add materials without any redesign of the collection system due to capacity of container; same materials collected as three stackable bin system.	Processing of Materials: Highest level of processing of materials with greatest ability to add materials without any redesign of the collection system due to capacity of container.
Worker Injury: Collection likely to be associated with greatest injury rate of 3 systems; worker must pick up and sort three bins into truck with many truck designs under this alternative requiring worker to lift bin above waist for loading in truck.	Worker Injury: Rate of worker injury may be less than Alternative A but greater than commingled system due to semi-automated system design; worker only makes two separations and loads into waist high receptacle on side of truck.	Worker Injury: Least injury rate due to full automation.
Compatibility With Commercial (small) and Multiple Residential Collection: Least compatible of alternatives.	Compatibility with Commercial (small) Recycling: May or may not be compatible depending on selection of truck; may be able to purchase truck with semi-automated lift for this system to accommodate 60-90 gallon containers.	Compatibility with Commercial (small) Recycling: Entirely compatible with commercial and multiple residential since 60-90 gallon cans could be provided multiple residences and many businesses for collection.
Flexibility: Least flexible of all alternatives with addition of further materials more difficult. Less ability to respond to fluctuating markets with possible need to redesign collection system to accommodate expanded list of materials collected.	Flexibility: More flexible than A; materials can be added due to commingling of all containers.	Flexibility: Most flexible of 3 systems analyzed providing ability to add materials with sorting and separation done at a MRF; minimization of financial risk to City since vehicles and containers under this alternative could be taken back into existing refuse collection fleet in the event a pilot program is not successful.
Economy of Scale: Best for small sized programs.	Economy of Scale: Best for medium sized programs.	Economy of Scale: Best for large programs due to capital investment in processing facility.
Convenience to User: Least convenient to use of alternatives analyzed due to requirement for source separation and carrying of containers to curbside involving greater risk of injury to resident.	Convenience to User: High degree of convenience to user due to commingling of containers and fact that ONP is normally stacked for collection by residents; container may become heavy and difficult to carry resulting in risk of injury.	Convenience to User: Greatest convenience is to fully commingle materials, wheel on containers, and capacity allows for OCC without cutting into small sizes; associated with least risk of injury to resident.

Promotion and Education: May require a larger budget for promotion and education of residents due to greater degree of behavior modification required although bins are aesthetic and highly visible which further promotes program.	Promotion and Education: Less behavior modification required than 3 bin system.	Promotion and Education: Least behavior modification required.
Marketability of Product: Of alternatives analyzed, may produce cleanest product with least contamination and greatest revenue for materials diverted.	Marketability of Product: May involve less glass breakage due to commingling with other containers and avoids problem of fiber contamination associated with commingling of all recyclables.	Marketability of Product: May produce secondary quality products due to cross contamination in commingled materials, but may result in greater volume of recyclable collected and directed from waste stream.
Scavenging: Open container and separation of materials will lend itself to easy scavenging.	Scavenging: Open container will lend itself to scavenging.	Scavenging: Will discourage scavenging due to lid on container, size of container and commingling of all materials.
Inclement Weather: Will lend itself to litter problems associated with wind and contamination of fiber materials from rain.	Inclement Weather: Will lend itself to litter problems associated with wind and contamination of fiber materials from rain.	Inclement Weather: Litter problems associated with wind and contamination of fiber materials from rain will be precluded by use of 60 or 90-gallon container.
Costs:	Costs:	Costs:
Cost of Container Set=$15 (5-10 year life)	Cost of Container=$4.50 (5-10 year life)	Cost of Container=$55-$60/Each (10+ year life)
Rate Increase/Month for Ongoing Expenses=$0.66 (7.24% Increase)	Rate Increase for Ongoing Expenditures=$0.63 (6.94%)	Rate Increase for Ongoing Expenditures=$0.52 (5.68%)
Rate Increase/Month for One Time Capital Cost=$0.87 (9.47%)	Rate Increase for One Time Capital Costs=$0.69 (7.5%)	Rate Increase for One Time Capital Costs=$1.87 (20.42%)
Total of above=$1.53 (16.71%)	Total of above=$1.32 (14.44%)	Total of Above=$2.39 (26.1%)
% Initial Diversion from Landfill=1.02% for pilot	% Initial Diversion from Landfill=1.02%	% Initial Diversion from Landfill=1.11%

ATTACHMENT D

DEPARTMENT OF
PUBLIC WORKS

OFFICE OF THE DIRECTOR

CITY OF SACRAMENTO
CALIFORNIA

CITY HALL
ROOM 207
915 I STREET
SACRAMENTO, CA
95814-2673

916-449-5283

ADMINISTRATION
916-449-8747

March 13, 1990

Budget and Finance/Transportation
and Community Development Committee
Sacramento, California

Honorable Members in Session:

SUBJECT: **RECYCLING EDUCATION PROGRAM**

SUMMARY

The Phase I Report of the City Recycling Subcommittee recommended the design and implementation of a recycling public education campaign. This report provides an overview of approaches, tools and techniques which might be used to increase public understanding of a variety of waste reduction and recycling programs.

Two Recycling Educational Programs were held on December 7, 1989 and February 1, 1990, to receive public input regarding the proposed City recycling program. Several workshop participants contributed ideas and suggestions for public information strategies, and expressed agreement with the high priority assigned to public education.

BACKGROUND

As the Subcommittee report noted, the achievement of the City's recycling goals requires participation and commitment on the part of the public. Operators of recycling programs throughout the country stress the importance of an on-going, positive public education program if recycling and waste reduction efforts are to be effective. Public education will assist in the development of a "recycling ethic" and increased environmental awareness. The program will also convey practical information, such as how and where to recycle; how to prepare recyclables for collection or redemption, and how to purchase wisely to reduce waste.

The tools and techniques which can be used effectively in a recycling education program are limited only by the creativity of the staff (and the resources allocated to the program, of course.) The education program in the City of Sacramento should be organized into four key results areas: school involvement, neighborhood participation, City-wide promotion and community leadership. Each of these is discussed below:

School Involvement: As discussed in the separate report on implementation of a curbside recycling program, the development of increased recycling awareness among school children is perhaps the single most important element of the education program. We must install habits and values that children, as our future consumer base, will carry with them into adulthood. The school campaigns may include:

- School assemblies, featuring recycling mascots such as Clark Can, Nancy News, the Wizard of Waste

- Give-away reminders printed with recycling logos and slogans, such as bookcovers, pencils, coloring books, etc.
- Essay and poster contests
- Radio Public Service Announcement writing contests (Jr. high level)
- Recycling curricula to be included in the science lesson on a regular, ongoing basis
- Classroom recycling and waste reduction "experiments"

Neighborhood Participation: This element is especially important to the success of a curbside recycling or yard waste reduction program. The success of City's waste reduction efforts will be aided greatly if residents can be persuaded to view recycling as one of their civic responsibilities. Neighborhood involvement efforts should include:

- A Block Leader Program. These volunteers distribute program materials, answer questions about recycling opportunities, and encourage neighborhood involvement
- Attendance by program representatives at neighborhood events such as school carnivals, picnics, community meetings, etc., to convey the message that recycling is an ongoing part of our lives
- Articles in local newsletters and community publications
- Surveys of residents to determine satisfaction levels with various recycling programs and identify areas for improvement
- Cooperative efforts with non-profit groups such as the Boy Scouts to insure City programs do not displace their revenue producing recycling programs

City-wide Promotion: While the education and promotion campaign for the curbside program targeted participating neighborhoods, the overall program should take advantage of the many avenues available for reaching residents and business people throughout the City. This program will inform people of the many ways they can help to reduce waste--drop off recycling centers, contribution of recyclables to non-profit groups, home composting and mulching, smarter buying habits, etc. Some techniques include:

- Utility bill inserts
- Utility bill messages
- Radio Public Service Announcements
- City Billboard
- City vehicle signage

- Displays and information at major events, such as parades, jazz festival, water festival, Kings games, State Capitol events, etc.
- Giveaways such as bumper stickers, refrigerator magnets, frisbees, note-pads, litter bags, and other merchandise printed with recycling logos and slogans, to keep the recycling message uppermost in people's minds
- Bus bench signage
- Press conferences and events to attract media attention for recycling programs

Community Leadership: A key element in integrating waste reduction and recycling into the daily lives of City residents is the education of community leaders. These influential representatives can be very effective at conveying the "reduce•reuse•recycle" message. Among the approaches to be considered:

- Establishment of a Speaker's Bureau to speak to service clubs, community groups, neighborhood associations, high schools and non-profits
- Meetings with editorial boards and news media executives to convey the importance of and potential interest in recycling coverage
- Development of a briefing kit for the press and community leaders
- Production of a recycling video to be shown to service clubs, schools, neighborhood groups, etc.
- Use of celebrity spokespersons to do PSA's, keynote events, featured on posters and brochures, etc.
- Involvement by the Solid Waste Advisory Committee in an advisory capacity

FINANCIAL DATA

If the City Council approves the addition of the Waste Reduction Coordinator position requested in conjunction with the proposed Residential Curbside Recycling Program, many of the education strategies included in this report can be accomplished without additional staff.

POLICY CONSIDERATIONS

The development of a recycling public education and promotion campaign will assist in achieving the City Council's adopted recycling and landfill avoidance goals.

MBE/WBE

No impact.

RECOMMENDATION

It is recommended that the Joint Committee endorse the recycling education strategy outlined in this report.

Respectfully submitted,

Reginald Young
Deputy Director of Public Works

APPROVED FOR RECOMMENDATION:

Solon Wisham, Jr
Assistant City Manager

APPROVED:

Melvin H. Johnson
Director of Public Works

March 13, 1990
All Districts

Contact Person:
Roberta Larson
Administrative Services Officer 449-5877

ATTACHMENT E

DEPARTMENT OF
PLANNING AND DEVELOPMENT

CITY OF SACRAMENTO
CALIFORNIA

1231 I STREET
ROOM 200
SACRAMENTO, CA
95814-2998

BUILDING INSPECTIONS
916-449-5716

PLANNING
916-449-5604

March 13, 1990

Joint Transportation and Community Development/
Budget and Finance Committee
Sacramento, California

Honorable Members in Session:

SUBJECT: **RECYCLING DESIGN GUIDELINES FOR THE ZONING ORDINANCE (Attachment E)**

SUMMARY

The Planning and Development Department has drafted a Zoning Ordinance amendment to regulate the recycling and solid waste disposal requirements and design guidelines for new and existing development. New development will be required to meet the design guidelines for recycling enclosures and containers prior to obtaining a building permit. Property owners of existing developments will be required to meet a mandatory deadline to retrofit existing development with recycling enclosures and containers. The Zoning Ordinance amendment is attached. A one year period of compliance after notification through the utility bills is suggested for existing development. A Developer's Handbook for Recycling is planned for completion by June 1990 to assist the property owner in complying with the regulations and provide examples of excellent recycling programs upon which to model programs for new and existing developments.

BACKGROUND

On August 29, 1989, the City Council approved a resolution establishing Recycling and Waste Reduction Goals and directing staff to develop recommendations for implementation of a Curbside Recycling Program. In Exhibit E of that resolution the Planning and Development Department was directed to draft a Recycling Design Ordinance. This ordinance would ensure that each residential, commercial, and industrial establishment and development has the allocated space necessary to separate and store recycled material in a convenient and accessible manner so that the City can meet its waste reduction goals and maximize the amount of solid waste that is recycled.

The proposed Zoning Ordinance amendment includes a new section, Section 34 on Recycling and Solid Waste Disposal Regulations; a modification of the land use matrix in Section 2 for recycling facilities; addition of new definitions in Section 22; and a relocation of current Section 2.1 on Reverse Vending Machines into the new Recycling Section.

The proposed Section 34 is composed of two sections- (1) Section 34- Recycling and Solid Waste Disposal Regulations for New and Existing Development, and (2) Section 34.1- Site/ Zone Regulations for Recycling Facilities.

Proposed Section 34 is organized by subsections including:

A. **Purpose**- includes the purpose of the ordinance and specifies to whom the ordinance applies.

B. **Recycling Program**- a program is required including a recyclable materials flow chart, a site plan, construction and demolition plans, and an education/PR plan.

C. **Chart of Recycling Volume and Materials to be Recycled**- specifies volume and materials to be recycled for each land use.

D. **Design Guidelines for Enclosures and Containers**- specifies design requirements for enclosures and containers.

E. **Special Design Guidelines**- specifies design requirements in special circumstances.

F. **Existing Development Requirements**- specifies requirements and period of compliance for existing development.

A Variance and appeal process is specified in Section 34 for property owners to vary the requirements if complying with the requirements results in a hardship.

Proposed Section 34.1 is a modification of current Section 2.1 and includes the zoning and site regulations and permit process for Reverse Vending Machines, Small Collection Facilities, Large Collection Facilities, Recycling Material Recovery Facilities, and Composting Facilities.

The Environmental Coordinator has determined that the proposed Zoning Ordinance amendment will not have a significant adverse effect on the environment and has filed a negative declaration. The proposed Zoning Ordinance amendment will be reviewed by the Planning Commission at their March 8, 1990 meeting.

FINANCIAL DATA

Planning and building staff will review the Recycling Program and check compliance of Volume, Materials to Be Recycled, and Enclosure and Container Design Guidelines for each project. Also, the Recycling Coordinator will be required to review proposed recycling programs for existing development. No estimate of the additional staff needed to complete these tasks has been made at this time.

POLICY IMPLICATIONS

This ordinance is proposed to help implement new policies previously adopted by the City Council for recycling and solid waste collection enclosures and containers.

MBE/WBE

Not applicable.

RECOMMENDATION

Planning staff requests the Joint Committee review the attached Zoning Ordinance amendment and provide comment and direction for the next phase of work.

Respectfully submitted,

Marty Van Duyn
Planning Director
Planning and Development
Department

Recommendation Approved:

Solon Wisham, Jr.
Assistant City Manager

Approved:

Michael M. Davis
Director of
Planning and Development

Contact Person:

Carol Shearly, Junior Planner
449-5604

March 13, 1990
ALL DISTRICTS

ORDINANCE NO.

ADOPTED BY THE SACRAMENTO CITY COUNCIL
ON DATE OF

An Ordinance amending Section 2.C.35, 2.D.18, 2.E.41, 2.1, 22.A.55, 22.A.56, 22.A.98, 22.A.99, 22.A.100, 22.A.101, 34, and 34.1 of the Comprehensive Zoning Ordinance of the City of Sacramento, Ordinance No. 2550, Fourth Series, as amended, relating to recycling and solid waste disposal requirements for new and existing development **(M90-003)**.

Be it enacted by the Council of the City of Sacramento:

Section 1 Land Use Matrix

Section 2.C.35, 2.D.18 and 2.E.41 of the Zoning Ordinance of the City of Sacramento, Ordinance 2550, Fourth Series, as amended, is hereby amended to read as follows:

C35. REPEALED- ORDINANCE NO.

	C-4	M-1 M-1S	M-2 M-2S	A
D18. Large Recycling Collection Facility	41	41	41	
D18b. Recycling Material Recovery Facility		41	41	
D18c. Composting Facility		41	41	41

E41. Permitted subject to the provisions of Section 34.1 of this ordinance. (M90-003)

Section 2 Repeal Current Section 2.1

Section 2.1 of the Zoning Ordinance of the City of Sacramento, Ordinance No. 2550, Fourth Series, as amended, is hereby amended to read as follows:

Section 2.1- REPEALED- ORDINANCE NO.

Section 3 Definitions

Section 22.A.55, 22.A.56, 22.A.98, 22.A.99, 22.A.100, 22.A.101 of the Zoning Ordinance of the City of Sacramento, Ordinance No. 2550, Fourth Series, as amended, is hereby amended to read as follows:

Section 22.A.55- REPEALED- ORDINANCE NO.

Section 22.A.56- REPEALED- ORDINANCE NO.

Section 22.A.98- REPEALED- ORDINANCE NO.

Section 22.A.99- REPEALED- ORDINANCE NO.

Section 22.A.100- The following definitions shall apply to Section 34 and 34.1 of this Ordinance:

a. Recyclable Material: Recyclable Material is reusable material, including, but not limited to metals, glass, plastic, and paper, which are intended for reuse, remanufacture, or reconstitution for the purpose of using the altered form. Recyclable material does not include refuse or hazardous material.

b. Reverse Vending Machine: A Reverse Vending Machine is an automated mechanical device which accepts one or more empty beverage containers, including, but not limited to aluminum cans, glass and plastic bottles, and issues a cash refund or redeemable credit slip with a value not less than the container's redemption value, as determined by the State. A reverse vending machine may sort or process containers mechanically provided that the entire process is enclosed within the machine.

c. Mobile Recycling Center: A Mobile Recycling Center means an automobile, truck, trailer, or van licensed by the State Department of Motor Vehicles, which is used for the collection of recyclable material. A mobile Recycling Center also means the bins, boxes, or containers transported by trucks, vans, or trailers and used for the collection of recyclable materials.

d. Small Recyclable Material Collection Facility: A Small Collection Facility is a facility for the acceptance (donation, redemption, or sale) of recyclable materials from the public which occupies an area of not more than 500 square feet. Such a facility does not use power-driven processing equipment except as indicated in the Criteria and Standards in Section 34.1.D.1 and 2. Small Collection Facilities are:

(a) Reverse Vending Machine(s);

(b) Mobile Recycling Center(s);

(c) Kiosk type units and bulk vending machines; or

(d) Unattended containers placed for the donation of recyclable materials.

e. Large Recyclable Material Collection Facility: A Large Collection Facility is a facility for the acceptance of recyclable materials from the public which occupies an area larger than 500 square feet. Such a facility may use power-driven processing equipment as indicated in the Criteria and STandards in Section 34.1.D.3.

f. Recyclable Material Recovery Facility: A Recyclable Material Recovery Facility is a processing facility that acccepts recyclable materials from collection facilities and the public, processes the materials into a resaleable condition, and markets the materials to companies to reuse. Such a facility must meet the Criteria and Standards listed in Section 34.1.D.3.

g. Composting Facility: A Composting Facility is a facility that accepts garden and wood waste to reprocess into compost, wood chips, or other wood products. Such a facility must meet the Criteria and Standards listed in Section 34.1.D.5.

Section 22.A.101- REPEALED- ORDINANCE NO.

Section 4

Section 34 is hereby added to the Zoning Ordinance of the City of Sacramento, Ordinance No. 2550, Fourth Series, as amended, to read as follows:

See Section 34 attached.

Section 5

Section 34.1 is hereby added to the Zoning Ordinance of the City of Sacramento, Ordinance No. 2550, Fourth Series, as amended, to read as follows:

See Section 34.1 attached.

Passed for Publication:
Enacted:
Effective:

_____
MAYOR

ATTEST:

_____
CITY CLERK

SECTION 34: RECYCLING AND SOLID WASTE DISPOSAL REGULATIONS

A. PURPOSE: The purpose of these regulations is to do the following:

1. Regulate the location, height, size, and design features of recycling and trash enclosures and containers in order to provide adequate, convenient space for the collection, storage, and loading of recycled material at each proposed and existing multi-family residential, commercial, office, industrial, public/quasi-public development;

2. Ensure the provision of adequate locations, which are compatible with surrounding land uses, for the storage, processing, marketing, and shipping of recycled material;

3. Provide educational material to each development user about the importance of recycling and how to recycle;

4. Increase the recycling of reusable materials; and

5. Reduce litter.

These regulations are necessary in order to:

1. Lengthen the lifespan of the City of Sacramento landfill and decrease the cost of hauling to the County of Sacramento landfill,

2. Encourage the reuse of recyclable material in order to reduce our reliance on and use of virgin materials,

3. Encourage each citizen's choice to dispose of solid waste responsibly, and

4. Decrease the impact of the citizens' consumption of renewable and non-renewable materials on the environment.

These regulations apply to:

1. Single Family and 4 unit or less Multi-Family Residential Uses- No design guidelines apply to these developments. Curbside Recycling will be utilized by the City of Sacramento or its agent to collect recyclable materials from these residences. Developers are encouraged to include innovative designs both inside and outside to make recycling more convenient and accessible to the resident.

2. 5 or more unit Multi-Family Residential Uses- New and existing developments of this type are required to submit a Recycling Program and meet the Volume Requirements, Materials to Be Recycled, and Design Guidelines for Enclosures and Containers.

3. Commercial, Office, Industrial, and Public/ Quasi-Public Uses- New and existing developments of these types are required to submit a Recycling Program and meet the Volume Requirements, Materials to Be Recycled, and Design Guidelines for Enclosures and Containers.

B. RECYCLING PROGRAM REQUIREMENT: A Recycling Program is required for each commercial, office, industrial, public/ quasi-public, and 5 units or more, multi-family residential development prior to issuance of a building permit. A Recycling Program shall include:

1. Diagram to chart the flow of recyclable material from each portion of the development to the recycling and trash enclosure(s). Include container sites and who is responsible for collecting recyclable materials.

2. Site Plan to include the location and design specifications of the recycling and trash enclosure(s) and container(s) that shall meet the Volume and Material Requirements (Section 34-C) and the Design Guidelines (Sections 34-D and 34-E).

3. Construction Plan to specify any recycled material to be used in the construction of the proposed development. (For example, recycled brick, tile, or insulation made from recycled plastics)

4. Demolition Plan to specify any proposed recycling of reusable or recyclable building material in the demolition of any structure on the subject site. Each demolition permit request shall be reviewed by the Recycling Coordinator.

5. Education/ Public Relations Program to instruct users of the development about the benefits of recycling and how to recycle.

A Recycling Program for new development that requires a planning entitlement shall be reviewed and approved by the Planning staff as part of the Application and Environmental Questionnaire. A Recycling Program for new development that does not require a planning entitlement shall be reviewed and approved by the Building staff as part of the Building Permit process. A Recycling Program for existing development shall be reviewed by the Recycling Coordinator of the Public Works Department, Solid Waste Division. If a Recycling Program is not approved, a Planning Director's Variance may be requested by the property owner. Section 14 outlines the Variance procedure.

C. RECYCLING AND TRASH ENCLOSURE VOLUME REQUIREMENT: Recycling and Trash Enclosure Volumes shall be provided as specified in Table C Recycling and Trash Enclosure Volume/Material Requirements for the use or uses to which the property is devoted and shall meet the Design Guidelines (Sections 34-D and 34-E).

To determine the volume required for recycling and the materials to be recycled for a specific land use:

1. Find the proposed use or uses in the first column.

2. Read across the chart under "Recycling Volume". That volume is the minimum volume of container capacity that must be provided to separate, store, and recycle at least the materials listed in the column labelled "Materials to be Recycled".

3. If there is more than one use, add the "Recycling Volume" requirement for each use to find the total volume for the development. Each material in the "Materials to be Recycled" list for each use must have a container(s) provided for it.

4. **For new developments**, if compliance with the volume requirement or the materials to be recycled results in an unnecessary hardship to the owner, a Variance may be requested.

5. **For existing development**, if compliance with the volume requirement, the materials to be recycled, or the time period (Section 34-F) results in a practical difficulty or unnecessary hardship to the owner, the owner shall contact the Recycling Coordinator of the City of Sacramento Public Works Department and negotiate a compromise that meets the intent of the Recycling Regulations. Said compromise shall be signed by the owner and the Director of Public Works. If no compromise can be reached, a Variance may be requested from the Planning Department.

TABLE C

LAND USE	RECYCLING VOLUME	MATERIALS TO BE RECYCLED
1. RESIDENTIAL		
a. Single Family - Curbside recycling to be provided by City or its agent.		
b. Multi-Family (4 or fewer units)- Curbside recycling to be provided by City or its agent.		
c. Multi-Family (5 or more units)	1 cy/ 16 units/ wk	aluminum, glass, plastic, newspaper
2. COMMERCIAL		
a. Office	1 cy/ 40,000 sq.ft./wk	office paper, computer paper
b. Restaurant/Bar	1 cy/ $4,000 sales	aluminum, glass, plastic,
c. Retail- Food	1 cy/ 3,500 sq.ft./wk	cardboard
d. Retail- Non-Food	1 cy/ $8,000 sales	cardboard, office paper, computer paper
e. Motel/Hotel/Inn/B+B	1 cy/ 20 rooms/wk	aluminum, glass, plastic, newspaper
f. ServiceStation/AutoRepair	1 cy/ $1,000 sales	tires, motor oil, scrap metal
g. Sport/Entertainment Halls	1 cy/ $4,000 sales	aluminum, glass, plastic
3. INDUSTRIAL		
a. Building	VA	wood, concrete, plastic, metal
b. Manufacturing	VA	VA
c. Food Processing	VA	VA
d. Wholesale/Warehouse	VA	VA
4. CHURCHES, SCHOOLS, AND LIBRARIES	S- 1 cy/ 10 rms/ day C,L- calculate volume using office sq.ft.	S- paper, cardboard, beverage containers C, L- office paper, computer paper
5. HOSPITAL/MEDICAL CLINIC	No recycling except cafeteria, vending	aluminum, glass, plastic
6. **OTHER**	**To be determined by the Planning Commission**	

VA- varies with activity. Submit recycling volume and materials to be recycled with Recycling Program.
cy= cubic yard

D. RECYCLING AND TRASH ENCLOSURE DESIGN GUIDELINES:

1. Types of Development:

a) Recycling and Trash **Enclosures** with containers shall be required for the following types of developments:

1) Multiple Family Residential with 5 or more units

2) Any commercial, office, public/ quasi-public project where dumpsters are being used.

3) Any industrial project where dumpsters are not screened by landscaping, fencing or a structure.

b) Recycling and Trash **Containers** of sufficient volume and number to meet the requirements in Table C above shall be required for every other commercial, office, industrial, or public/ quasi-public project when a dumpster is not used.

2. Materials, Construction, and Design: The following regulations shall apply for Recycling and Trash Enclosure materials, construction, and design:

a) The walls of each recycling and trash enclosure shall be constructed of solid masonry material with decorative exterior surface finish compatible to the main structure(s). Split face concrete block finish is recommended.

b) Each recycling and trash enclosure shall have decorative solid heavy gauge metal gates and be designed with cane bolts to secure the gates when in the open position.

c) Each recycling and trash enclosure shall be designed to allow walk-in access by tenants without having to open the main enclosure gates.

d) The walls of each recycling and trash enclosure shall be a minimum of six feet in height.

e) A concrete apron shall be constructed either in front of each recycling and trash enclosure facility or at the point of container/dumpster pick-up by the recycling collection or waste removal vehicle. The minimum dimensions of the concrete apron for an enclosure shall be:

* width- 10 feet
* length- 20 feet

Larger recycling and trash enclosure facilities shall require a larger concrete apron, subject to the approval of the City Building Inspections Division Building Technicians (Plan Checkers). Paving

material shall consist of five inch aggregate base rock and six inch portland cement paving.

f) The enclosures shall be adequate in capacity, number, and distribution to serve the development and shall meet the above requirements for recycling and trash enclosure volume and materials to be recycled. Multi-family residential development shall meet the unit to enclosure distance requirement in Section 34.D.7.

g) The property owner shall supply and maintain adequate bins and containers for recycling and waste disposal. Location, type, and placement of bins and containers shall be reviewed and approved by the Recycling Coordinator and the Solid Waste Division.

h) Maintenance of each recycling and trash enclosure and the bins and containers shall be the responsibility of the property owner.

i) Whenever feasible, the recycling collection area and the trash collection area shall be adjacent to one another in one enclosure.

j) The property owner is responsible for contracting with the recycling broker(s) and the trash collection company(ies) for regular pick-up of recycled material and trash.

3. Educational Signs: Signs shall be posted on each container listing which material shall be disposed of in that container. General instructions about the benefits of recycling and how to recycle shall be posted within the recycling and trash enclosure or near the container area and shall be visible to the enclosure/ container users. The name and phone number of the person responsible for maintenance of the enclosure or containers shall be posted. Any sign visible from outside the enclosure must be no larger than 4 square feet.

4. Landscaping: The perimeter of the recycling and trash enclosure shall be planted with landscaping, including a combination of shrubs and/or climbing evergreen vines. ** Add discretionary language for enclosures further away from irrigating sources. **

5. Setbacks: No recycling or trash enclosure or container shall be located in any required setback area.

6. Parking: With the exception of Section 34.F.4 for existing development, no recycling or trash enclosure or container shall be located in any required parking space.

7. Distance of Recycling and Trash Enclosure from Multi-Family Units: Each recycling and trash enclosure within a multi-family residential development shall be no greater than 250 feet from the nearest point of each unit.

E. SPECIAL REQUIREMENTS:

1. All vending machine companies shall provide and service recycling containers for the recycled beverage containers collected wherever vending machines are provided.

2. The recycling and trash enclosure shall be designed to allow 18 feet of overhead clearance whenever crane-lifted dome recycling containers will be used. The concrete apron shall be increased to 15' wide and 20' long whenever a crane-lifted dome recycling container will be used.

3. Residential developers and property owners are encouraged to include recycling space or systems within the residence; such as roll-out drawers below the sink for recycling containers; fire-proof, cleanable, secure chutes from the living space to the garage containers, etc.

4. Restaurants, bars, and food establishments are encouraged to use reusable soda cannisters whenever possible instead of individually packaged glass bottles and cans.

F. EXISTING DEVELOPMENT REGULATIONS: The following regulations shall apply to all existing development that is multi-family residential with 5 units or more, commerical, office, industrial, or public/ quasi-public uses.

1. Existing Trash Enclosure: If the existing development has an existing trash enclosure, the required recycling containers shall be located inside the trash enclosure. The required recycling containers are those listed in the use chart in Section 34-C.

   a) If it is not possible to locate the required recycling containers in the trash enclosure, the recycling containers shall be located adjacent to the trash enclosure.

2. No Existing Trash Enclosure: If the existing development does not have an existing trash enclosure, the required recycling containers shall be located adjacent to the existing dumpster or other trash container.

3. Landscaping: The perimeter of the recycling and trash enclosure shall be planted with landscaping, including a combination of shrubs and/or climbing evergreen vines. ** Add discretionary language for projects where enclosure is a long way from irrigating sources. **

4. Waiver of Parking Requirement: In order to meet the required recycling and trash enclosure or container volume requirement, an existing development may use one parking space for the location of the recycling containers, provided the enclosure or containers meet the design specifications in Section 34.D.

   a) A parking space that has been converted to recycling container area must be marked for recycling and must be adequately barricaded to prevent use as a parking space.

5. Educational Signs: Signs shall be posted on each container listing which material shall be disposed of in that container. General instructions about the benefits of recycling and how to recycle shall be posted in a visible location for the container users. The name and phone number of the person responsible for maintaining the containers must be posted. Any sign visible from outside the enclosure shall be no larger than 4 square feet.

6. Setbacks: No recycling or trash enclosure or container shall be located in any required setback area.

7. Distance of Recycling Containers from Multi-Family Units: Each recycling and trash enclosure within a multi-family residential development shall be no greater than 250 feet from the nearest corner of each unit.

8. Time Period for Compliance: The property owner of each existing development shall have one year from notification by the City of Sacramento to implement the addition of the required recycling containers and the required modification of the trash enclosure and screening.

G. VARIANCE, APPEALS, AND ENFORCEMENT: If compliance to the Recycling Program, the Volume Requirement, the Materials to Be Recycled, and the Design Guidelines results in an unnecessary hardship to the property owner of a new or existing development, a Planning Director's Variance may be requested. Section 14 specifies the Variance procedure. The Building Division staff enforces the compliance of new development. The Neighborhood Services Division enforces the continued compliance of new and existing development. Section 19 outlines the Enforcement authority. Section 18 outlines the Appeal procedure.

SECTION 34.1: REVERSE VENDING MACHINES, MOBILE RECYCLING UNITS, AND SMALL COLLECTION FACILITIES

A. PURPOSE

This section is designed to provide for the redemption and recycling of reusable materials at locations which are compatible with surrounding land uses. In addition, this section is designed to reduce litter and increase the recycling of reusable materials.

B. PERMITS REQUIRED

No person shall place, construct or operate or permit the placement, construction or operation of any recycling facility without first obtaining a permit pursuant to the provisions set forth in this Section. Recycling facilities may be permitted as set forth in the following table.

Type of Facility	Zones Permitted	Permit Required
Reverse Vending Machines (meeting the standards of paragraph D.1.)	SC, C-1, C-2, C-3,C-4, M-1, M-2, M-1(S), M-2(S)	Administrative (must comply to Sec. 34.1.D.1)
Small Recyclable Collection Facility (other than Reverse Vending Machines meeting the standards of paragraph D.1)	SC, C-1, C-2 C-3, C-4, M-1, M-2, M-1(S), M-2(S)	Administrative (must comply with Sec. 34.1.D.2)
Large Recyclable Collection Facility	C-4	Planning Director's Special Permit
Large Recyclable Collection Facility or Recycled Material Recovery Facility (except a Composting Facility)	M-1, M-2, M-1(S), M-2(S)	Administrative (must comply with Sec. 34.1.D.3)
Composting Facility	A	Planning Director's Special Permit
Composting Facility	M-1, M-2, M-1(S), M-2(S)	Planning Commission Special Permit

C. PERMITS FOR MULTIPLE SITES

A single Administrative or Special Permit may be granted to allow more than one reverse vending machine installation or small collection facility located on different sites under the following conditions:

1. The operator of each of the proposed facilities is the same;

2. The proposed facilities are determined by the Planning Director to be similar in nature, size and intensity of activity; and

3. All of the applicable criteria and standards set forth in D. below are met for each such proposed facility.

D. CRITERIA AND STANDARDS

Those recycling facilities permitted with an Administrative Permit shall meet all of the criteria and standards listed below. Those recycling facilities permitted with a Planning Director's Special Permit shall meet the criteria and standards, provided the Planning Director may modify these standards as an exercise of discretion upon a finding that such modifications are reasonably necessary in order to implement the general intent of this Section. Those recycling facilities permitted with a Planning Commission Special Permit shall meet the criteria and standards, provided the Planning Commission may approve additional conditions as are reasonably necessary in order to implement the general intent of this Section.

The criteria and standards for recycling facilities are as follows:

1. Reverse Vending Machines

Reverse Vending Machines meeting the following standards do not require discretionary permits. Reverse Vending Machines shall not require additional parking spaces for recycling customers and may be permitted in all Commercial and Industrial zones provided that they comply with the following standards:

a. Shall be established in conjunction with a Commercial use which is in compliance with the Zoning, Building and Fire Codes of the City of Sacramento;

b. Shall be located within 30 feet of the entrance to the Commercial structure and shall not obstruct pedestrian or vehicular circulation;

c. Shall not occupy parking spaces required by the primary use and shall be placed on the apron of the host facility when possible;

d. Shall occupy no more than 50 square feet of floor space per installation, including any protective enclosure, shall be no more than eight feet in height, and shall consist of no more than one set of machines per host facility;

e. Shall be constructed of durable waterproof and rust proof material;

f. Shall be clearly marked to identify the type of material to be deposited; operating instructions and the identity and phone number of the operator or responsible person to call if the machine is inoperative;

g. Shall have a sign area of a maximum of four square feet per machine, exclusive of operating instructions;

h. Shall be maintained in a fully functioning, litter-free, dust-free condition on a daily basis;

i. Shall not have a noise level that exceeds California Occupational Safety and Health Association standards and City/County Noise Ordinance;

j. Operating hours shall be at least the operating hours of the host use; and

k. Shall be illuminated to ensure comfortable and safe operation if operating hours are between dusk and dawn.

2. Small Collection Facilities

Small Collection Facilities may be sited in Commercial and Industrial zones with Administrative approval provided they comply with the following conditions:

a. Shall be established in conjunction with an existing Commercial use or Community Service Facility which is in compliance with the Zoning, Building and Fire Codes of the City of Sacramento;

b. Shall be no larger than 500 square feet, and occupy no more than five parking spaces not including spaces that will be periodically needed for removal of materials or exchange of containers. No parking spaces required for the primary host use may be occupied by the facility;

c. Shall be set back at least ten (10) feet from any street or building or shall not be located in any required setback and shall not obstruct pedestrian or vehicular circulation;

d. Shall accept only glass bottles, metals, plastic containers and papers;

e. Except for bulk reverse vending machines, shall use no power-driven processing equipment;

f. Shall use containers that are constructed and maintained with durable waterproof and rust proof material, covered when site is not attended, secure from unauthorized entry or removal of material and shall be of a capacity sufficient to accommodate materials collected and collection schedule;

g. Shall store all recyclable material in containers or in themobile center vehicle and shall not leave materials outside of containers when attendant is not present;

h. Shall be maintained free of litter and any other undesirable materials, and mobile facilities, at which truck or containers are removed at the end of each collection day, shall be swept at the end of each collection day;

i. Shall not exceed noise levels of 55 dBA as measured at the property line of Residentially zoned or occupied property, otherwise shall not exceed 70 dBA;

j. Attended facilities located at community service sites shall be in operation only during the hours between dawn and dusk; and facilities located within 100 feet of a property zoned or occupied for Residential use shall operate only during the hours between 9:00 a.m. and 7:00 p.m.;

k. Containers for the 24-hour donation of materials shall be at least 50 feet from any property zoned or occupied for Residential uses unless there is a recognized service corridor and acoustical shielding between the containers and the Residential use;

l. Containers shall be clearly marked to identify the type of material which may be deposited; the facility shall be clearly marked to identify the name and telephone number of the facility operator and the hours of operation and display a notice stating that no material shall be left outside the recycling enclosure or containers;

m. Materials shall be removed from the facility on a routine basis.

n. Signs may be provided as follows:

   1) Recycling centers may have identification signs with a maximum of 20 percent per side or sixteen (16) square feet, whichever is smaller, in addition to information signs required in Section D.2.l.;

   2) Signs must be consistent with the character of the location;

   3) Directional signs, bearing no advertising message, may be installed which are consistent with Sign Ordinance regulations if necessary to facilitate traffic circulation, or if the facility is not visible from the public right-of-way; and

   4) The Planning Director may authorize increases in the number and size of signs upon findings that it is compatible with adjacent businesses.

o. The facility shall not impair the landscaping required for any concurrent use by this Title or any permit issued pursuant thereto;

p. No additional parking spaces will be required for customers of a small collection facility located at the established parking lot of a host use. One space will be provided for the attendant, if needed;

q. Mobile recycling centers shall have an area clearly marked to prohibit other vehicular parking during hours when mobile center is scheduled to be present; and

r. Occupation of parking spaces by the facility and by the attendant shall not reduce available parking spaces below the minimum number required for the primary host.

3. Large Collection Facility or Material Recovery Facility

Large collection facilities or material recovery facilities may be sited in Industrial zones with Administrative approval or in the Heavy Commercial zone with a Planning Director's Special Permit provided they comply with the following conditions:

a. Shall not be located in any setback area and shall meet parking requirements as set forth for warehouse uses in Section 6-A-14.

b. Shall not accept material to be composted.

c. Shall store all recyclable material in containers, within an on-site building, or behind a screened area.

d. Shall be screened from the front of the property with fencing and landscaping.

e. Shall not exceed noise levels of 55 dBA as measured at the property line of Residentially zoned or occupied property, otherwise shall not exceed 70 dBA.

f. Operating hours shall not exceed 8 A.M. to 7 P.M. when located within 200 feet of a Residentially zoned or occupied property.

g. The facility shall not impair any required landscaping.

h. Signs may be provided as follows:

1) Signs must meet the requirements in the Sign Ordinance for the zone in which the facility is located;

2) Signs must be consistent with the character of the location;

3) Directional signs, bearing no advertising message, may be installed which are consistent with Sign Ordinance regulations if necessary to facilitate traffic circulation, or if the facility is not visible from the public right-of-way; and

4) The Planning Director may authorize increases in the number and size of signs upon findings that it is compatible with adjacent businesses.

4. Composting Facility

Composting facilities may be sited in Industrial zones with a Planning Commission's Special Permit or in an Agriculture zone with a Planning Director's Special Permit provided they comply with the following conditions:

a. Composting facilities located in the Agriculture zone must have a 50' front setback from the public right-of-way.

b. Composting facilities located in the Agriculture zone may provide the following signs:

1) One monument sign not to exceed 12' high and not to exceed the overall size of one square foot for every one linear frontage foot or 200 square feet, whichever is smaller.

c. Composting facilities in the Industrial zones must meet the same requirements as the Large Collection and Material Recovery Facilities (Section 34.1-D-3), except:

1) condition b in Section 34.1-D-3 does not apply, and

2) the composting facility cannot be closer than 500 feet to an adjacent Residentially zoned or occupied property.

E. DENIAL OF PERMIT

In order to deny a permit, the Planning Director or Planning Commission shall make the following finding:

That the individual facility would be detrimental to the public health, safety and welfare.

(Ordinance No. ***, date)

ATTACHMENT F

DEPARTMENT OF
PUBLIC WORKS

SOLID WASTE DIVISION

CITY OF SACRAMENTO
CALIFORNIA

921 TENTH STREET
SUITE 500
SACRAMENTO, CA
95814-2715

916-449-5757

DAVID A. PELSER
SOLID WASTE
DIVISION MANAGER

March 13, 1990

Transportation and Community Development/
Budget and Finance Committees
Sacramento, California

Honorable Members in Session:

SUBJECT: Recycling at City Facilities

SUMMARY

The Solid Waste Advisory Committee recommended the implementation of recycling at all City facilities. This report considers how to implement such a program and recommends staff be directed to include consideration of such a program in future proposed budget submittals.

BACKGROUND

On November 14, 1990, staff submitted a report on recycling at City facilities (copy attached) and recommended the report be transmitted to the Solid Waste Advisory Committee and other interested agencies for review and comment. Since then, two public educational workshops on recycling have been conducted. This report did not generate much interest at the workshops, and no written comments were received. The few verbal comments made at the workshops generally indicated a positive response to the concept of conducting waste audits of City facilities as the first step in developing waste reduction and recycling strategies at City facilities.

FINANCIAL DATA

The attached report originally submitted on November 14, 1989 provides a proposed budget of $70,000 for fiscal year 1990-91 for Phase I of an implementation plan to provide for recycling at City facilities.

POLICY MATTERS

The basic policy issue is the provision of various recycling programs at all city owned facilities and the funding of such programs. Providing such programs will contribute to meeting the City's waste reduction and recycling goals, will provide a positive example to other businesses in the City, and will add to the experience and knowledge of City staff in waste reduction and recycling strategies which could be shared with others.

MBE/WBE

One of the collection methods analyzed for recycling at City facilities is the modification of either existing janitorial contracts or the issuance of new janitorial contracts to include recycling. The standard MBE/WBE preferences would be applied to the evaluation of bids for these services.

RECOMMENDATION

Staff recommends the Joint Committees direct staff to include in future proposed budgets consideration of initiating waste audits and waste reduction/recycling activities at City facilities.

Respectfully submitted,

DAVID A. PELSER
Solid Waste Division Manager

Recommendation Approved:

SOLON WISHAM, JR.
Assistant City Manager

Approved:

MELVIN H. JOHNSON
Director of Public Works

Contact Person to
Answer Questions:

DAVID A. PELSER, SOLID WASTE DIVISION MANAGER
449-2043

March 13, 1990
All Districts

Attachment F

DEPARTMENT OF
PUBLIC WORKS

SOLID WASTE DIVISION

CITY OF SACRAMENTO
CALIFORNIA

1231 I STREET
SUITE 103
SACRAMENTO, CA
95814-2935

916-449-5757

November 14, 1989

Transportation and Community Development/
Budget and Finance Committees
Sacramento, California

Honorable Members in Session:

SUBJECT: Recycling at City Facilities

SUMMARY

The City/County Solid Waste Advisory Committee recommended the implementation of recycling at all City facilities. The attached report, prepared jointly by Staff of the Departments of Public Works and General Services, concludes that recycling can be implemented at most City facilities to augment the recycling currently being done at several City complexes.

BACKGROUND

Resolution 89-685, approved by the City Council on August 29, 1989 referred Exhibit F of the City/County Solid Waste Advisory Committee Phase I Recycling Report to staff for review, analysis and recommendation. The attached report outlines the staff recommendations for recycling at City facilities.

FINANCIAL DATA

The attached report provides a proposed budget for fiscal year 1990-1991 for Phase I of an implementation plan to provide for recycling at City Facilities. Please see page 5 of the attached report.

POLICY CONSIDERATIONS

The basic policy issue is the provision of various recycling programs at all City owned facilities and the funding of such programs.

MBE/WBE

One of the collection methods analyzed for recycling at city facilities is the modification of either existing janitorial contracts or the issuance of new janitorial contracts to include recycling. The standard MBE/WBE preferences would be applied to the evaluation of bids for these services.

RECOMMENDATION

Staff recommends the Joint Committees accept the attached report and direct staff to:

1. Transmit the report to the City/County Solid Waste Advisory Committee and other interested public agencies for review and comment in conjunction with other related recycling reports presented on this day.

Respectfully submitted,

DAVID A. PELSER
Solid Waste Division Manager

Recommendation Approved:

SOLON WISHKAM JR.
Assistant City Manager

Approved:

MELVIN H. JOHNSON
Director of Public Works

Contact Person to Answer Questions:

DAVID A. PELSER, Solid Waste Division Manager
449-2043

November 14, 1989

All Districts

RL:cj
RL1-CC6.B

RECYCLING AT CITY FACILITIES

Prepared By:
City of Sacramento
Department of Public Works
Solid Waste Division
and
Department of General Services

November 1989

PROJECT STAFF

Gary Van Dorst - Waste Reduction Coordinator
Dennis Kerhulas - Senior Buyer
John Grupe - Administrative Assistant

262

I. Introduction

Existing Conditions:

Exhibit F of the City/County Solid Waste Advisory Committee Phase I Recycling Report pertaining to recycling at City facilities suggests that City government should set the example by recycling its own waste stream. The City of Sacramento already conducts recycling at selected City facilities.

The City has in place a white office paper recycling program occurring at all City facilities where it is feasible. The program excludes secured facilities such as jails and police stations as well as those facilities where a limited paper usage makes the program infeasible. This program reaches approximately 90% of all office workers.

The City recycles newsprint and beverage containers at City Hall in an arrangement with the Sacramento Local Conservation Corps (SLCC). There are also many informal recycling arrangements in offices throughout the City. All of the above programs can be expanded.

Overview

The initial task of expanding a City facility recycling program would be a waste audit of all facilities where waste is generated or stored. The second task is to identify methodologies for collection of recycling materials. The third task is to implement the recycling at City facilities, in phases if necessary. Finally, continued technical support, monitoring, and reporting of quantities of materials recycled will be required.

This report analyzes three approaches to recycling at all City facilities. They are: 1) collection by non-profit organizations, 2) collection through custodial service contract, and 3) collection by municipal workers. This report describes each approach and its relationship to the other approaches in a prioritized hierarchy of tasks.

II. Approaches to Collecting Recyclables at City Facilities

Model Approach A: Collection by Nonprofit Organization:

Exhibit F of the Recycling Implementation Plan suggests the use of nonprofit groups for the recycling of City facilities whenever possible. There is precedence for using nonprofits to recycle City facilities. City Hall is currently using the SLCC to recycle beverage containers and newsprint. Sponsored by the City of Sacramento and the State Department of Conservation, the SLCC collects beverage containers and newsprint on a weekly basis. Containers are supplied and located throughout the facility by the Solid Waste Division. SLCC labor is funded by the State Department of Conservation under a grant.

The above arrangement for recycling at City facilities can be evaluated to determine whether it should be expended. Staff can also evaluate other local self reliance organizations to provide acceptable recycling services for the facility in question. The waste audit will identify the type and quantity of containers required. Containers designed to minimize loss of materials through scavenging will be supplied by the City.

Approach B: Collection Through Janitorial Contract

The City of Sacramento contracts out janitorial services for a large number of its offices. Using our successful program of recycling white office paper as a model for recycling the office waste stream, it may be possible to include the recycling of materials such as cardboard, newsprint and beverage containers in the issuance of new custodial service contracts. It may also be possible to amend existing contracts. Although there would be some added cost attached to contracts that include recycling more materials, existing custodial staff may be best suited for the purpose of transporting materials from smaller containers inside individual offices to larger collection bins either outside or more centrally located within office complexes.

Approach C: Municipal Collection

It may not be feasible to recycle all City facilities using either nonprofit organizations or custodial services. Custodial services do not operate at many facilities such as parks. Even where it is possible to use custodial services to collect recyclables from offices for placement in larger exterior bins, the larger bins will have to be collected for processing and transportation to market.

Under a phased plan, municipal collection personnel may be used at those facilities where it has been impossible to make use of Approaches A and B.

III. Phased Implementation

This report provides a proposed budget for the first year of operation only. It includes another Waste Reduction Coordinator position and expenses associated with the purchase of containers

for office complexes. Under Phase I of this plan for implementation of a City Facility Recycling Program, the Waste Reduction Coordinator will conduct waste audits of all City Facilities. Second, the Coordinator will evaluate contracting with nonprofit organizations and local self-reliance groups wherever possible.

BUDGET

Waste Reduction Coordinator (1 FTE) (includes all benefits, office space, travel, supplies and expenses)	$55,000
Containers, printing, site improvements	$15,000.00
TOTAL	$70,000.00

Phase II costs cannot be estimated until after Phase I has been planned for implementation. Budgeting for the expansion or modification of current custodial contracts will not be possible until those facilities recycled by nonprofit organizations and local self-reliance groups have been identified. It is predicted that funds for Phase II could be budgeted in Fiscal Year 1991/1992.

Phase III will consist of municipal collection. It may be possible to budget for this third and final phase for Fiscal Year 1991/1992 if all facilities to be recycled by nonprofit organizations and existing custodial services have been identified prior to Staff submittal of 91/92 budgets.

IV. Recommendations and Conclusions

The phased approach for this program of recycling City facilities is one which is designed to recognize the priority recommendation of the Recycling Subcommittee's report to use nonprofit labor wherever possible in conjunction with minimizing the expense of the City for the implementation of a program. First year

implementation is held to the expense of one Waste Reduction Coordinator and containers. Succeeding years' budgets cannot be predicted without knowing to what extent nonprofit labor or custodial contracts will be utilized.

Once a program is in place, it may be possible to cut back on the amount of Staff time required to maintain it. Possibly by the end of the second or third year, the staff time allocated could be reduced to 0.5 FTE (Full Time Equivalent) Waste Reduction Coordinator.

Attachment G

DEPARTMENT OF
GENERAL SERVICES

OFFICE OF THE DIRECTOR

CITY OF SACRAMENTO
CALIFORNIA

5730 - 24TH STREET
BUILDING FOUR
SACRAMENTO, CA
95822-3699

916-449-5548

DIVISIONS:

COMMUNICATIONS
FACILITY MANAGEMENT
FLEET MANAGEMENT
PROCUREMENT SERVICES

PS:Admin:90018:RDR:rr

March 13, 1990

Joint Budget and Finance/Transportation and Community Development Committees

Honorable Members in Session

SUBJECT: Response to Resolution 89-685, Exhibit G, Resolution Favoring the Procurement of Recycled Goods

SUMMARY

The Dept. of General Services has been asked to review, analyze and provide recommendations for Resolution 89-685, Exhibit G, "Establishing a City Procurement Policy Favoring Recycled Goods".

BACKGROUND

This report examines the components of the proposed procurement policy, by section.

Section 1: Ten Percent Preference

Because of the uncertainties in the recycled market, the Procurement Services Division feels it may be more expedient and cost effective for the City to align with existing standards legislated by the State of California. Currently, the State offers a five percent (5%) preference for vendors using recycled paper products. In light of the fact that the City offers a one and one-half percent (1.5%) local business tax preference and will soon offer a five percent (5%) small business preference, it is recommended that the Resolution's preference be modified to five percent (5%) for vendors using recycled products. In addition, if the City were to utilize the State's contract for recycled paper, having similar preferences would be advantageous.

Section 2: Review of Specifications and Bidding Process

Rather than conduct a study of the magnitude outlined in Section 2(b) the following is recommended:

I. Performance standards will be identified for the items solicited in each bid. Quotations for both new and recycled goods will be solicited whenever possible.

II. The bid quotations will be analyzed for performance and cost factors (including bid preferences) and selection of the recycled or non-recycled goods will be made accordingly.

Section 3: Target Procurement for Paper Products

The resolution's proposed percentages for recycled paper procurement exceed the State's requirements. Given the currently limited resources for recycled paper it may be prudent on the City's part to not exceed the State's stated capability. Listed below are the proposed City percentages and the State's Department of General Services legislated percentages for future recycled paper procurement:

City	State
January 1, 1991 - 40%	January 1, 1990 - 35%
January 1, 1993 - 50%	January 1, 1994 - 40%
January 1, 1995 - 60%	January 1, 1996 - 50%

The following goals are recommended for the City:

January 1, 1991 - 35%
January 1, 1993 - 40%
January 1, 1995 - 50%

(State Reference: Calif. Public Contract Code, Section 12162 <F>).

While it appears that meeting the above goals is feasible, the following problems have been identified:

A) It has not been demonstrated that recycled paper can meet the archival requirements established by the City Clerk's Office (see " Attachment A"). The State is currently conducting research in this area and has yet to establish any conclusions. If the recycled paper is not found to meet archival requirements, all official Council Agendas will have to be prepared on non-recycled stock.

B) In the past, the City's Data Management Department has found that using recycled computer paper has caused difficulties in the processing of their documents. Computer paper represents a significant percentage of the City's paper usage. If recycled paper cannot be used it will affect the City's ability to reach the stated goals.

C) The Central Services Section, which handles the City's printing needs, has not been able to find a brand of recycled paper which can effectively be run through the City's high speed copier. While recycled paper has not presented a problem when run on the offset presses, the intense heat of the high speed copiers causes the paper to crease. Additional problems have been identified with recycled paper products that include post-consumer waste.

Section 4: Certification

As written, the certification section applies to all bids. Implementing this would seriously inhibit the informal buying process and effectively end all "telephone" buying. If, however, this requirement were initially limited to formal bids (purchases over $25,000), the procurement process could continue to meet its present turnaround time for all informal and discretionary purchases. The formal bid process lends itself to the certification process described. Another consideration is that vendors may be more likely to comply with certification requirements for the large dollar contracts. The sentence regarding certification could be amended to read:

> In formal contracting for goods, materials and products in which the vendor states that the item(s) in question have recycled content, the City shall require that the vendor or contractor certify the percentage of recycled material in each good or product.

As the program progressed, staff could evaluate and report on the feasibility of extending the certification process to informal bids.

Section 5: Attachment of Resolution to Solicitations for Bids

It is recommended that initially, instead of attaching the Recycling Resolution to all bid solicitations, an affidavit be attached to all formal bids. This document would detail the Council's goals and preferences and state the requirements for qualifying as a vendor of recycled goods. A similar document, the South Africa Divestment Affidavit, is currently being attached to all formal bids.

As stated above, as the program progressed, staff could evaluate and report on the feasibility of extending the certifications and preferences to informal bids.

Section 6: Reporting

In order to assess the financial impact of the recycling preference and progress towards the recycling goals, Procurement Services will prepare reports using the FOCUS reports of the City's Local Government Financial System (LGFS) at least twice a year. Staff will also, in conjunction with Finance Department, assist the Solid Waste Division in developing a City-wide reporting format.

FINANCIAL DATA

It is difficult to measure the potential direct and indirect costs of a policy that favors the procurement of recycled goods. With the institution of preferences, the City will possibly pay as much as five percent (5%)--or ten percent (10%) if the original proposal is maintained-- more in some instances to procure recycled goods.

Based on initial research, it may be necessary in many instances to purchase from vendors outside the Sacramento area to obtain recycled goods and materials (Reference: Recycled Products Guide, American Recycling Market Inc. This is the only guide of this nature known to the City's Procurement Services Division.) Doing so may well remove City dollars from the Sacramento area and counter the Council's stated interest in contracting with local businesses.

Indirect costs would be incurred in additional Procurement staff time required to add recycled requirements to bid specifications and bidding processes for goods, materials, and supplies. In order to address the additional staff time which will be required to address the elements identified in the procurement policy favoring recycled goods, the Procurement Services Division is requesting that a Buyer Trainee be added to the Purchasing Section in the FY 1990-91 budget process. The Buyer Trainee will be used to handle routine purchasing functions, thereby allowing the more experienced buyers to address the elements required by the City's special procurement initiatives (e.g. recycled goods; minority, women and small business programs). Buyers will need to develop expertise in developing recycled product specifications and in researching, locating and certifying recycled goods and vendors.

POLICY MATTERS

The issue of balancing preferences must also be considered. The City has an existing preference for businesses located within the City limits of one and one half percent (1.5%) and a five percent (5%) bid preference has been approved for the Small Business Economic Opportunity Program. If the ten percent (10%) preference for vendors using recycled products is adopted a sixteen and one half percent (16.5%) preference is possible. If the recommended five percent (5%) preference is adopted the the maximum preference would be eleven and one half percent (11.5%). As stated above, the five percent preference also allows the City to be consistent with the State's preference for recycled paper.

MBE/WBE

If vendors outside the Sacramento area have to be used extensively to procure recycled goods, local M/WBE businesses could be negatively impacted.

RECOMMENDATIONS

It is recommended that the following changes be made to the proposed City Procurement Policy Favoring Recycled Goods:

1. That the City adopt the five percent (5%) preference established by the State in lieu of the ten percent (10%) preference proposed in the Council's Resolution;

2. That the five percent (5%) preference for vendors using recycled goods and materials be based on meeting performance standards for each bid;

3. That the target procurement goals for paper products be revised to be more consistent with the State's goals;

4. That the certification section apply to formal written bids only and that the text be amended to read "In formal contracting for goods, materials and products in which the vendor states that the item(s) in question have recycled content, the City shall require that the vendor or contractor certify the percentage of recycled material in each good or product.";

5. That an affidavit detailing the recycling program requirements be attached to all formal bid solicitations.

6. That reporting mechanisms be set up by General Services and Finance in cooperation with Solid Waste to track City-wide procurement of recycled goods and materials as well as vendors who use recycled materials; and

7. That an additional staff position, Buyer Trainee, be considered in the FY 1990-91 budget process. This position will handle routine purchasing functions, thereby allowing the more experienced buyers time to address the elements of the recycled procurement policy and other special procurement policies (minority, women and small business programs).

Respectfully submitted,

FRANK MUGARTEGUI
Director of General Services

Recommendation Approved:

SOLON WISHAM JR.
Assistant City Manager

Contact Person to Answer Questions:

March 13, 1990

ROBBIN RANDOLPH, PROCUREMENT SERVICES MANAGER
449-5551

ATTACHMENT A

5

OFFICE OF THE
CITY CLERK

VALERIE A. BURROWES
CITY CLERK

ANNE J. MASON
ASSISTANT CITY CLERK

JANICE M. BEAMAN
DEPUTY CITY CLERK

CITY OF SACRAMENTO
CALIFORNIA

CITY HALL
ROOM 304
915 I STREET
SACRAMENTO, CA
95814-2671

ADMINISTRATION
916-449-5799

OPERATION SERVICES
916-449-5426

SPECIALIZED SERVICES
916-449-8200

October 24, 1989

MEMORANDUM

TO: Reggie Young, Deputy Director - Office of Field Services

FROM: Valerie Burrowes, City Clerk

SUBJECT: Archival Standards Relating to Paper and Ink

The City Clerk's Office requests that recycled paper, copy machine toner and inked ribbons not be purchased and used in the City of Sacramento because proven archival standards have not been established. Archival records may be defined as "the non-current records of an organization which have enduring value". They are records worthy of permanent preservation because of the importance of their information for continuing administrative, legal, or fiscal purposes, or for historical or other research. As this office does not as yet have a program to transfer an image onto disk or film, all current and non-current records have an enduring value. The Federal Government is currently working on laws which will specify standards for paper, toner and ink to be used in the creation of permanent records.

This office has checked with the California State Archives and was informed that a study, which is available through the Archives' Information Center, concluded that standards for paper permanence included "a pH of 7.5 to 10.3, at least a 2 percent calcium carbonate reserve in the paper, and the absence of lignin or groundwood pulp". Specifications for papers meeting these standards have been published by the American National Standards Institute (ANSI) and the American Society for Testing and Materials (ASTM).

As for inked ribbons, several inks are considered to have long-term stability when used in combination with permanent papers, including inks with a carbon black base. Of equal concern, however, are the inks and toners used in typewriter ribbons, copy machines and all computer printers. A useful reference for the selection of archival quality inks, toners,

and the reprographic process is the Printing Ink Manual, 3rd edition, 1979, London: Northwood Books.

This office has a legal opinion from the City Attorney stating that, Resolutions, Ordinances, minutes, agreements and contracts will always be permanent records (hard copy) regardless what type of record retention medium is used. Therefore, it will not be feasible for the City to use recycled materials when dealing with Council items or the above permanent records. Further, if it is purchased, employees will, not knowingly, use whatever is in the machine and not change the recycled material to permanent record material when preparing Council items, agreements or contracts.

cc: Robin Randolph
Dennis Kerhulas
Walt Slipe

CCO: S9031

ATTACHMENT H

OFFICE OF THE
CITY ATTORNEY

JAMES P. JACKSON
CITY ATTORNEY

THEODORE H. KOBEY, JR.
ASSISTANT CITY ATTORNEY

SR. DEPUTY CITY ATTORNEYS:
SAMUEL L. JACKSON
WILLIAM P. CARNAZZO
GARLAND E. BURRELL, JR.

CITY OF SACRAMENTO
CALIFORNIA

921 TENTH STREET
7TH FLOOR
SACRAMENTO, CA
95814-2694

916-449-5346

DEPUTY CITY ATTORNEYS:
LAWRENCE M. LUNARDINI
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RICHARD F. ANTOINE
TAMARA MILLIGAN-HARMON
RICHARD E. ARCHIBALD
KATHLEEN L. McCORMICK
TIMOTHY N. WASHBURN
SABRINA M. THOMPSON

March 13, 1990

Budget and Finance/Transportation
and Community Development Committees
Council Chambers
Sacramento, CA 95814

RE: **Proposed Resolution Directing City Lobbyist to Convey City's Support for State Legislation which Promotes Recycling**

Honorable Members in Session:

SUMMARY

The City Attorney's office has been directed to review and comment on the Solid Waste Advisory Committee's (SWAC) proposed resolution "Directing City Lobbyist to Convey City's Support for State Legislation which Promotes Recycling."

BACKGROUND

SWAC's proposed legislative policy is expressed as follows:

> II. Legislative Policy
>
> The City Council shall express to the Legislature, the Governor, the Congress, or the President, as appropriate, the Council's support of proposed statutes that would facilitate implementation of the policies and plans recommended by the City recycling sub-committee and adopted by the City Council, in order to reduce the waste stream, to reuse materials, and to recycle renewable and non-renewable resources.

Currently, the City's policy on support of pending county, state and federal legislation is outlined in the "Organization and Procedures Manual on Legislative Matters Affecting the City of Sacramento". This document is dated March, 1977 and was adopted by resolution. The procedures manual directs the City legislative representative (LR) to review bills that directly or indirectly affect the City of Sacramento. The LR then prepares a notice and brief description of the measure and circulates this among the affected City departments. Those departments then have 15 working days to prepare a brief factual report on the significant features of the bill and the possible effects upon the department. Those reports are submitted to the LR who then brings the matter before the Council Committee on Law and Legislation with a recommendation as to whether or not to support the bill. The Committee then votes on whether or not to recommend that the Council express its support for the bill.

The LR, the Committee, and the City Council, when making the recommendations and decisions on whether to support the various bills, are guided by the policy guidelines outlined in the procedures manual. Currently those guidelines state the following regarding Solid Waste management:

> 7.3 Environmental Protection.
>
> It shall be the policy of the City of Sacramento to support legislation which will:
> ...
> (d) Establish practical environmental standards in the areas of land use, air quality, water quality and solid waste management. Such standards should be based on detailed technical data not requiring improvements beyond the state of current technology and recognizing the fiscal impact of compliance with these standards.

Additionally, there is a policy regarding energy conservation and development. This policy is stated as follows:

> 7.4 Energy Conservation and Development.
>
> It shall be the policy of the City of Sacramento to support legislation which will:

(a) Conserve our dwindling energy sources and develop alternate sources. The State should provide funding for programs to develop feasible methods of utilizing solar and other nonfossil energy sources. This effort should include incentives for private sector development as well as grants from federal and state government for public sector development efforts.

(b) Conserve existing energy sources by the establishment by the state of economically justified efficiency and utilization standards. These standards should recognize the fiscal impact of compliance with the proposed standards.

It is the recommendation of the City Attorney's office that the appropriate place for instituting a policy such as that outlined by the SWAC would be to amend the procedures manual to reflect the desired language. It is possible to construe the already stated policies as outlined above to include support for recycling measures. If, however, the City Council wishes to be more specific as outlined in the proposed resolution, the City Council should either modify or amend those already existing policies in the procedures manual, keeping the established procedure of circulating the pertinent bills through the affected City departments and having the Committee vote on those bills for recommendation to the City Council. In that manner, we can insure that no bill will inadvertently be supported which may have severe negative effects on any of the City departments.

FINANCIAL DATA

None.

POLICY CONSIDERATIONS

Established City policy mandates that proposed legislation be reviewed by affected City departments, the City Legislative Representative, and a Council Committee prior to the expression of City support. Guidelines exist which can be modified to reflect the proposed SWAC legislative policy. This change to City policy is outlined above.

MBE/WBE

None.

RECOMMENDATION

The City Attorney's office recommends that the City Council not adopt the SWAC's proposed resolution as formulated, but instead, should the Council choose to do so, direct this office to amend the Organization and Procedures Manual on Legislative Matters Affecting the City of Sacramento to reflect the policy suggested by SWAC.

Respectfully submitted,

JAMES P. JACKSON, City Attorney

Sabrina M. Thompson

SABRINA M. THOMPSON
Deputy City Attorney

CONTACT PERSON:

Sabrina M. Thompson, Deputy
City Attorney - 449-5346

March 13, 1990
All Districts

ATTACHMENT I

DEPARTMENT OF
PLANNING AND DEVELOPMENT

CITY OF SACRAMENTO
CALIFORNIA

1231 I STREET
ROOM 200
SACRAMENTO, CA
95814-2998

BUILDING INSPECTIONS
916-449-5716

PLANNING
916-449-5604

March 13, 1990

Budget and Finance Committee
Transportation and Community
Development Committee
Sacramento, California

Honorable Members in Session:

SUBJECT: Environmental Coordination for Recycling and Solid Waste Reduction

SUMMARY

The Environmental Services Division has analyzed the environmental review process for Solid Waste reduction mitigation measures that can be incorporated into the process. Those measures include requiring a plan for waste reduction and recycling and a review of the plan through the EIR or Negative Declaration.

BACKGROUND INFORMATION

Currently, all Environmental Impact Reports (EIR) contain a section regarding impacts to Public Services, which includes solid waste. To bring our environmental review in line with the proposed solid waste review programs, the Environmental Services Division will now require in the EIR Scope of Work a detailed plan indicating measures that all projects will incorporate in their design to both reduce the waste stream and to recycle material in accordance with City policy. Those projects which are not subject to an EIR but reviewed through the Negative Declaration process will contain, as part of the project, the means to reduce the waste stream and recycle materials, in accordance with design guidelines and zoning ordinance requirements. If the project does not provide such a plan, the project will not receive clearance until a plan is submitted and approved.

FINANCIAL DATA

If there is an identifiable increase in review cost, the added cost will be borne by the project proponent.

POLICY MATTER

This action is consistent with policies regarding the reduction of the waste stream and promotion of recycling.

MBE/WBE

Not applicable.

RECOMMENDATION

This item is for information only. No action is required at this time.

Respectfully submitted,

Carol Branan for
Michael M. Davis,
Director of Planning
and Development

Solon Wisham Jr.
SOLON WISHAM, JR.
ASSISTANT CITY MANAGER

MMD:LP

City-wide
March 13, 1990

Contact Person:
Sue Jeffery, Associate Planner
449-2037

EXHIBIT J

DEPARTMENT OF
GENERAL SERVICES

OFFICE OF THE DIRECTOR

CITY OF SACRAMENTO
CALIFORNIA

5730 - 24TH STREET
BUILDING FOUR
SACRAMENTO, CA
95822-3699

916-449-5548

DIVISIONS:

COMMUNICATIONS
FACILITY MANAGEMENT
FLEET MANAGEMENT
PROCUREMENT SERVICES

March 13, 1990

Joint Budget and Finance/Transportation and Community Development Committees

Honorable Members in Session

SUBJECT: **Response to Resolution 89-685, Exhibit J, Exploring Cooperative Purchasing Of Various Size Garbage Cans With Other Governmental Agencies including the City of San Jose**

SUMMARY

The Dept. of General Services has been asked to review, analyze and provide recommendations for Resolution 89-685, Exhibit J, regarding possible cooperative purchasing agreements with other governmental agencies, including the City of San Jose, for the acquisition of various size garbage containers.

At the Joint Committee's direction, two recycling education program workshops were held on the evenings of December 7, 1989 and February 1, 1990, to provide a forum for interested citizens/agencies to receive additional information from staff regarding relevant recycling issues and to provide their input to staff and subsequently to the Joint Committee on the proposed Recycling "package". Staff received no comments on Exhibit J.

BACKGROUND

In considering cooperative purchasing of garbage containers several concerns arise:

1) 10,000 garbage containers were recently purchased by the

City, completing the City's current automated waste collection system container requirements.

2) Due to their customized features (our specifications & the City's name on the containers), City of Sacramento garbage containers do not easily lend themselves to being "traded" with another governmental agency without incurring significant cost for refurbishment (cleaning/sanitizing) and re-identification of the containers. Such a trade would entail sending the containers back to the City's vendor for refurbishment and re-identification.

As requested, the City of San Jose was contacted about a possible cooperative purchasing arrangement. However, since their waste removal is contracted out to a private company (Waste Management, Inc.). Consequently, the City of San Jose does not have a need for garbage containers utilized by the City of Sacramento at this time.

The County of Sacramento was also contacted. They indicated that at present they are not interested in a cooperative purchasing agreement with the City for containers. However, they did express an interest in the possibility of a future agreement of this nature.

FINANCIAL IMPACT

Cooperative purchase of garbage containers required by the City with another governmental agency might result in some savings on future requirements. The advantage, if any, could only be determined when the quantity of the next City "buy" is known.

POLICY CONSIDERATIONS

When available purchasing staff will utilize cooperative purchasing procedures authorized by Section 57,402 of the City Code.

MBE/WBE

In the event of a future cooperative purchasing agreement full consideration will be given to M/WBE firms.

RECOMMENDATIONS

It is staff's recommendation to the Joint Committee not to pursue implementation of a cooperative purchasing agreement for garbage containers at this time, as the City has no current need in this area. When the Solid Waste's next

requirement for garbage containers comes about, staff will explore the possibility of cooperative purchasing with the State or another local agency.

Respectfully submitted,

FRANK MUGARTEGUI
Director of General Services

Recommendation Approved:

FOR SOLON WISHAM JR.
Assistant City Manager

Contact Person to
Answer Questions:

ROBBIN RANDOLPH, PROCUREMENT SERVICES MANAGER
449-5551

ADM9.248

ATTACHMENT K

DEPARTMENT OF
FINANCE

REVENUE DIVISION

CITY OF SACRAMENTO
CALIFORNIA

CITY HALL
ROOM 104
915 I STREET
SACRAMENTO, CA
95814-2696

916-449-5454

March 5, 1990
RA90044:LM:ldm

Joint Budget and Finance/Transportation
and Community Development Committee
Sacramento, California

Honorable Members in Session:

SUBJECT: **RECYCLING SERVICES AS A CONDITION OF COMMERCIAL SOLID WASTE COLLECTION PERMIT RENEWAL**

SUMMARY

It is requested that the Joint Committee concur and recommend the City Council allow staff 180 days to develop a procedure to verify that commercial waste haulers meet recycling goals established by the City Council.

BACKGROUND

On November 14, 1989, staff submitted a report on recycling services as a condition of commercial solid waste collection permit renewal. At the November 14, 1989 meeting staff recommended that the report be transmitted to the City's Solid Waste Advisory Committee (SWAC) for review and later comment at a public hearing. At that time, staff also recommended conducting a public educational workshop to inform the public, and interested agencies, of the rationale for staff's recommendations. Two recycling educational programs were held, one on the afternoon of December 7, 1989; the second workshop in the evening of February 1, 1990. Workshop participants did not object to recycling as a condition to obtaining a commercial refuse collector's permit as long as their reports on tonnage be kept confidential.

Prior to enactment of City ordinances to mandate commercial permittee recycling, City staff requires additional information. Additionally, several practical issues should be considered before proposing the conditions outlined in the Solid Waste Advisory Committee (SWAC) Phase I Report, Exhibit K.

First, the City should inventory all the commercial waste haulers operating in the City. Several commercial waste haulers operate in the City without permits.

Second, the City should survey the commercial waste haulers to obtain information about what data is available. For example, can the commercial haulers readily identify City accounts? Do the commercial haulers' routes cross

City/County lines? If so, reporting on the City recycling program may be difficult.

Third, can the City require companies to publicly release data concerning tonnage hauled and recycled? Would the public disclosure of tonnage picked up and recycled also provide competitors with proprietary information?

Meetings should be held between the licensed commercial waste haulers, the City's legal staff, Revenue Division staff, and Public Works Department staff to determine the most effective method(s) of ensuring commercial waste recycling.

FINANCIAL DATA

The financial impact of regulating commercial waste haulers cannot be determined at this time.

POLICY CONSIDERATIONS

If a determination is made to regulate the recycling activities of commercial waste haulers, it may be necessary to enact a funding mechanism to finance commercial recycling implementation.

MBE/WBE EFFORTS

Not applicable.

RECOMMENDATION

It is requested that the Joint Committee concur and recommend the City Council allow the Revenue Division and Public Works Department staff 180 days to meet with legal staff and commercial waste haulers to develop a procedure for verifying that commercial waste haulers meet the recycling goals established by City Council Resolution No. 89-685.

Respectfully submitted,

Louis Myles
Acting Revenue Manager

RECOMMENDATION APPROVED:

FOR SOLON WISHAM, JR.
ASSISTANT CITY MANAGER

CONTACT PERSON: Louis Myles, Acting Revenue Manager, 449-5724

March 13, 1990
All Districts

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