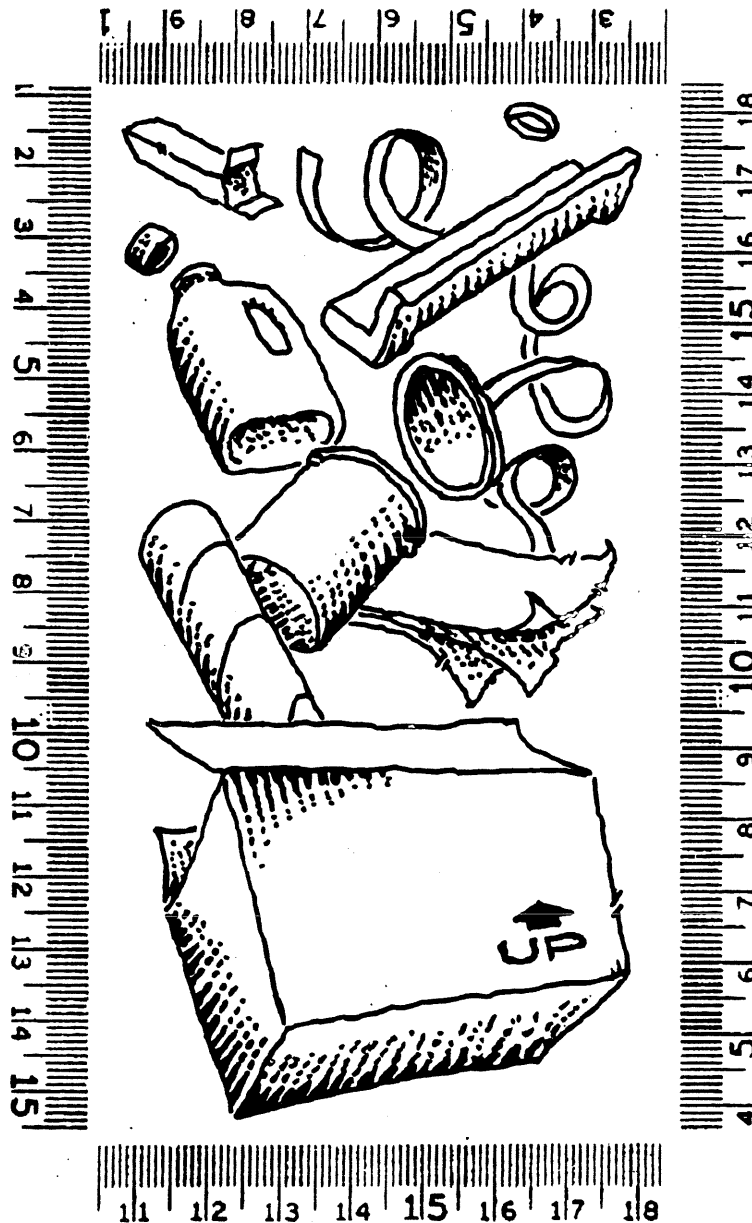


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REPORT ON

Packaging Discards

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MN Office of Waste Management • July 1993

Pursuant to 1992 Laws, Chap 593,
Article 1, Section 13 and coded as
Minnesota Statutes 115A.5501

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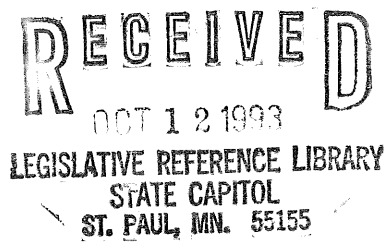
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Appendix A. Information Transmitted from the Minnesota Pollution Control Agency

Report Author:

Jim Chiles
Minnesota Office of Waste Management
1350 Energy Lane, Suite 201
St. Paul, MN 55108
(612) 649-5770
1 (800) 657-3843

Executive Summary



In 1992 the Minnesota Legislature passed a goal calling for a 25 percent voluntary reduction in packaging delivered to solid waste composting, incineration, refuse derived fuel and disposal facilities from 1992 to 1995 (Minn. Stat. § 115A.5501). Because it is a disposal-abatement goal, it can be met through any or all of the methods of recycling, reduction and reuse. The statute does not establish any consequences if the goal is not reached in 1995.

The statute assigns measurement and analytical duties to the Minnesota Pollution Control Agency (MPCA) and Metropolitan Council, and compilation and reporting to the Office of Waste Management (OWM). This document provides the Legislature with the OWM's first annual report.

Minnesota disposal and processing facilities reported receiving 2,683,833 of mixed municipal solid waste in 1992, a figure that averages to 1,220 pounds of discards per Minnesotan. **Packaging constituted 35 percent of this, for a figure of 427 pounds of packaging discards per person annually.**

When two additional adjustments not specified in the statute are made (waste exports to other states and recyclables removed from mixed waste at processing facilities) the per-capita packaging-discard figure is 441 pounds.

Because of the inherent variability of waste, the MPCA reports a considerable margin of error for its figure of 427 pounds. For commercially generated

waste, any one sample could indicate as little as 50 pounds or as much as 1,106 pounds of packaging per person. For waste that is residential in origin, this figure could range from 203 to 798 pounds.

Following are observations and recommendations from this year's report.

■ The packaging composition figure for 1992 is based on broad waste composition studies conducted by the MPCA and Metropolitan Council from 1990 through 1992. These were part of a research effort dating to the 1989 SCORE legislation. The SCORE project's sorts were not intended to produce a firm base year of information concerning the proportion of packaging in the waste stream, and the MPCA has had to make estimates as to the packaging component within each of the 31 sorting categories.

■ For the period 1993 through 1995, the Metropolitan Council has hired a consulting firm to conduct a four-season packaging sort each year. The Council is paying \$150,000 for the work out of the Metropolitan Abatement Account. The location of the sort is the Brooklyn Park Transfer Station in Hennepin County.

■ The MPCA has informed the Legislature that it has no appropriations to carry out additional waste composition studies in Greater Minnesota for 1993 or following years. The MPCA estimates that a packaging waste-composition effort in Greater Minnesota, conducted at two facilities for two weeks each, twice a year through 1995, would require an annual appropriation of \$150,000.

■ To ensure the best information for the money available, it may be advisable to amend the law to allow the Metropolitan Council and MPCA to sort less than four times yearly. It is not clear whether the agencies have this discretion now.

Chapter 1. Background of the Packaging Abatement Goal

Legislative goal

The 1992 Minnesota Legislature passed the following as part of its amendments to the Waste Management Act.

"It is the goal of the state that there be a minimum 25 percent statewide per capita reduction in the amount of discarded packaging delivered to solid waste composting, incineration, refuse derived fuel and disposal facilities by December 31, 1995, based on a reasonable estimate of the amount of packaging that was delivered to solid waste composting, incineration and disposal facilities in calendar year 1992." (Minn. Stat. § 115A.5501, subd. 1)

The goal was a component of earlier legislative proposals on packaging that attempted to set out a system of recovery targets, to be enforced with fees for items not meeting their targets.

Because the goal is directed at disposal abatement, it can be met through all the methods of recycling, reduction and reuse. The statute sets no consequence if the goal is not reached in 1995.

For the purpose of promoting the goal to businesses and the public, the Office of Waste Management (OWM) has labeled this initiative the "25 by 95" goal.

After setting out the goal, the statute assigns measurement and reporting duties for the Minnesota Pollution Control Agency (MPCA), the OWM and the Metropolitan Council. These agencies are to compare packaging discards per person

in the years 1992 and 1995, in order to determine whether the quantity of packaging in mixed solid waste dropped by at least one-quarter during that period. They also are to carry out studies and reports for the interim years of 1993 and 1994.

Because only 1992 and 1995 are essential years for determining whether the goal is met, figures from 1993 and 1994 should be regarded as chiefly for keeping the Legislature informed, developing consistent reporting methods and serving as a cross-check on the 1992 and 1995 information.

This document provides the Legislature with a report on packaging discards per person in 1992, the base reporting year.

Statutory responsibilities for monitoring progress

Under Minn. Stat. § 115A.5501, subd. 2-4, the Metropolitan Council and MPCA are to conduct annual composition studies of solid waste at disposal and processing facilities to determine the packaging percentages, in the metropolitan and non-metropolitan areas respectively. These sorts are to be conducted four times yearly. Alternatively, the Metropolitan Council and MPCA may choose another method other than sorting to measure packaging discards if it is at least as statistically reliable.

The Metropolitan Council is to transmit its yearly packaging-composition findings in the metropolitan area to the MPCA by March 1 of each year from 1993 through

1996. The MPCA is to average its findings with those of the Council to yield a statewide packaging percentage. The MPCA also is to calculate a margin of error for each year.

The MPCA is to provide the OWM with the packaging percentage, the margin of error, and an annual total of reported waste received at disposal and processing facilities.

The OWM is to combine these figures with the Minnesota population and arrive at an annual figure for packaging discards per capita. The OWM is to present these results to the Legislative Commission on Waste Management by July 1 of each year through 1996.

Chapter 2. Status

Sorts leading to estimates for the 1992 base year

The MCPA and Metropolitan Council conducted broad waste composition studies from 1990 through 1992. These were part of a research effort dating to the 1989 SCORE legislation, referring to the Select Committee on Recycling and the Environment (1989 Minnesota Laws, First Special Session, Chapter 1, Art. 22, Sec. 3). The Legislature ordered a broad statewide study of the composition of Minnesota's solid waste. The agencies designed their methodology and waste categories according to the Legislature's chief interests, which specifically mentioned recyclables and non-combustibles. There was no mention of packaging as a particular focus of the study. The Legislature had directed that final results be presented by November 1, 1992.

To distinguish subsequent sorts specifically intended to determine packaging composition, this report labels the original, statewide set of sorting studies authorized in 1989 as "the SCORE waste composition project." Waste-composition studies directed at packaging will be called "packaging composition" sorts.

For a timeline comparing work on the SCORE project with work connected to the "25 by 95" goal, see Figure 1.

The SCORE project's waste sorts began in 1990 and continued through late 1992. The agencies hired and directed crews to separate 300-pound samples on a random

basis from incoming truckloads of waste and hand-sort each item into a container labeled with the most appropriate descriptive category. The agencies had their crews divide the waste into 31 categories. The agencies chose the list of categories to represent different types of recyclables, combustible waste, problem materials, and of non-recyclable waste.

The SCORE project's sorts were not intended to produce a firm base year of information concerning the proportion of packaging in the waste stream. A few of the categories happen to be mostly packaging (e.g., "aluminum beverage containers," "glass food and beverage containers"); some have no packaging in them (e.g., "diapers" and "yard waste"); but the rest of the categories have some indefinite mix of packaging and non-packaging items. An important example is "other paper," a large category of waste that includes everything from paper towels to cereal boxes to paper plates. Packaging might be a modest proportion of "other paper" or it might constitute the majority.

Altogether, the SCORE project involved 39 sorts at 10 different sites, each sort lasting a full week and occupying a crew of 10 to 14 people.

At the time the "25 by 95" legislation passed; the MPCA and Metropolitan Council were working together to finish the waste sorts in the Metropolitan Area required by the SCORE legislation, leading up to a report to be presented to the LCWM in November 1992. All sorts done in 1992 by the two agencies were

Table 1

**Statewide Estimated Packaging Composition,
from MPCA and Metropolitan Council Studies, 1990-92**

Composition category	Percent of total discards, averaged statewide	Est. packaging component: percent of total
NEWSPRINT	4	0
HIGH GRADE PAPER	4.4	0
CORRUGATED AND KRAFT	8.8	8.8
MAGAZINES	2.9	0
OTHER PAPER	20	10
HIGH DENSITY POLYETHYLENE	0.7	0.7
PLASTIC FILM	4.7	4
PET PLASTIC	0.3	0.3
POLYSTYRENE	1.1	1.1
OTHER PLASTIC	4.6	2.3
ALUMINUM BEVERAGE CONTAINERS	0.5	0.5
OTHER ALUMINUM	0.4	0
FERROUS FOOD CANS	0.9	0.9
OTHER FERROUS	2.8	0
OTHER NON-FERROUS	0.5	0
GLASS FOOD AND BEV. CONTAINERS	2	2
OTHER GLASS	1.1	0
SMALL YARD WASTE	2.8	0
LARGE YARD WASTE	0.1	0
FOOD WASTE	13.3	0
WOOD WASTE	6.5	3
TIRES	0.1	0
DIAPERS	2.4	0
TEXTILES	3.1	0
OTHER ORGANIC WASTE	3.7	1
MAJOR APPLIANCES	0	0
SMALL APPLIANCES	0.8	0
DEMOLITION/CONSTRUCTION WASTE	2.9	0
HAZARDOUS WASTE	0.8	0.4
OIL FILTERS	0.1	0
OTHER INORGANIC WASTE	3.8	0
TOTAL	100.1	35

based on SCORE requirements and the need for consistency in measurements. Rather than conducting additional sorts in response to the packaging legislation, it was agreed among the agencies that the MPCA would estimate the packaging component within each of the 31 SCORE-based sorting categories and add those figures to produce a total estimate of packaging for 1992, the base year. These are summarized in Table 1.

Sorts for years 1993-1995

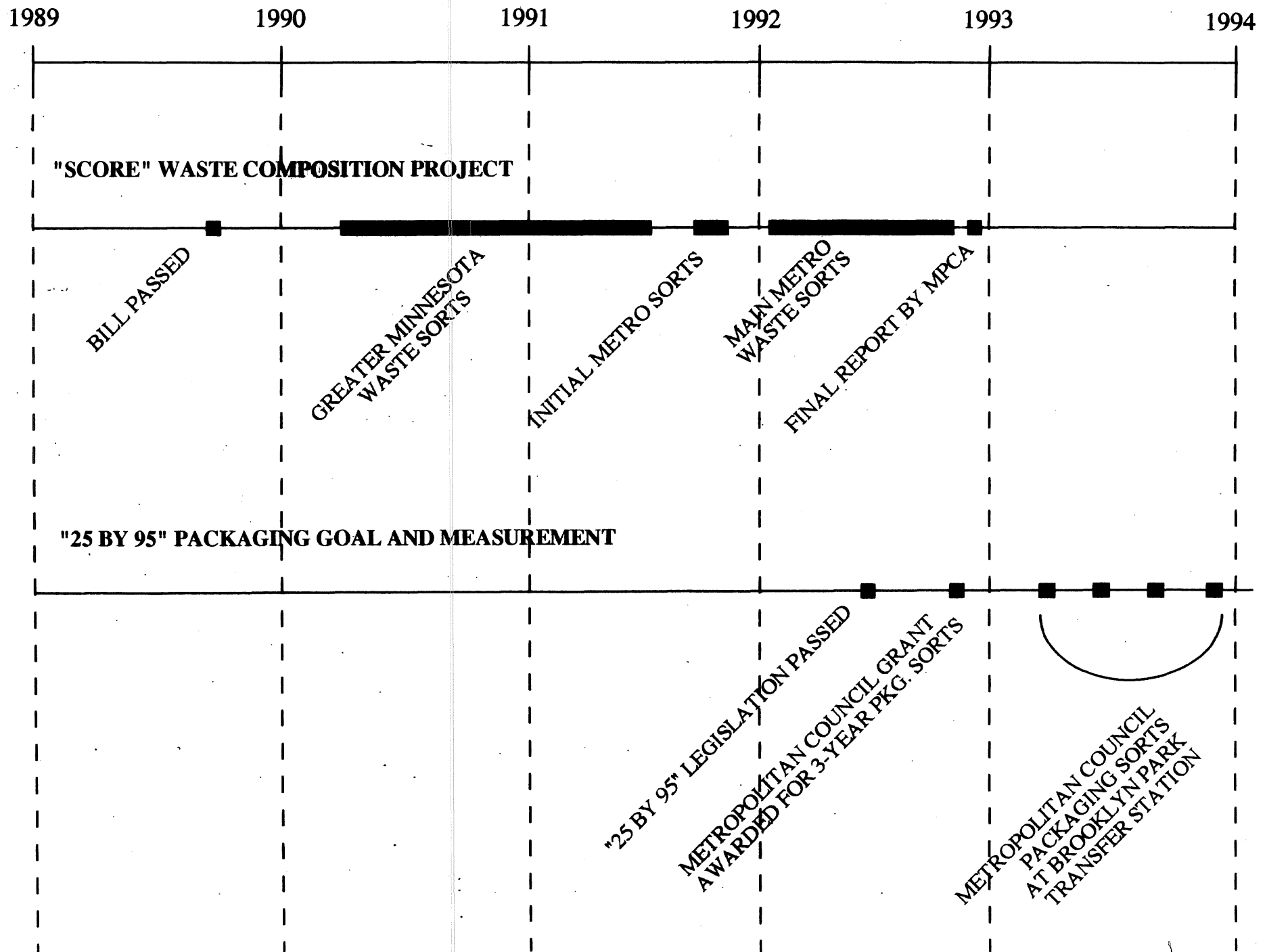
Metropolitan Area sorts

Using funds from the Metropolitan Abatement Account, which it manages, the Metropolitan Council issued an RFP and subsequently hired R.W. Beck and Associates, of Denver, Colorado, at a cost of \$150,000 to conduct a packaging sort in the Metropolitan Area for the period 1993 through 1995. In cooperation with the MPCA and OWM, the Council decided to have four week-long seasonal sorts conducted at the Brooklyn Park Transfer Station in Hennepin County. To date, two sorts have been completed.

Greater Minnesota sorts

The MPCA has informed the Legislature that it has no appropriation to carry out additional waste composition studies following completion of the general composition work in late 1992. The agency has recommended that funds be appropriated for this purpose in future years. In the meantime it has scheduled no sorts in Greater Minnesota, and the OWM anticipates that under the present circumstances future reports will contain Metropolitan Area information only.

Figure 1
Timeline Comparing Waste Composition Studies



Chapter 3. Report

Information on 1992 base year

The following narrative describes the steps that the cooperating agencies used in assembling the information that leads to the packaging discard figure.

1. Packaging in solid waste

Table 1 lists all the MPCA/Met Council waste-composition categories in the 1990-92 sorts, along with the percentage that each category contributed to total discards. The percentages are weighted averages of results from the metropolitan and non-metropolitan areas. (This means that when metro and non-metro percentages for a category are different and must be averaged, the metropolitan percentage is given more weight because its share of the state's waste is larger than the Greater Minnesota share.) To the right of that column is the MPCA's estimate of how much of each sort category was packaging.

For categories that had a mix of packaging and non-packaging, the MPCA needed to estimate the proportion of packaging. The MPCA had carried out informal sub-sorts of one category -- "other paper" -- to determine a packaging proportion, but the other categories had no such information on file. Given that the 1990-1992 samples had long since been returned to the disposal stream and could not be re-sorted, the MPCA staff relied on the public literature and anecdotal information. It consulted Franklin Associates' work for a basis on which to divide its mixed categories ("Characterization of Municipal Solid Waste in the United States - 1992

Update," Franklin Associates Ltd. for U.S. Environmental Protection Agency, July 1992). The staff also consulted its field notes and guidelines to workers regarding separation of materials. Sorting results from 1993 may shed some light on the validity of the MPCA's packaging/non-packaging estimates in the mixed categories for 1992. Totaled at the bottom, the right-hand column in Table 1 yields the MPCA's estimate of the percentage of packaging in mixed municipal solid waste for the 1990-1992 period: 35 percent.

This figure differs from the percentage of packaging estimated by Franklin Associates for the U.S. Environmental Protection Agency. For 1990 discards, Franklin estimated a packaging component of 29.2 percent, or 5.8 percent less than estimated by the MPCA. The OWM offers the following possible explanations for the difference.

- The MPCA's underlying figures are based on actual waste composition sorts. Franklin does not rely on sorts, but rather on a combination of manufacturers' production reports, import and export figures, and estimates of the interval of time that passes between manufacture and disposal for many different products and packages. There are fewer opportunities for error with the former approach. For example, much paper packaging absorbs moisture readily, and its weight as measured in waste will be higher than its weight at the time of production.

- Minnesota laws have changed the nature of the state's waste stream significantly from the national average. For example, Franklin's figures show yard waste at 19 percent of all waste by weight, but Minnesota composition studies show yard waste at only 2.9 percent. The high rate of yard waste removal in this state will raise the relative percentages of the remaining materials in mixed waste, such as packaging.

2. Reported figure for Minnesota waste receipts

The amount of solid waste reported to the MPCA in 1992, from disposal and processing facilities in Minnesota was 2,683,833 tons. This is mixed municipal solid waste (MMSW), and therefore does not include materials delivered to dedicated industrial waste facilities, separated recyclables or residues coming from a waste processing facility.

3. Population figures

The latest population numbers available to the OWM are from calendar year 1991, showing a total of 4,416,292 Minnesotans. The 1992 figure will not be available until after this report's due date; the OWM will provide a written update to the Legislative Commission on Waste Management after the new population figure becomes available. Readers interested in the per-capita figure based on 1992 demographic estimates should contact the OWM after August 31, 1993.

4. Per-capita MMSW discards

Dividing MMSW receipts by population, and converting to pounds, yields a figure of 1,220 pounds of discards per person.

5. Per-capita packaging discards

Multiplying per-capita waste discards in pounds, from item 4, by the estimated packaging composition in item 1, yields the base-year estimate for packaging discarded as waste: 427 pounds per person. As noted above, this is based on 1991 population estimates rather than 1992 estimates because the latter are not yet available.

6. Margin of error

There are two principal sources of uncertainty in the packaging estimate: first, the accuracy of the percentage figures for the 31 categories sorted in the SCORE project; and second, the accuracy of the MPCA's estimates as to the proportion of packaging in each category.

The MPCA has stated that it has a statistical basis for providing a range of error for the first, but not for the second. Therefore, the following discussion relates only to the first source of error.

For the most conservative margin of error, the MPCA consulted its records for the variation in waste composition among "commercial" truckloads arriving at one facility. Commercial loads are much more variable than household loads. This means, for example, that corrugated boxes might be only a few percent of one commercial load, but over 50 percent of the next load.

Assuming that all loads are as variable as commercial loads, the MPCA reports that

a single, random sample of waste likely would indicate a range for a per-capita packaging figure somewhere between 50 pounds per person and 1,106 pounds. This is at the "90 percent confidence level," meaning that there is a 90 percent chance that the packaging compositions from a single sample would indicate a per-capita figure falling within these bounds.

A comparable statistical approach to residential loads received at a different facility shows a margin of error that ranges from a low of 203 pounds of packaging discards per person, to a high of 798 pounds. This is also at the 90 percent confidence level.

The MPCA reports that statewide MMSW is 55 percent to 60 percent commercial and industrial in origin; and 40 percent to 45 percent residential in origin.

Optional adjustments to the discard figure

The preceding part of this report addresses the explicit requirements of the statute. In the following section the OWM provides additional information on discard quantities in the system, not called for in the statute, but deserving of mention. Though collectively these amount to less than five percent of the Minnesota's discards in 1992, they have the potential to change significantly in the coming years and therefore could affect the per-capita packaging discard figure.

Correction for exports of waste

In 1992, at least one dozen facilities located outside of Minnesota accepted waste from waste haulers operating in

Minnesota. These facilities do not report their tonnages to the MPCA, and so their waste does not appear in the MPCA's facility figures above.

As part of the SCORE annual reporting process and the metropolitan counties' landfill certification reports, Minnesota counties reported that 99,120 tons of mixed municipal solid waste left the state in 1992. Because of reporting difficulties, this figure very likely understates the total exports.

Because waste-disposal fees are higher in Minnesota than in neighboring states, no more than a negligible amount of solid waste is imported into the state for disposal, and the OWM has not subtracted any tonnage for this. This yields a total discard figure for Minnesotans of 2,782,953 tons. Current trends indicates that solid waste exports will increase.

Adjusting for separation of recyclables at discard facilities

Not all recyclables are separated at businesses and homes. At some waste-processing facilities, such as the East Central Solid Waste Commission's composting plant, workers and machines remove recyclables from mixed waste early in the process. These are called "mechanical/hand separated materials."

Counties reported separating 47,250 tons of recyclables, by hand or mechanically, from waste delivered to mixed solid waste facilities in 1992. Subtracting this tonnage from the total receipts gives a better indication of true discards, meaning waste that escapes recycling or reuse.

Subtracting the separated tonnage leads to a "true discard" figure of 2,735,703 tons, from Minnesota sources, for 1992.

Packaging abatement activities

Over the last year, the OWM has been taking the following actions to inform Minnesotans of the "25 by 95" goal and to encourage them to meet it. The OWM:

- Is assembling a nationwide directory of returnable/reusable shipping containers.
- Is hosting sessions at conferences to discuss the "25 by 95" program, including the 1993 Solid Waste Seminar and the 1993 Pollution Prevention Conference.
- Has targeted its technical assistance at high-volume packaging materials: corrugated containers, wood crates and pallets, and plastic film.
- Has promoted consumer packaging reuse and reduction through the SMART campaign (for "Saving Money and Reducing Trash").
- Is meeting with trade groups, associations and interested parties, and publicizing the goal through their newsletters.

In the past year, the Metropolitan Council reports that it has spent more than \$800,000 in staff time and consultant work to monitor waste and packaging, and help reduce packaging waste in the region. In addition to the waste-composition work already described, the Council has:

- Selected and hired a consultant to prepare television "advertisements" and purchase broadcast time to promote the OWM's "SMART" campaign;
- Conducted studies to determine potential pressure points for government intervention that will expand recycling markets for PET plastic containers and mixed paper;
- Developed and published materials on examples of business source reduction for use by Metropolitan Area counties, the OWM, and others in providing direct technical assistance on source reduction to businesses in Minnesota.
- Worked with the Minnesota Technical Assistance Program to expand technical assistance services to Minnesota businesses to cover MSW source reduction.

In addition to allocating money for the 1993-1995 packaging sorts, the Metropolitan Council has committed additional funds for source reduction, reuse and recycling of packaging. It also has promoted the SMART campaign in the Metropolitan Area.

The MPCA is in charge of informing the public about, and enforcing, certain laws that affect packaging waste. The MPCA is publicizing the recycled-content labeling law that took effect in January 1993. This law requires that claims of recycled content be accompanied by a statement showing the minimum verifiable percentage of post-consumer waste.

Chapter 4. Limitations and Shortcomings in Reporting

Changes in economic cycles

The sampling of the waste stream considered as the base year of 1992 was done from July 1990 through the end of 1992, which was a recession. Economic activity is a variable that would increase or decrease packaging waste over time, irrespective of any source reduction, recycling or reuse.

The OWM will attempt to describe changes in economic activity according to standard indices. The most useful indications of Minnesota economic activity appear to be total wage and salaries, employment, retail sales volume, manufacturing hours worked, housing unit starts, and unemployment insurance claimants. Before issuing the final report in July 1996, the OWM will consult with economists at the appropriate state agencies as to the best method to use the information available.

Waste covered

The composition and tonnage information provided to the OWM does not cover the full range of solid waste discards, but rather is limited to waste being delivered to MMSW composting plants, waste-to-energy incinerators and municipal solid waste landfills. Waste being delivered to dedicated industrial disposal facilities, for example, is not covered in this report.

Base year compared to timing of actual sorts

The MPCA and Metropolitan Council sorts cited for the base year of 1992 did not take place entirely in 1992. The Greater Minnesota sorts stretched over the period from July 1990 to May 1991. Most of the Metropolitan Area sorts were in calendar year 1992, but two were in late 1991.

Considerations for future work

Following are some considerations for achieving the most reliable measurements between 1992 and 1995.

■ The Legislature should consider appropriating money to the MPCA to carry out one or more packaging-composition sorts in Greater Minnesota. The MPCA estimates that a packaging waste-composition effort, conducted at two facilities for two weeks each, twice a year through 1995, would require an annual appropriation of \$150,000.

■ The OWM believes that the Metropolitan Council and MPCA should have the flexibility to choose a sorting schedule less frequent than four seasons per year, in their discretion. Given the language in § 115A.5501 regarding four-season sorting by the MPCA and Metropolitan Council, it is not clear whether the statute allows the Metropolitan Council and MPCA this flexibility. The MPCA stated in its final report on the SCORE project that a four-season sort does not provide significantly

better information than a two-season sort, because waste does not vary greatly from season to season.

■ In the event that the Legislature does not appropriate funds for waste sorting in Greater Minnesota by the MPCA, stakeholders in this process should begin discussing the feasibility of alternatives to the sorting approach. The statute allows the MPCA and Metropolitan Council to choose an alternative to waste sorting if it is at least as statistically reliable.

Appendix A. Information Transmitted from the Minnesota Pollution Control Agency

Estimate of Packaging Materials Entering Minnesota MSW Disposal Facilities, 1992				
Waste Category	Percent by Weight	MSW 1992 (Tons)	Estimated % Packaging by Weight	Estimated Tons Packaging
Newsprint	4.0	107,246	0.0	0
High Grade Paper	4.4	117,971	0.0	0
Corrugated/Kraft	8.8	235,941	8.8	236,177
Magazines	2.9	77,753	0.0	0
Other Paper	20.0	536,230	10.0	268,383
HDPE	0.7	18,768	0.7	18,787
Plastic Film	4.7	126,014	4.0	107,353
PET	0.3	8,043	0.3	8,051
Polystyrene	1.1	29,493	1.1	29,522
Other Plastic	4.6	123,333	2.3	61,728
Aluminum Beverage Contai	0.5	13,406	0.5	13,419
Other Aluminum	0.4	10,725	0.0	0
Ferrous Food Cans	0.9	24,130	0.9	24,154
Other Ferrous	2.8	75,072	0.0	0
Other Non-Ferrous	0.5	13,406	0.0	0
Glass Food/Beverage Conta	2.0	53,623	2.0	53,677
Other Glass	1.1	29,493	0.0	0
Small Yard Waste	2.8	75,072	0.0	0
Large Yard Waste	0.1	2,681	0.0	0
Food Waste	13.3	356,593	0.0	0
Wood Waste	6.5	174,275	3.0	80,515
Tires	0.1	2,681	0.0	0
Diapers	2.4	64,348	0.0	0
Textiles	3.1	83,116	0.0	0
Other Organic Waste	3.7	99,203	1.0	26,838
Major Appliances	0.0	0	0.0	0
Small Appliances	0.8	21,449	0.0	0
Demolition/Construction	2.9	77,753	0.0	0
Hazardous Waste	0.8	21,449	0.4	10,735
Oil Filters	0.1	2,681	0.0	0
Other Inorganic Waste	3.8	101,884	0.0	0
Totals	100.1	2,683,833	35.0	939,342

Table 2					
Estimate of Packaging Materials Entering Minnesota MSW Disposal Facilities, 1992					
Waste Category	Estimated Pounds Annual Per Capita Packaging 1992	Lower Confidence Interval If All MSW Were Commercial/Industrial	Upper Confidence Interval If All MSW Were Residential	Lower Confidence Interval If All MSW Were Residential	Upper Confidence Interval
Newsprint	0	0	0	0	0
High Grade Paper	0	0	0	0	0
Corrugated/Kraft	107	28	187	77	138
Magazines	0	0	0	0	0
Other Paper	122	1	368	81	183
HDPE	9	1	18	4	13
Plastic Film	49	9	89	29	88
PET	4	1	11	1	6
Polystyrene	13	1	27	4	23
Other Plastic	28	1	117	9	48
Aluminum Beverage Containers	8	1	12	2	10
Other Aluminum	0	0	0	0	0
Ferrous Food Cans	11	1	29	4	18
Other Ferrous	0	0	0	0	0
Other Non-Ferrous	0	0	0	0	0
Glass Food/Beverage Containers	24	4	45	10	39
Other Glass	0	0	0	0	0
Small Yard Waste	0	0	0	0	0
Large Yard Waste	0	0	0	0	0
Food Waste	0	0	0	0	0
Wood Waste	37	1	148	1	159
Tires	0	0	0	0	0
Diapers	0	0	0	0	0
Textiles	0	0	0	0	0
Other Organic Waste	12	1	33	1	77
Major Appliances	0	0	0	0	0
Small Appliances	0	0	0	0	0
Demolition/Construction	0	0	0	0	0
Hazardous Waste	5	1	26	1	15
Oil Filters	0	0	0	0	0
Other Inorganic Waste	0	0	0	0	0
	427	50	1106	203	798
Upper and Lower Confidence Intervals at the 90% confidence level					