City of Toronto
Litter Audit 2004

Executive Summary
Background and Methodology

The City of Toronto conducted a Litter Audit in 2002. That report detailed the composition and occurrence of litter in the City and reported results to the Clean Streets Working Group, then to Works Committee and Council. Part of the recommendations approved by City Council was to re-audit the litter sites in two years to determine whether progress was made in reducing littering within the City of Toronto.

The Toronto Litter Survey 2004 was done using the same methodology used in 2002. The 2004 survey was conducted in June, using a proven methodology similar to the one originally developed and used in Florida, USA. This methodology was chosen because it had been accepted and peer reviewed in response to the Florida State Legislature's wishes to have a simple, repeatable method for counting litter on public property.

The original 2002 Toronto litter survey used GIS (GPS) coordinates to obtain all potential road sections within the City. From these segments 375 potential sites for litter counting were located. In total, the survey teams audited 247 sites. In 2004, the same 247 sites selected in 2002 were audited again.

Litter was classified as "large" for those items over 4 square inches in size or as "small" litter for items <4 sq. in.. Eighty-four sub-categories of large litter (see Sub-categories of Litter – Pg. 18) and 16 sub-categories (Pg. 17) for small litter were used. Gum deposits were added as a 16th small litter category in the 2004 audit, at the request of City staff.

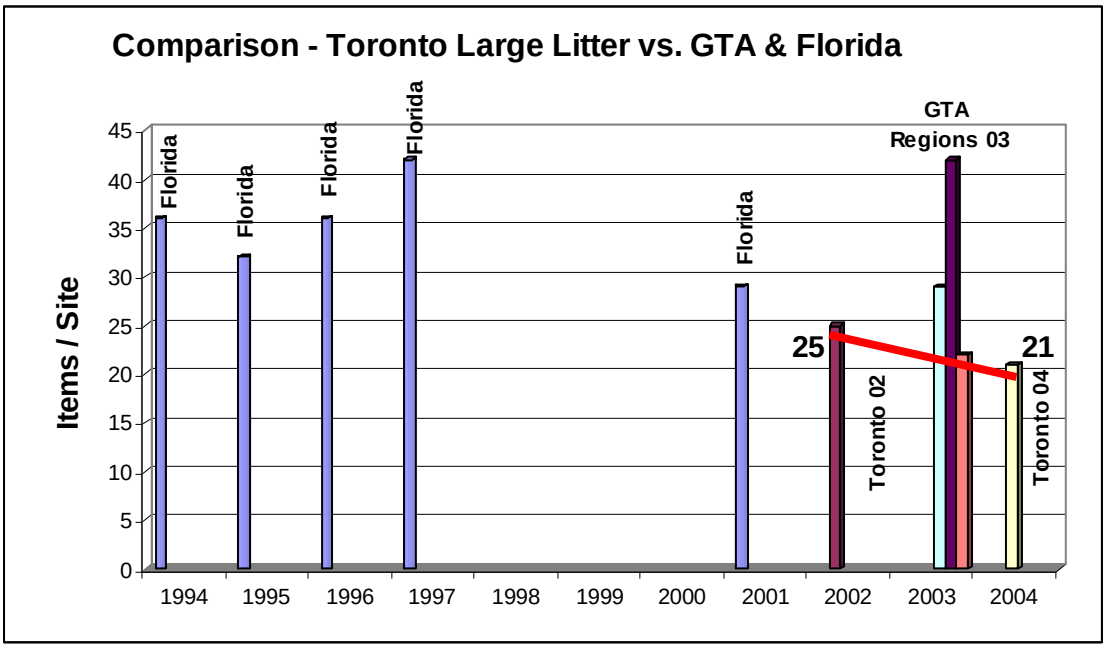
Litter Audit Results

A total of 5,243 pieces of large litter were counted during the 2004 litter audit. This was an average of 21 pieces of large litter per site, compared to the average of 25 pieces per site in 2002. This is a 16% decrease in large litter items per site in 2004 compared to the 2002 litter survey.

In 2003, surveys were also conducted in the Regions of Peel, Durham and York, using the same methodology. Figure A, below, compares the City of Toronto to other GTA jurisdictions and Florida, all of which have been surveyed using this methodology.

Paper products, when amalgamated, represent the largest "material type" of litter (including paper, paperboard, cardboard, towels, napkins, newspapers, books, flyers, printed materials, business forms, stationary). Paper products were 39.7% of large litter items counted (2,080 of 5,243 pieces). In 2002 paper products represented 42% of large litter items.

FIGURE A – City of Toronto
– Large Litter vs. Other Jurisdictions

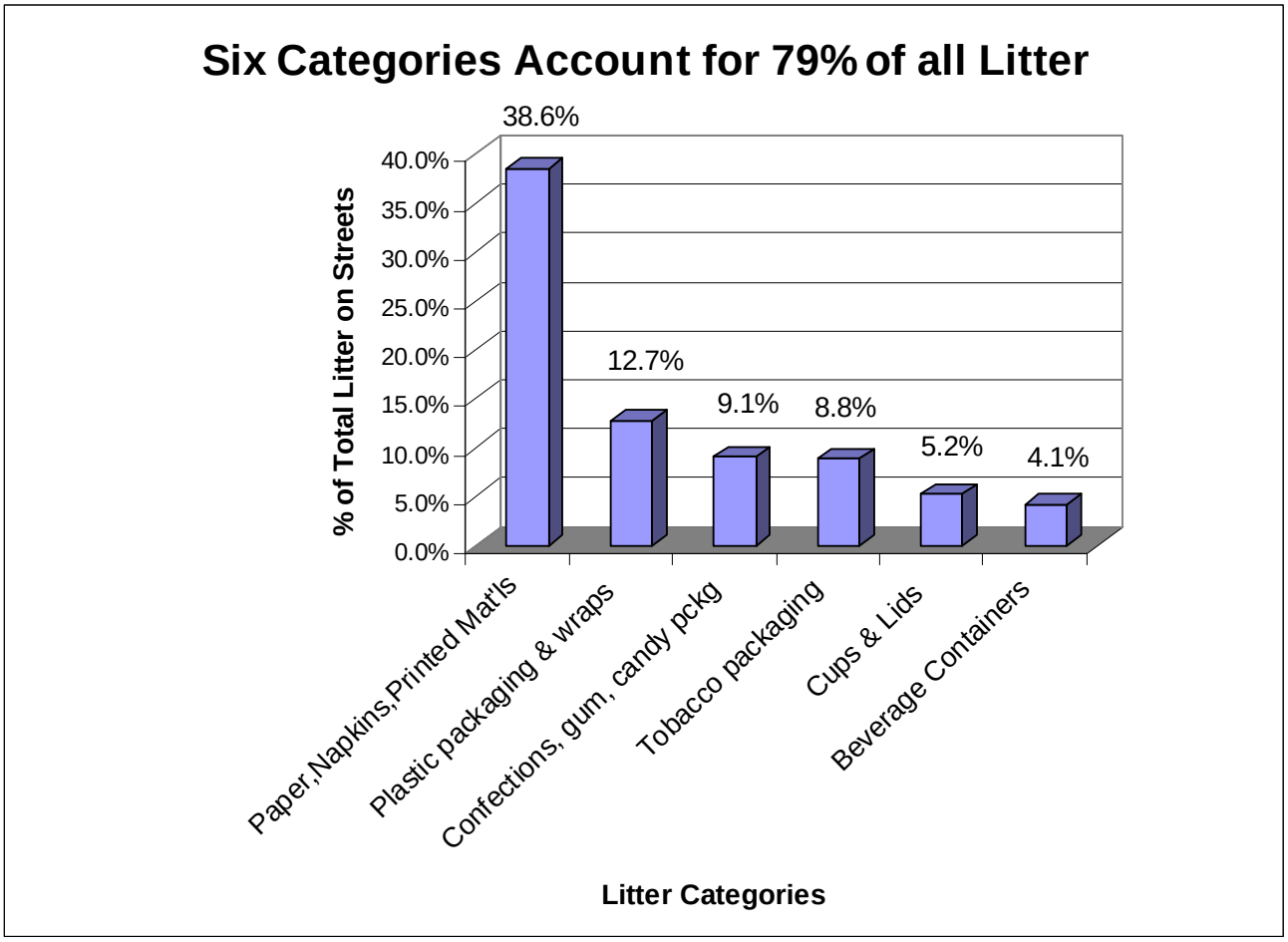


The second most significant “material type” observed was plastic materials (plastic packaging, wrap, bags-non-retail, drink cups, jars, bottles, composites, utensils, zip bags, trays, plates, retail bags, carrying rings), which were 15.2% of total litter counted (796 of 5,243 pieces of large litter counted). In 2002 plastic products represented 21% of total large litter.

Significant sectors of packaging that contribute to large litter include take-out food packaging such as hot & cold cups, lids, take out wrap, take-out bags, trays and food containers, which account for 11.9% of total litter (626 of 5,243 pieces). In 2002 take-out food litter accounted for 15% of the litter observed.

Beverage packaging litter was 5.2 % of all large litter counted (273 of 5,243 pieces of large litter counted), with soft drinks/ sports drinks being 2.7 % of all large litter, beer containers were 0.2 % , wine /liquor <0.1% of the large litter observed in the Toronto 2004 audit. In 2002 beverage container litter accounted for 4.9% of total large litter observed.

Figure B - Six Categories Account for 79% of all Litter



When examining the item counts for large litter, we observed that 33% of the sites (82 of 247) had litter counts greater than the average of 21 items per site count. Appendix 1 provides details of the ranking of sites from "most littered" to "least littered," and provides information identifying their location / Ward.

Small litter is a difficult component of litter to count. The methodology restricts counting small litter except in defined slices or as samples within a site. Small litter is often badly weathered and hard to identify by field crews.

In the 2004 litter audit, the City of Toronto requested that gum deposits on pavement and sidewalks be added as a new small litter category. Chewing gum when weathered becomes dark in colour (black) and is difficult to remove. It is recognizable as gum

because it remains slightly raised from the surface, rather than appearing flat like a stain. Field auditors were careful to count only deposits believed to be chewing gum residues.

In 2002, small litter was sampled to test the statistical validity of the small litter methodology. Concerns were identified with respect to the relatively small sample size of these small litter samples, and the City asked the consultant to consider an improved methodology for future litter audits. Also, there was concern raised after the 2002 audit that the methodology for small litter should include the data on tobacco and gum. For the 2004 audit, the small litter methodology was enhanced to conduct a statistically valid small litter baseline sample at 47 sites –called "Super Sites." By enhancing the small litter methodology, the 2004 "Super Site" data forms the baseline for comparison in future audits.

In total, 49,928 pieces of small litter were counted at the 47 "Super Sites." Over half of all small litter was chewing gum (~ 26,000 items). Several sites had over 2,000 gum deposits in the 350 ft^2 site area. Over 5,700 cigarette butts were also counted at the 47 sites. At some individual sites, over 400 butts were counted. The 2004 "Super Site" small litter results are not directly comparable to 2002 results because different methodologies were used. The 2004 data establishes a baseline for subsequent small litter site audits. The results suggest the need for some form of specialized litter receptacles that are safe and convenient for citizens to use for proper disposal of tobacco debris and chewing gum.