



**Stantec**

## **Memo**

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### **Reference: Review of Literature Search Results**

#### **1.0 Study Overview**

Stantec Limited conducted a review of the material collected in May 2009 by CDN Research Associated Inc. (CDN) to identify potential best practices for recycling in public and open spaces. The literature search identified a broad range of public space recycling programs implemented throughout the world in parks, streets, rest stops and during special events.

The purpose of the review was to:

- Identify if the literature/documentation is sufficient to identify potential best practices;
- Identify if potential best practices exist, from the programs documented in the literature search; and,
- Identify if further analysis is required to verify a program as a best practice, and what type of analysis could be conducted.

#### **2.0 Literature Review Results**

The literature search results include documents that identify potential best practices for two types of public and open spaces; general public space programs and special events. The following is a list of documents that describe potential best practices for recycling for public spaces and special events, and a concise discussion of what each document provides.

##### **2.1 Public Space Recycling Programs and Initiatives**

- Independent Assessment of Public Place Recycling Final Report (Queensland EPA & National Packaging Covenant Council), Queensland (Australia) - [www.packagingcovenant.org.au/documents/File/NPG\\_11\\_06\\_PPR\\_Assessment\\_Final\\_Report.pdf](http://www.packagingcovenant.org.au/documents/File/NPG_11_06_PPR_Assessment_Final_Report.pdf)

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The report identifies factors that impact the effectiveness of public space recycling programs. The findings are divided into three types of public spaces: streetscapes; events; and, commercial and institutional space. The results from the streetscapes and events analysis are likely the most relevant to WDO for this study.

The report uses over 50 different case studies to identify key factors for effective recycling programs and prepare guides for recycling within streetscapes/commercial & institutional spaces and events. The results are presented in easy to follow tables. Refer to Section 7.3, 7.5, 8.1 and 8.2 for the good practice factors and guides.

- New York City's Public Space Program, New York City, New York (United States) - [http://www.nyc.gov/html/nycwasteless/html/recycling/public\\_space\\_recycling.shtml#final\\_report](http://www.nyc.gov/html/nycwasteless/html/recycling/public_space_recycling.shtml#final_report)

The report describes a pilot program for public space recycling which was implemented in 2007. Detailed background information is provided on public space recycling in New York City, how the pilot areas were chosen, and how the pilot was communicated with the public. Detailed waste audit results are provided and lessons learned are summarized. The report identifies that the preferred location to place recycling bins is in areas with heavy commuter use, dense downtown neighbourhoods, and a large number of office workers. The report highlights the importance of ongoing monitoring and maintenance of bins.

- 'Recycle Away' Public Arena, Park, and Sports Field Recycling Research – Executive Summary (Quinte Waste Solutions), Trenton, Ontario (Canada) - [http://www.stewardshipontario.ca/corporate/pdf/media\\_archive/2005/EE\\_Fund\\_Quinte\\_Depot.pdf](http://www.stewardshipontario.ca/corporate/pdf/media_archive/2005/EE_Fund_Quinte_Depot.pdf) Full report was found by Stantec at [http://www.stewardshipontario.ca/bluebox/pdf/eefund/reports/44/44\\_report.pdf](http://www.stewardshipontario.ca/bluebox/pdf/eefund/reports/44/44_report.pdf)

The study identifies best practices for public parks, sports fields and arenas recycling based on the results of a pilot project initiated in Quinte West and Belleville, Ontario in 2005. Details on waste audits completed before and after pilot implementation are documented. The report includes costs for recycling collection. This is the only report found in the literature search that provides: analysis on the effectiveness of different recycling bins; description of the ratio of recycling bins used to garbage bins (1:5). This study is the only Canadian example from the CDN literature that best practices for public space recycling could potentially be identified.

Best practices could be derived from the pilot study including types of signage for recycling bins, location of recycling bins, and type of recycling bins.

Funding for the study was provided by Stewardship Ontario through the Effectiveness and Efficiency Fund.

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- State Rest Area Recycling Programs, (Submitted to: Massachusetts Highway Department), California, Ohio and Wisconsin (United States) - <http://www.mhd.state.ma.us/downloads/recycle/publications/restareas.pdf>

This study evaluates recycling practices at State rest areas and provides recommendations for improvement based on the results of other studies. The report provides recommendations for signage, public outreach, placement and layout of recycling bins, and monitoring. The recommendations are complimentary to best practices identified in previous documents identified above. The study was completed by students at the University of Massachusetts.

**2.2 Special Events Recycling Programs and Initiatives**

- Recycling at Harley Davidson 100<sup>th</sup> Anniversary Celebration Events, Wisconsin (United States) - <http://www.besmart.org/festival/CaseStudies/HDExecSummary.pdf>

Celebration events were held at five manufacturing facilities and four event sites (parks as well as bars). A waste audit was conducted at each of the nine locations however the waste audit results are not compared to previous years. The report does not identify which recycling initiatives had the most impact on diversion. The waste audit results indicate that some of the events had more successful recycling programs than others. Recommendations are provided for best practices.

The report provided in the literature search is an executive summary. The final report and appendix are available from Harley Davidson by emailing [Beverly.scheels@harley-davidson.com](mailto:Beverly.scheels@harley-davidson.com)

- Minnesota State Fair, Minnesota (United States) - <http://www.besmart.org/festival/CaseStudies/mnstatefair.html>

Recommendations for recycling are provided based on seven years of experience running the fair. Most recommendations are based on their polystyrene cup recycling program. A brief events 'to-do' list is provided which focuses on logistics of implementing recycling activities at an event. There is no assessment of how these recommendations increase recycling or reduce contamination. The 'to-do' list does consider communication, collection, working with event vendors, where to place recycling bins, and monitoring.

- Marymoor Park - Redmond, Washington (United States) - <http://www.epa.gov/epawaste/conservation/rrr/roqo/documents/marymoor.pdf>

The document describes the park recycling program implemented in 2007. A waste audit was conducted but not many details are provided on the methodology. Waste audit results indicate increased diversion during the

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concert series at the park. The report does not identify which recycling initiatives had the most impact on diversion or contamination. Best practices could be derived from their recycling program including description of recycling bins, location of bins, collection, staffing, and public outreach efforts.

**2.3 Best Practice Guides**

The literature search also uncovered 'how-to' or 'best-practice' guides for public space and special event recycling. The following guides provide easy to follow processes for implementing a public space and special event recycling program including best practice recommendations. None of the guides include detailed background information on how they established their best practices for recycling.

- Public Place Recycling – Best Practice Guidelines, Victoria (Australia) - [http://www.resourcesmart.vic.gov.au/documents/PP\\_recycle\\_guidelines.pdf](http://www.resourcesmart.vic.gov.au/documents/PP_recycle_guidelines.pdf)
- Public Place Recycling Toolbox, Victoria (Australia) - [http://www.resourcesmart.vic.gov.au/documents/Venues\\_PPR\\_Toolbox.pdf](http://www.resourcesmart.vic.gov.au/documents/Venues_PPR_Toolbox.pdf)
- Recycle Bins in Public Places 'Recycle on the Go' – A Good Practice Guide, Norwich (United Kingdom) - <http://www.defra.gov.uk/environment/waste/recycleonthego/pdf/recycleonthego-guide.pdf>
- Recycling at Events – A Guide to Reducing Waste at Any Event, Portland, Oregon (United States), <http://www.recyclingadvocates.org/pdf/pubs/events.pdf>

**3.0 Recommendation for Further Analysis**

The literature provides sufficient detail to determine best practices for:

- Signage;
- The placement of recycling bins;
- The communication with staff, vendors, and collection crews;
- The design of the recycling bins;
- The type of recycling bins; and,
- The characteristics of public spaces that achieve the greatest diversion with the least contamination.

Additional study is recommended to confirm best practices for:

- The number of recycling bins that should be set out;

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- The spacing of recycling bins throughout a public and open space;
- Appropriate monitoring mechanisms to ensure the success of current and new recycling initiatives;
- The ratio of recycling bins to garbage bins; and,
- The impact of individual recycling initiatives on waste composition.

Monitoring the performance of the recycling initiatives will be required to establish them as best practices. Monitoring programs could include the visual inspection of recycling and garbage bins to qualitatively assess level of and type of contamination, waste audits of recycling and garbage bins pre- and post- implementation of a recycling initiative, and requesting that service providers weigh recycling and garbage collected at public and open spaces.

In addition, it is recommended that a cost/benefit analysis of implementing different recycling programs, containers, etc. be conducted to assess the cost implications associated with implementation potential best practices.

**4.0 Closure**

If you have any questions or would like further clarification on our results, please contact me directly at 905-631-3923 or by email at [Kerrie.Skillen@Stantec.com](mailto:Kerrie.Skillen@Stantec.com) at your earliest convenience.

Sincerely,

**STANTEC LIMITED**

**- Original Signed By -**

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