

Victorian Litter Report 2005

**Submitted to
Sustainability Victoria**

Report prepared by
Rob Curnow & Karen Spehr
Community Change

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Contact Details

Rob Curnow, Director Social Research, Community Change Tel 03 5978 8099 Mob 0418 885 312
 email rob@communitychange.com.au web www.communitychange.com.au
 Suite 13 The Coolstores, 990 Moorooduc Highway, Moorooduc, Vic, 3933

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Executive Summary

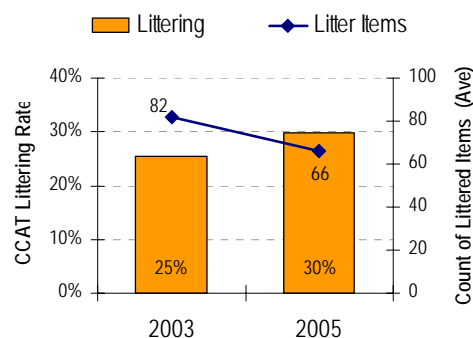
People's littering behaviour can be influenced by numerous factors, including the characteristics of public place locations themselves. Public places that are clean, safe and user friendly promote participation of the community (and visitors) in efforts to care for and maintain the location, as well as engendering a sense of ownership and community pride. In contrast, public places that are dirty and poorly cared for attract not only litter, but are more likely to contain graffiti and to increase the likelihood of anti-social behaviour and threaten community safety.

In 2005, Sustainability Victoria commissioned Community Change to use the CCAT to provide information on key indicators of litter reduction program effectiveness compared to baselines established in the 2003 protocol. The Victorian Litter Report (VLR) 2005 contains the outcomes of this comprehensive benchmarking exercise.

Statewide Littering Behaviour and Litter

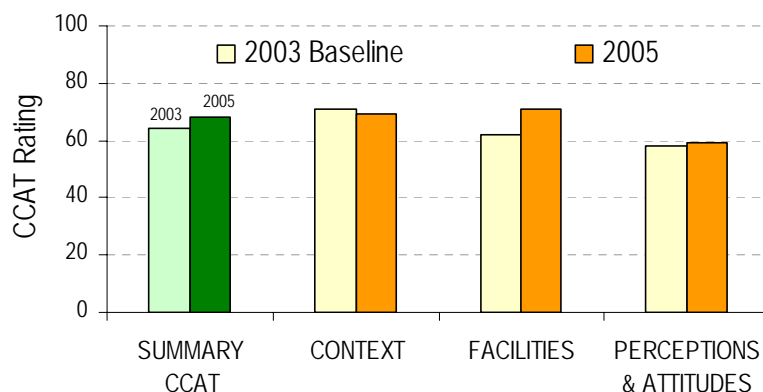
In 2005, 858 observations of disposal actions recorded throughout the State of Victoria identified 30% of people littering, slightly above 2003 levels (25%).

The number of littered items in 2005 (66) was however significantly less than in the 2003 Victorian baseline (82).



Statewide CCAT

A Summary CCAT score of 68/100 was found for public places in the State of Victoria in 2005, and had improved from the 2003 level (64/100). This improvement was above levels targeted by Sustainability Victoria for 2006 in *Toward Zero Waste* of 67/100.



Facilities in public place locations throughout the state showed a large improvement (almost 15%) compared to 2003 with a trend for well designed, positioned and serviced bins and improved maintenance, presentation and cleanliness of street furniture, landscaping and boundary markers.

Community Expectations of Disposal Facilities

The strong sense of belonging and safety that members of the community clearly had with their local public places appeared to result in very high expectations regarding the standard of facilities. Community perception of the adequacy of disposal facilities was not commensurate with independent CCAT assessor ratings, indicating that those using public places may be inclined to make harsher judgements of disposal facilities than are warranted.

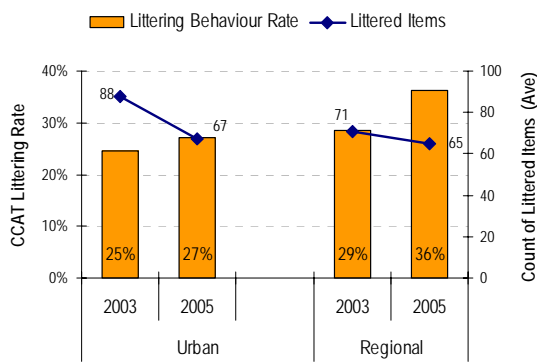
Survey respondent satisfaction with litter management and assessments of litter in the location also highlighted the community expectation that more could be done to raise standards of litter management.

Outcomes suggest that while managers of public places have improved location facilities, litter containment and collection of items on the ground, the Victorian community has yet to take full responsibility for doing the right thing with used items. These results also highlight the importance of a comprehensive, strategic approach to litter management and prevention which takes local factors into account.

Urban and Regional Locations

In 2005, the difference between littering behaviour rates in the city compared to the country was almost 10%, indicating people in regional public places were more likely to litter than their urban counterparts.

In both 2003 and 2005, littering was more common in regional locations. Urban littering behaviour increased slightly by 2% while regional littering behaviour increased considerably by 7% compared to 2003.



The major change in litter on the ground in Victoria in 2005 was largely due to a drop in the number of littered items found in urban locations with an average of 21 fewer items found littered throughout urban locations compared to only 6 fewer items (on average) in regional locations.

Urban and regional comparisons indicated a Summary CCAT of 68/100 for urban locations and 69/100 for regional public places, with both areas showing improvement (change scores of 5% and 8% respectively) since baseline.

People in regional locations however were more likely to litter than their urban counterparts, indicating the need for an increased focus on behaviour change and litter prevention programs outside of Melbourne.

There was little difference in the number of littered items found in urban or regional locations, indicating that litter clean up and containment efforts were operating at similar levels in both places.

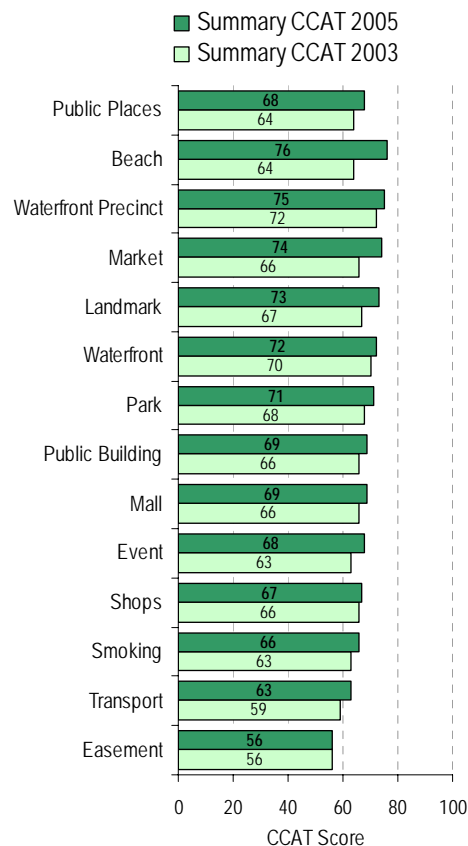
Site Types

Most littering behaviour occurred in transport sites where most litter was also found. Littering behaviour was also at high levels in smoking and market sites, which had not previously been the case in 2003.

Easements typically contained numerous littered items, similar to transport sites. Events showed a substantial decrease in littering behaviour compared to baseline, although levels were still relatively high.

In 2005 the highest Summary CCAT scores were for beaches, waterfront precincts and markets, with easements, transport and smoking sites at the lower end.

Improvements above 2003 benchmarks were evident in Summary CCAT scores for all site types except easements. Despite some improvement in event, smoking and transport sites in 2005, greater attention to those location features influencing littering behaviour is required for these locations which have not performed well in either benchmark

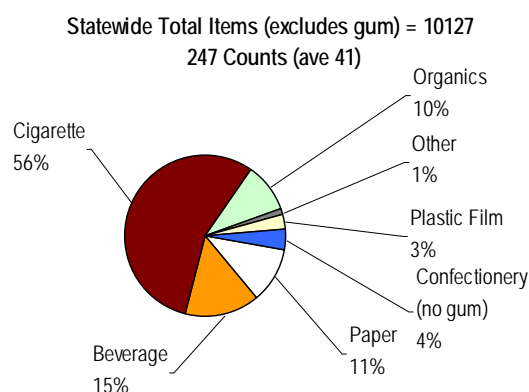


Littered Items

The most frequently found littered items on the ground were confectionery related, usually in the form of chewing gum which, although the result of a fairly low frequency behaviour, persists in locations long after it has been littered.

Including chewing gum litter in litter counts resulted in confectionery related items comprising two fifths of all items counted, with cigarette related litter contributing over one third to items found on the ground.

When chewing gums is excluded from litter counts cigarette butts contribute over half of the littered items counted. The composition of items found littered throughout Victoria provides clear priority targets for the development of litter abatement programs.



Recommendations

On the basis of VLR findings, the following actions are recommended:

1. Establish support for regional interventions aimed at improving bin use behaviour by giving priority to litter prevention initiatives in regional areas.
2. Attempt to improve community assessment of litter management by more frequent clean up of pockets of litter, servicing of bins, and promote significant facilities improvements (BINrastructure and infrastructure) to support community recognition of local achievements.
3. Continue the focus on BINrastructure and infrastructure improvement, extending this to problematic site types such as transport and smoking sites. Examine individual location recommendations to identify local themes for improvement.
4. As a priority, clean up transport and easement sites, most of which are litter hot spots.
5. Review efforts to prevent littering of confectionery related items and clean up chewing gum, a persisting, high impact litter problem in public places.
6. Employ a systematic and thorough approach to ensure the provision of appropriate BINrastructure and community education to support cigarette litter prevention in smoking sites, and around public building, mall, beach, transport, and event sites.
7. At the local level, examine outcomes for individual locations, learning from those locations performing well, instigating a strategic, systematic and measurable approach to litter prevention, and building on Statewide or national campaigns but always taking into account local features, character, culture and community expectations.
8. Promulgate the outcomes from this report to local councils and other key stakeholders in litter management and prevention to facilitate a cooperative approach to problem solving and most importantly, recognise achievements.
9. Continue to monitor Statewide performance using CCAT indicators and set change targets (littering behaviour and litter counts), as well as targets for community satisfaction levels.

Victorian Litter Report 2005

Background

Litter is a key community waste issue and Sustainability Victoria¹ has been actively working with strategic partners through the Victorian Litter Action Alliance to build integrated litter prevention approaches based on sound research platforms.

For many years, measurement of litter in the state as an indicator of the effectiveness of government policy and programs. In years gone by, measurement consisted of litter counts, a simple measure of litter on the ground. Such measures were susceptible to the influences of cleaning routines, scavenging and weather conditions, and provided limited information on community behaviour and how the litter actually got there, ie, littering *behaviour*.

People's littering behaviour can be influenced by numerous factors, including the characteristics of public place locations themselves. Public places that are clean, safe and user friendly promote participation of the community (and visitors) in efforts to care for and maintain the location, as well as engendering a sense of ownership and community pride. In contrast, public places that are dirty and poorly cared for attract not only litter, but are more likely to contain graffiti and other characteristics promoting the likelihood of anti-social behaviour and threaten community safety.

Developed by social researchers Community Change, the Clean Communities Assessment Tool (CCAT) provides a systematic assessment of those public place characteristics influencing littering behaviour, as well as indicators of disposal behaviour and litter on the ground. Behavioural data avoids reliance on measures based on the social desirability associated with self-report surveys, where there is a frequent mismatch between what people *say they do* with what they *actually do*. It also provides an opportunity to observe positive behaviour (binning) as well as littering.

In 2003, Sustainability Victoria commissioned Community Change to conduct the Victorian Littering Monitoring Protocol (VLMP) using the CCAT to establish a Statewide benchmark of littering behaviour. VLAA accepted both the VLMP report and the refined CCAT methodology as best practice, which has since been widely accepted throughout Australia and also in New Zealand.

In 2005, Sustainability Victoria commissioned Community Change to use the CCAT to provide information on key indicators of litter reduction program effectiveness compared to baselines established in the 2003 protocol². This report, the Victorian Litter Report (VLR), contains the outcomes of this comprehensive benchmarking exercise.

CCAT Performance Measures, Ratings and Recommendations

The Clean Communities Assessment Tool (CCAT) provides:

- Behavioural data on community littering and importantly, bin use
- Public place ratings of location features that influence littering and bin use
- Information about litter 'on the ground' indicating clean areas and litter hot spots
- Accurate benchmarks to track the progress of interventions and provide feedback on successes as well as problems to be solved
- Clear action oriented recommendations for change at both the community wide and individual location level.

The CCAT categorises disposal behaviour as 'positive' or 'negative' according to whether items have been effectively contained. Negative disposals (littering) includes leaving items on top of full, overflowing or closed bins, brimming, dog owners not cleaning up after dog poo and items being swept or kicked into the gutter. Positive disposals include binning, including cigarette butts being put into permanent butt bins, or personal or opportunistic

¹ Sustainability Victoria formerly known as EcoRecycle Victoria

² Ratings from 2003 benchmarks based on a 5 point scale have been converted to scores (ranging from 0-100) to facilitate comparisons with results from the 2005 assessments.

ashtrays (often empty beverage containers). Other tools developed by Community Change look at correct and incorrect recycling, however for the purpose of CCAT benchmarking, an object placed in a bin (regardless of its recycling status) is counted as a positive disposal, as is returning a shopping trolley to a collection bay or cleaning up dog poo.

When sample sizes are large enough to provide robust indicators of littering (and conversely bin use) a **littering behaviour rate** can be calculated, representing littering behaviours as a proportion of overall disposals (positive and negative).

Using the CCAT, **litter counts** also provide information about litter on the ground and provide an indirect assessment of littering behaviour, particularly when behavioural information is not available. Some caution is required when using litter counts to represent littering behaviour because, as mentioned above, litter on the ground may be influenced significantly by cleaning routines, weather and a range of other factors.

To reduce some of the variability associated with litter counts, a standardised approach counts items littered in a 48 square metre zone that includes, ideally, a bin and furniture or other infrastructure. For CCAT reporting purposes, littered items are categorised into seven item types - paper, organic, confectionery, beverage, plastic film, cigarette, and 'other'.

CCAT ratings assess factors likely to influence disposal actions and other pro-social behaviour in a public place location. Numerous location types may be assessed including malls, parks, beaches, markets, public buildings, landmarks, transport terminals, shops, waterfront areas and roadside stops. Ratings and community consultations via survey are conducted by two trained CCAT assessors visiting a public place location.

Three primary CCAT factors ('Context', 'Facilities' and 'Community Attitudes and Perceptions') are comprised of the following sub-factors:

1. **Context** (using assessor ratings and community surveys)
 - Sense of community
 - Feeling of safety
 - Graffiti
 - Commercial and domestic dumping
 - Overall cleanliness of the location

2. **Facilities** (using assessor ratings)
 - Infrastructure (furniture, landscaping, open space, entrance, boundary markers)
 - Condition
 - Cleanliness including presence of old litter and new litter
 - Maintenance

 - BINrastructure (litter, recycling and butt bins)
 - Number
 - Presentation (design, consistency, signage, colour)
 - Position (prominence, proximity, configuration and placement)
 - Performance (ease of use, size of openings, containment of litter, ability to manage weather)
 - Cleanliness

3. **Community Attitudes and Perceptions** (using community surveys)
 - Adequacy of disposal facilities
 - Attitudes towards the place itself
 - Location specific issues

Assessor ratings for each key factor consists of sub-factor ratings based on a five-point scale with assessments ranging from 'very low', 'low', 'medium', 'high' to 'very high'. The higher the CCAT rating for a sub-factor, the cleaner it is likely to be and the greater the likelihood it will remain clean.

Using sub-factor ratings (from CCAT assessor ratings and community survey data) a score from 0-100 is calculated for each of the three primary factors – 'Context', 'Facilities' and 'Community Attitudes and Perceptions'. A **Summary**

CCAT score is also calculated to represent the location's overall litter prevention performance averaged over all three factors.

As an additional outcome from the detailed rating process conducted in public place locations, assessors develop **location comments and recommendations** (using a systematised procedure) for each *individual* location. These action oriented recommendations for location improvements can be prioritised and rapidly implemented at the local level, promoting the likelihood that the location will be litter free, eg, by improving bin design, positioning, signage, repairing infrastructure, etc.

In summary, the CCAT provides monitoring information on a range of performance indicators useful for determining program effectiveness:

1. Littering behaviour rate (percentage)
2. Summary CCAT score of overall litter prevention performance (0-100)
3. CCAT primary factor scores (0-100)
4. Litter counts (average number) and types of items found in locations (percentage)
5. An indication of community satisfaction and support for litter prevention programs
6. Assessor comments on individual locations and action oriented recommendations.

The CCAT provides a comprehensive method for benchmarking litter prevention performance at a location, municipality, regional and Statewide level.

VLR 2005 Methodology

The Victorian Litter Report was conducted from beginning of May to the end of June 2005 and followed the standardised CCAT data collection procedures used in the 2003 benchmark and described in detail in Appendix A.

Sampling procedures followed the protocols established in the 2003 benchmark study and used a sample frame determined by Sustainability Victoria to represent urban population areas in the Melbourne Statistical District and major regional centres, with some centres selected in 2005 because of their involvement with the 2006 Commonwealth Games. The VLR 2005 sample consisted of 220 locations, with data collection funded by Sustainability Victoria and 27 locations funded through the evaluation of the Commonwealth Games Litter Campaign evaluation program.

A more detailed description of CCAT site types, sample selection procedures and summaries of CCAT outcomes for each location is contained in Appendix B.

The selection of locations for individual location profiling has been described in Appendix C, including examples of individual location profiles which contain recommendations for litter prevention improvements. The selection process for the 110 locations to be profiled in the VLR 2005 gave some priority to local government areas where Games events are scheduled for 2006.

All location profiles completed as part of the Victorian Litter Report 2005 have been presented as a supplement to this report, *Victorian Litter Report 2005 Individual Location Profiles*.

Outcomes

Outcomes from the Victorian Litter Report 2005 have been compared to the benchmarks set in 2003 to track changes in litter prevention efforts at the Statewide level, urban and regional level, and according to site type and local government area.

Statewide Benchmarks

Littering Behaviour and Litter

In 2005, 858 observations of disposal actions recorded throughout the State of Victoria identified 70% of people using bins and disposing of used items appropriately.

The 2005 littering behaviour rate of 30% was slightly higher than the 2003 Victorian baseline of 25%, and the NSW Statewide benchmark in 2004 (26%) as shown in Table 1 and Figure 1. Table 1 also shows the number of littered items found in locations throughout Victoria in 2005 which was significantly less (average 66) compared to the 2003 Victorian baseline (average 82) and 2004 NSW benchmark (average 94)³.

Table 1 Statewide Disposal Behaviour Comparisons

Year of Benchmark	Locations	Bin Use	Littering Behaviour Rate	Littered Items
State of NSW 2004	200	74%	26%	94
State of Victoria 2003	263	75%	25%	82
State of Victoria 2005	247	70%	30%	66
Sustainability Victoria 2006 Target⁴	-	76%	24%	78

Litter prevention and reduction targets for 2006, detailed in the Sustainability Victoria Business Plan *Toward Zero Waste*, have also been included in Table 1. Littering behaviour throughout Victoria in 2005 was above levels targeted for 2006 with the number of littered items lower than 2006 targets.

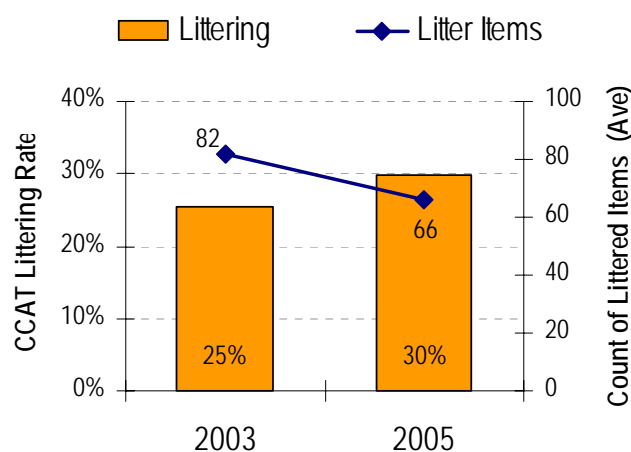


Figure 1 Statewide Disposal Behaviour Comparisons

³ Litter counts comprised the number of items on the ground, in the gutter and in other relevant areas in a location.

⁴ Targets represent a 5% improvement compared to baseline.

In 2005, most Victorians continued to manage their disposal of used items in public places and behave in an environmentally responsible manner, however a slight deterioration was evident compared to the 2003 baseline. Despite the higher littering rate, fewer littered items were evident, most likely indicating an improved approach to litter containment and clean up by relevant authorities.

This complex littering behaviour result suggests that while managers of public places have improved litter containment and collection of items on the ground, the Victorian community has yet to take full responsibility for doing the right thing with used items.

Summary CCAT Scores and Features of Locations

CCAT ratings of the features of all locations assessed throughout Victoria were combined and arithmetically averaged to provide summary results for factors known to influence levels of littering behaviour.

A Summary CCAT⁵ score of 68/100 was found for the State of Victoria indicating a moderate overall level of clean in 2005. This was a slight improvement on the 2003 level (64/100) as shown in Figure 2⁶. The improvement is on track for the targets outlined in *Toward Zero Waste* with more than a 5% improvement over baseline (Sustainability Victoria target set for 2006 was 67/100).

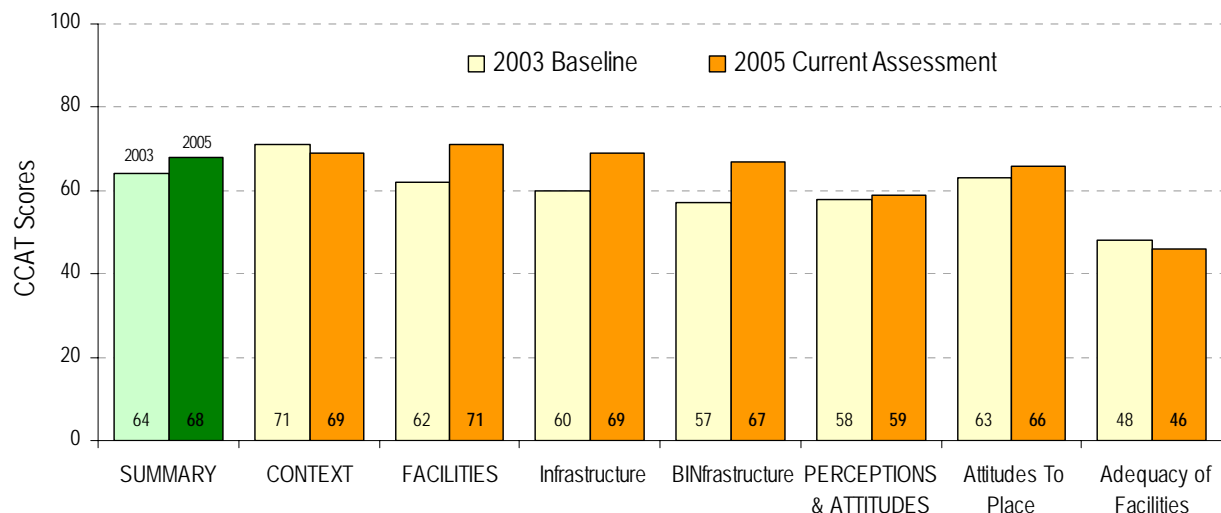


Figure 2 VLR 2005 Summary CCAT and CCAT Factor Ratings

CCAT primary factor outcomes included the following:

1. Context scores indicated that, as in 2003, public places were generally clean, with a sense of community belonging and safety.
2. Facilities in public place locations showed a large improvement (almost 15%) compared to 2003. Both Facilities sub-factors (Infrastructure and BINrastructure) improved in public places throughout Victoria with a trend for well designed, positioned and serviced bins (BINrastructure improved 18%) and improved maintenance, presentation and cleanliness of street furniture, landscaping and boundary markers (Infrastructure improved 15%).
3. Community Perceptions and Attitudes showed no appreciable change compared to 2003. Sub-factor outcomes for Attitudes To Place had improved slightly since 2003 whereas Adequacy of Disposal Facilities had declined slightly.
4. Strengths in the Context and Facilities factors characterised Victorian locations in 2005 with much lower scores evident for community assessments of the Adequacy of Disposal Facilities (bins and infrastructure).

⁵ Summary CCAT scores are shown in green to differentiate the Summary CCAT score from CCAT sub-factor scores.

⁶ CCAT scores have been presented on a 100-point scale. Note that primary factors (in upper case) comprise the sub-factor scores shown in lower case but do not represent an average of the two sub factor scores. For example, the Perceptions and Attitudes score (in upper case) comprises all ratings items for sub-factors Attitudes to Place and Adequacy of Facilities but does not represent a numerical average of the two sub-factor total scores.

- Community perception of the Adequacy of Disposal Facilities was not commensurate with independent CCAT assessor ratings (not shown in figure above), indicating that those using public places may be inclined to make harsher judgements of disposal facilities than are warranted.

In comparison to 2003 benchmarks, the provision of bins and infrastructure and maintenance of public places throughout the state showed improvements in 2005. The strong identity that members of the community clearly have with their local public places appears to result in very high expectations regarding the standard of facilities though. Facilities improvements may benefit from promotion to draw attention to achievements.

Littered Items Found on the Ground

The pattern of items littered throughout Victoria in 2005 was very similar to 2003 benchmark outcomes as shown in Figures 3 and 4.

The items of litter most frequently found were confectionery related items, usually in the form of chewing gum which, although a fairly low frequency behaviour, persists in locations long after it has been littered. Confectionery related items comprised two fifths of all items counted, with cigarette related litter contributing over one third and beverage related items comprising just under 10% of items found on the ground. Plastic bags and plastic film wrap continued to form a relatively very small component of items found littered in public places. Clearly, a need exists to review efforts to prevent littering of confectionery related items and clean up chewing gum, a high impact litter problem in public places.

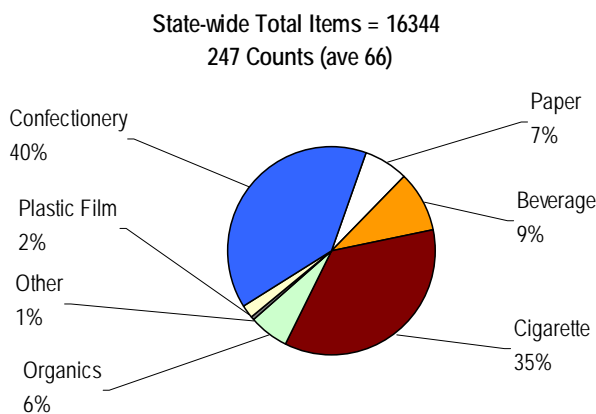


Figure 3 Items Littered 2005

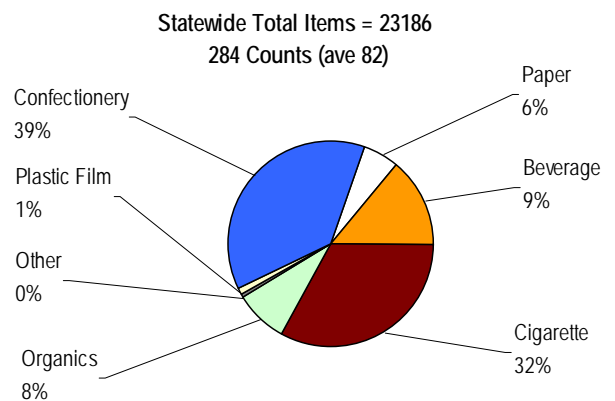


Figure 4 Items Littered 2003

The relative consistency of the composition of items found littered throughout Victoria provides clear priority targets for the development of litter abatement programs. Programs have been undertaken to reduce cigarette and beverage related litter, item types targeted as a result of traditional litter count methodologies where chewing gum was not included.

For comparative purposes, Figure 5 shows the type of items littered throughout Victoria in 2005 with chewing gum excluded from litter count data. With gum excluded, cigarette butts form the large majority of littered items on the ground in Victorian public places.

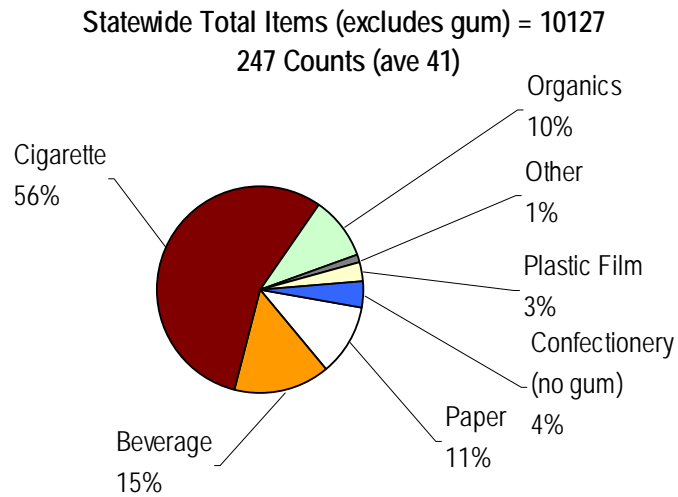


Figure 5 Items Littered 2005

A full list of items included in each of the seven item types can be found in Appendix D.

Consulting Victorians – Community Awareness of Litter

Statewide Demographic Profile

People in Victorian public places were consulted about their views on litter as part of the CCAT survey conducted in all locations where people were present and where those approached agreed to be interviewed. In total, almost one thousand people participated in surveys throughout 247 locations. In 2005, on average, four people per location were surveyed compared with just under three surveys per location in 2003.

Statewide, survey sample sizes were robust enough to enable reporting of demographic comparisons between urban and regional locations as shown in Table 2.

Gender and Age

In both 2003 and 2005, slightly more women than men were surveyed with no difference in the ratio of men to women in public place locations in Melbourne metropolitan areas and Victorian regional centres.

Table 2 Community Surveys Gender Comparisons

Year of Benchmark	Men	Women	Total	Percent Female
Statewide 2003	343	402	745	54%
Statewide 2005	491	507	998	51%
Urban 2005	310	318	628	51%
Regional 2005	181	189	370	51%

The slight difference between the number of men and women surveyed did not appear to be associated with any practical differences or trends in the survey data.

The majority of those surveyed in VLR 2005 were aged less than 45 years, similar to 2003. In 2005 there were some differences in the pattern of age groups evident in regional and urban locations as shown in Figure 6.



Figure 6 Age Groups in Sample Locations

Typically, people in regional public place locations were somewhat older than those in urban settings, with the majority of those surveyed in urban locations younger than 35 years (55%) and most surveyed in regional areas 35 years of age or older (60%).

Education and Employment

Education and employment profiles showed the typical respondent to have a secondary education and to be working as shown in Figures 7 and 8. The educational background of urban survey respondents was more likely to include tertiary (university) education with those in regional areas more likely to have secondary school as the highest level of education undertaken.

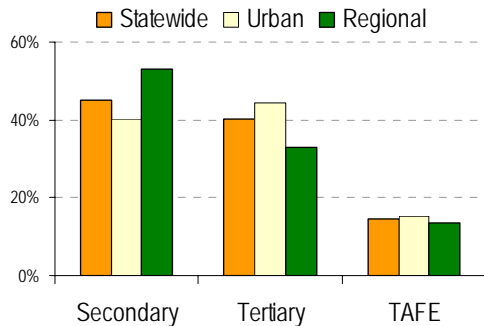


Figure 7 Education Profile

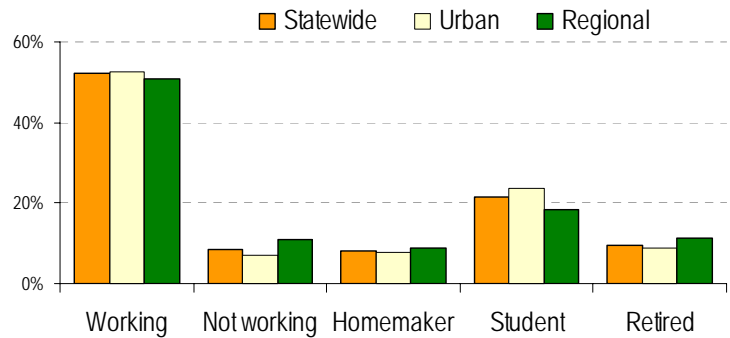


Figure 8 Employment Profile

In relation to employment, there were no major differences between those surveyed in regional or urban locations, with the exception of urban locations where students were somewhat more evident.

Place of Residence

The large majority of those surveyed considered themselves local to the area where the interview was conducted (60%) as shown in Figure 9. Respondents in regional locations though were more likely than those in urban areas to be locals, and less likely to be out of towners.

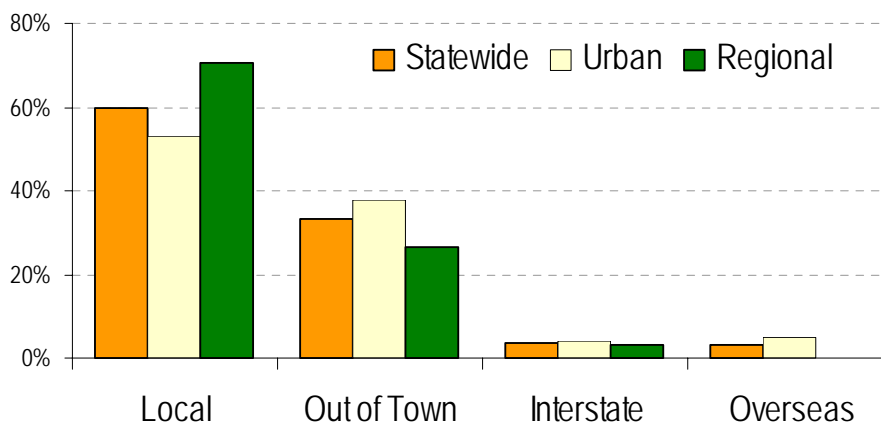


Figure 9 Place of Residence Profile

In summary, the VLR 2005 demographic profile indicated that most of those interviewed were local to the area, employed, and with a secondary school education. Compared to their counterparts in urban locations, respondents in regional public places were more likely to be local, older and to have secondary school as the highest level of education undertaken. Respondents in urban locations were more likely than those in regional public places to have undertaken some tertiary education and were more likely to be current students.

Community Assessment of Litter Prevention and Litter Management Satisfaction

Community perceptions of litter prevention and satisfaction with litter management were assessed throughout the state with outcomes from urban and regional respondents shown in Figure 10.

Just under two fifths of Victorians were 'very satisfied' with litter management in their local area and indicated that the location was usually very clean. When asked to look around the location at the time of the survey and make an assessment of the amount of litter present in the location, over half the respondents indicated it was 'very clean'.

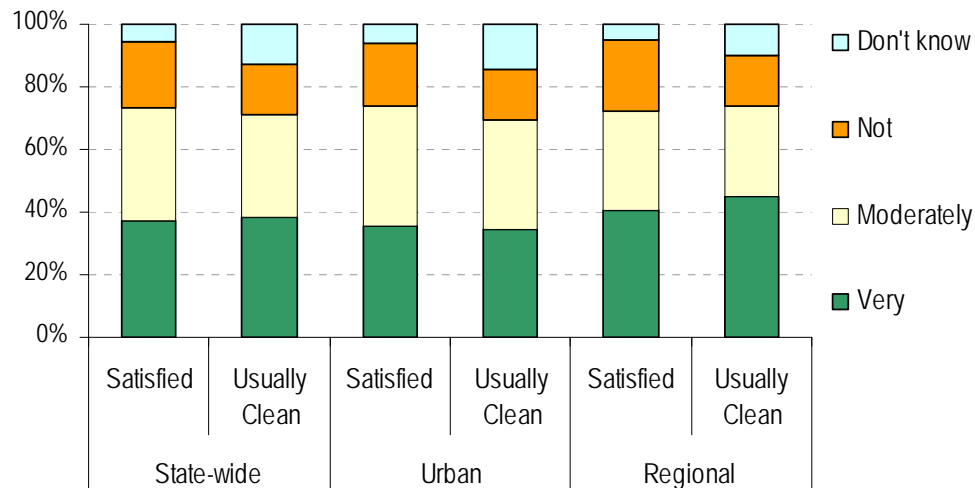


Figure 10 Community Assessments

Respondents were also asked to indicate the extent to which particular suggestions for improving litter prevention were needed in locations throughout Victoria, with their responses summarised in Figure 11. Two fifths supported more frequent cleaning of locations (40% indicating it was 'very much needed') with less support expressed for improving bin servicing (38%) and improved bin placement (35%).

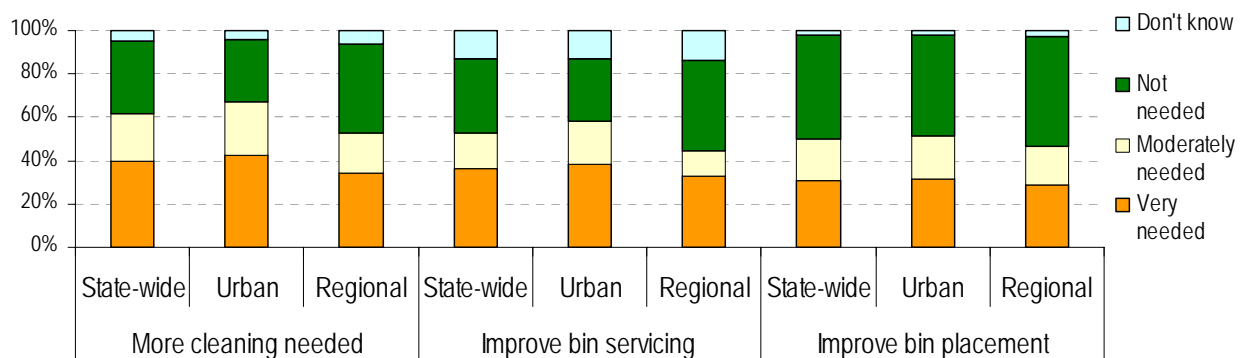


Figure 11 Community Support for Suggestions to Improve Litter Management

Respondents in regional locations were somewhat less likely to report the need for improved cleaning and bin servicing than those in urban public places, with no differences evident for improved bin placement.

Community satisfaction with litter management and assessments of litter in the location reinforce the previous CCAT Perception and Attitudes outcome (low Adequacy of Disposal Facilities scores) that more could be done to raise standards of litter management. Strategies for improving community assessments of litter management could include more frequent clean up of pockets of litter and servicing of bins, as well as improvements to bin facilities.

Urban and Regional Benchmarks

Littering Behaviour and Litter

Figure 12 summarises outcomes for littering behaviour and the number of littered items found on the ground in regional and urban locations for both 2003 and 2005. In 2005, the difference between littering behaviour rates in the city compared to the country was almost 10%, indicating people in regional public places were more likely to litter than their urban counterparts.

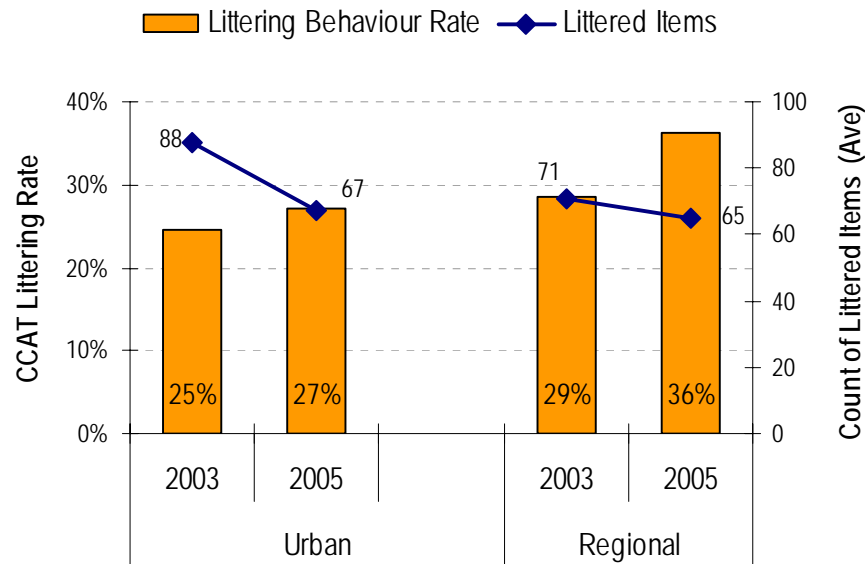


Figure 12 Statewide Urban and Regional Disposal Behaviour Comparisons

In both 2003 and 2005, littering was more common in regional locations, accounting for more than one in three disposal acts. In urban locations, littering accounted for one in four disposal actions. In 2005, urban littering behaviour increased slightly by 2% while regional littering behaviour increased considerably by 7% compared to 2003.

As previously mentioned, there was a Statewide decrease in the number of littered items counted in 2005 compared to 2003. The major change in litter on the ground was largely due to a drop in the number of littered items found in urban locations with an average of 21 fewer items found littered throughout urban locations compared to only 6 fewer items (on average) in regional locations. In 2005, similar numbers of littered items were counted in regional and urban locations with averages of 67 and 65 items, respectively.

Results for 2005 clearly show regional littering behaviour rates at higher levels than in urban settings, indicating the need for an increased focus on behaviour change and litter prevention programs outside of Melbourne. There was little difference in the amount of littered items found in urban or regional locations, indicating that efforts at clean up and containment of used items are likely to be operating at similar levels.

Summary CCAT Scores and Sub-factor scores

In 2005, there was very little difference between CCAT summary scores between urban and regional locations as shown in Figures 13 and 14.

In 2005, a Summary CCAT of 68/100 and 69/100 was recorded for urban and regional locations respectively. Compared to the 2003 baseline, both regional and urban Summary CCAT scores improved (change scores of 5% and 8% respectively). All sub-factor outcomes showed slight improvement from 2003, with the exceptions of Context and Adequacy of Facilities scores which declined slightly for both regional and urban locations.

Summary CCAT scores are shown in green to differentiate the Summary CCAT score from other CCAT sub-factors.

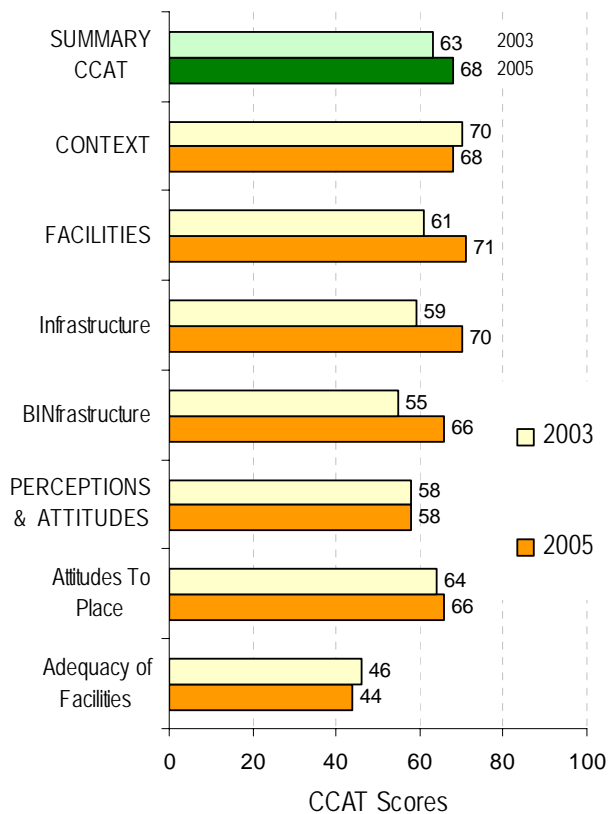


Figure 13 Urban Summary CCAT Scores

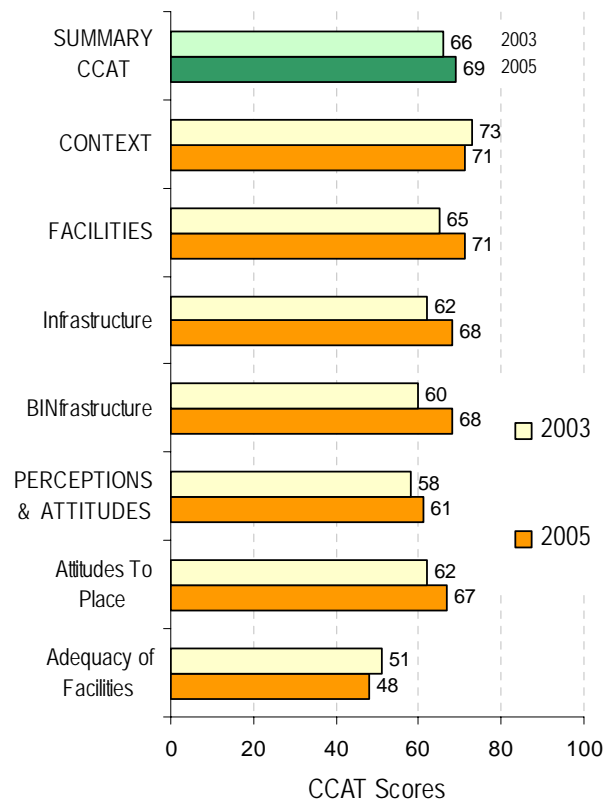


Figure 14 Regional Summary CCAT Scores

Ratings for Facilities were high for both urban and regional locations with the highest level of improvement found in urban settings. BINrastructure scores increased in urban areas by just under 20% in 2005 to almost equal the standard of regional locations where BINrastructure ratings had also noticeably improved since 2003.

There were also substantial improvements in Infrastructure scores for urban locations (almost 20% over baseline) with a similar noticeable improvement in regional public places.

Somewhat surprisingly, while CCAT outcomes showed improvements in Facilities scores, there was a slight tendency for survey respondents in both urban and regional locations to rate facilities at levels even lower than those evident in 2003. Along with the slight decline in the (already high) Context scores this result appears to indicate that some effort may be required to promote a greater community awareness of public place improvements.

Despite the substantial improvement in BINrastructure and Infrastructure scores for both regional and urban locations, a corresponding improvement was not found in community littering behaviour however, with an increase in regional littering behaviour in fact evident. This outcome illustrates the relative complexity of littering behaviour and the fact that improvements in one area alone are not a simple solution to the problem of littering.

Littered Items Found on the Ground

The composition of littered items found on the ground during litter counts in both regional and urban settings was very similar in 2005 and 2003 as shown in Figure 15. At both times, confectionery related litter, usually in form of chewing gum, contributed to approximately two fifths of items counted in both regional and urban settings.

In 2005, cigarette related litter was much more common in regional settings than it had been in 2003 with almost 40% of littered items directly related to cigarette smoking. Cigarette litter was at similar levels in 2003 and 2005 in urban locations, comprising one third of all littered items.

Beverage related litter was somewhat less prominent in 2005 than in 2003, particularly in regional locations.

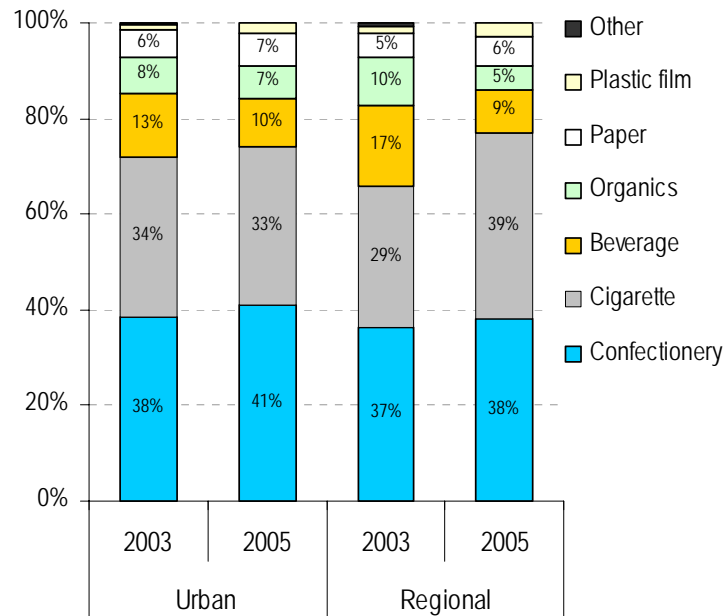


Figure 15 Composition of Urban and Regional Littered Items

Organics comprised approximately 7-8% of items in urban and regional locations in 2003 and 2005, with paper products and takeaway items accounting for around 6% in both settings. Plastic film and wrap contributed around 2-3% to littered items in urban and regional locations.

Site Type Benchmarks

Littering behaviour, bin use and littered items were examined according to site type, both to identify areas requiring priority attention and to recognise achievements. Outcomes have been included for those site types where samples were of sufficient size to enable meaningful conclusions to be drawn. A full list of site type definitions can be found in Appendix B.

Littering Behaviour and Litter

Table 3 summarises outcomes for littering behaviour and littered items in site types throughout Victoria in 2003 and 2005. The littering behaviour rate has been reported when the number of disposal actions recorded during assessments is sufficiently large for indicators of bin use and littering to be meaningful⁷. When numbers of observations are less than 30, the littering behaviour rate has not been reported.

In both benchmarks, transport sites were where most littering behaviour occurred and where most litter was found. In 2005, two fifths of disposal actions observed in transport sites were littering, an improvement though from 2003. Also, fewer littered items were found in 2005 compared to 2003.

Table 3 Site Type Disposal Behaviour Comparisons

Site Type ⁸	2005			2003		
	Locations	Littering ⁹	Litter Count ¹⁰	Locations	Littering	Litter Count
Beach	8	n/a	29	7	n/a	45
Landmark	17	9%	44	11	n/a	72
Waterfront	23	19%	44	14	n/a	40
Park	33	22%	37	38	19%	45
Public Building	28	22%	52	16	n/a	43
Waterfront Precinct	4	n/a	62	3	n/a	46
Mall	16	26%	74	15	21%	100
Shops	43	30%	89	44	27%	103
Event	11	32%	47	4	57%	66
Market	9	36%	25	6	15%	64
Smoking	17	37%	76	17	17%	81
Easement	13	n/a	114	18	n/a	134
Transport	25	40%	116	23	47%	136

Where outcomes on littering behaviour were available for both 2003 and 2005, least littering occurred in park sites in both benchmarks with these locations consistently clean. Parks in 2005 though experienced a slight increase in the littering behaviour rate but had slightly fewer littered items on the ground. As mentioned above, littering behaviour was greatest in transport sites, but also at high levels in smoking and market sites, which had not

⁷ The number of disposal behaviour observations depends on the number of people using the location (affected by weather conditions and other factors).

⁸ For comparison purposes, in 2005, no school, car park or roadside stop site types were assessed.

⁹ Statewide littering behaviour average includes observations obtained from all sites types including those shown as n/a.

¹⁰ Average number of total items found on the ground

previously been the case in 2003. Events though, showed a substantial decrease (25%) in littering behaviour from 2003 to 2005, although levels were still relatively high.

No littering behaviour information was available for waterfront precincts and easements either in 2003 or 2005 but easements contained numerous littered items on the ground in both 2003 and 2005.

In examining 2005 outcomes only, site types demonstrating comparatively low littering behaviour rates were landmark, waterfront, park and public building sites. Although littering behaviour information was not available for beaches, few littered items were evident on the ground. In addition to transport sites, smoking, market and event sites demonstrated the highest littering behaviour rates. Although littering behaviour information was not available for easements, as mentioned above, they typically contained numerous littered items on the ground, similar to transport sites.

Summary CCAT Scores

In 2005, Summary CCAT scores for all site types improved with the exception of easements which remained unchanged, as shown in Figure 16. The overall pattern of Summary CCAT scores for both benchmarks was very similar with the position ranking from highest to lowest scores being largely maintained. Site types with the greatest differences between 2003 and 2005 were beaches (19% above 2003 levels), markets (12% above) and landmarks (9% above). Percentage improvements in Summary CCAT scores from 2003 are shown in Table 4.

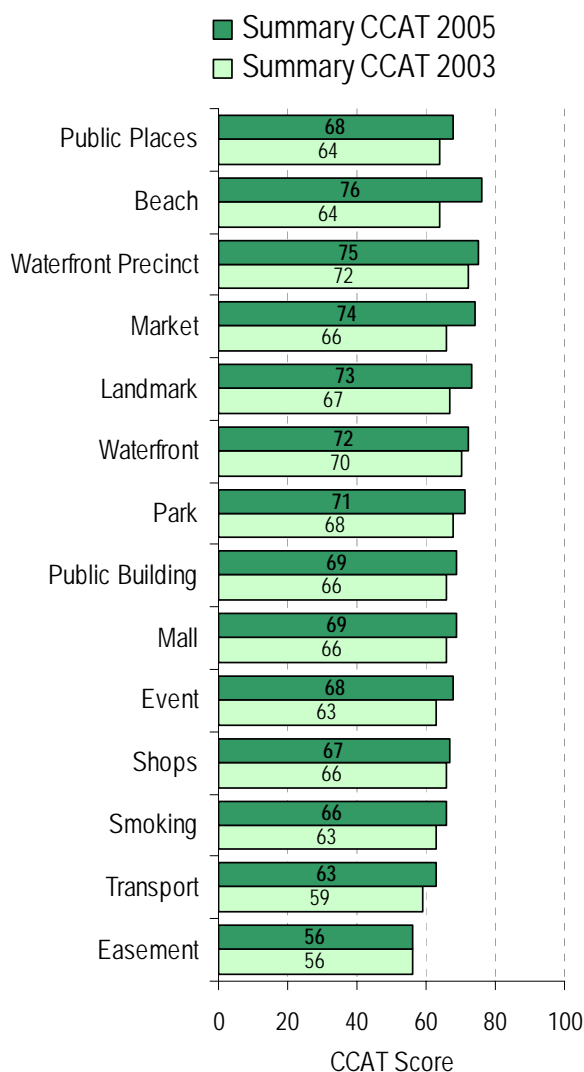


Table 4 Changes in Site Type Summary CCAT Scores

Site Types Studied in 2003 and 2005	Percent Change in Summary CCAT Scores
Beach	19%
Waterfront Precinct	4%
Market	12%
Landmark	9%
Waterfront	3%
Park	4%
Mall	5%
Public Building	5%
Event	8%
Shops	2%
Smoking	5%
Transport	7%
Easement	0%
Victorian Public Places	6%

Figure 16 Site Type Summary CCAT Scores

Improvements of at least 5% above 2003 benchmarks were also evident for event and transport sites. In 2005, as shown in Figure 16, the highest Summary CCAT scores were for beaches, waterfront precincts and markets, with easements, transport and smoking sites at the lower end. In 2003, waterfront precincts, waterfronts and parks were ranked highest. Identical to 2005 outcomes, easements, transport and smoking sites ranked lowest.

Despite some improvement in event, smoking and transport sites in 2005, greater attention to those location features influencing littering behaviour is required for these locations which have not performed well in either benchmark.

CCAT sub-factor scores for all for sites types have been included in Appendix B.

Littered Items Found on the Ground

Table 5 summarises the composition of littered items found in 2005 according to site type. Confectionery wraps and chewing gum comprised more than half the items in landmark and shops sites throughout Victoria. Litter reduction programs clearly need to address the problem of chewing gum which persists in sites long after it has been littered and is a major concern for shops, landmark, transport and event, smoking and easement site types.

Table 5 Composition of Littered Items According to Site Type

Site type	Confectionery	Cigarette	Beverage	Organics	Paper	Plastic	Other
Shops	56%	27%	3%	4%	8%	1%	0%
Landmark	50%	24%	10%	7%	6%	2%	1%
Transport	47%	38%	6%	2%	6%	1%	1%
Event	40%	38%	12%	2%	4%	3%	1%
Smoking	39%	54%	1%	2%	3%	1%	0%
Easement	39%	33%	13%	7%	7%	1%	0%
Mall	37%	40%	3%	11%	7%	2%	0%
Market	33%	29%	7%	12%	9%	6%	3%
Public Building	28%	45%	6%	8%	8%	4%	1%
Park	21%	34%	27%	4%	10%	4%	1%
Waterfront Precinct	16%	32%	2%	47%	2%	1%	0%
Waterfront	10%	30%	39%	10%	8%	3%	0%
Beach	3%	39%	25%	23%	5%	2%	3%

Perhaps not surprisingly, more than half the items littered in smoking sites were cigarette butts. Given this site type is defined according to its main use (smoking) a systematic and thorough approach is needed to ensure the provision of appropriate BIN infrastructure and promotional information to support litter prevention. Cigarette litter is also a major concern around public building, mall, beach, transport, and event sites.

Beverage containers and related litter were a major issue in waterfront sites while organics (mostly in the form of bird poo) were the primary littered item in waterfront precincts.

Local Government Area Benchmarks

Littering behaviour, bin use and littered items were examined according to local government area to check progress with litter prevention at the local level and to promote recognition of achievements. Outcomes for local government areas where exactly the same locations were assessed in 2003 and 2005 have been summarised in Appendix E.

Littering Behaviour and Litter

Table 6 summarises littering behaviour rates and littered items found in local government areas throughout Victoria in 2005. Littering behaviour rates appear only for those areas where sample sizes were sufficient. The cities of Hume, Yarra, Port Phillip and Casey demonstrated very low littering behaviour rates with a large majority using bins to dispose of used items. In contrast, littering behaviour rates were highest in the cities of Greater Bendigo, La Trobe and Dandenong where more than one third of disposal actions involved littering.

Table 6 Disposal Behaviour in Local Government Areas

City ¹¹	Locations	Littering	Litter Count
Manningham*	15	n/a	40
Hepburn Shire Council*	6	n/a	69
Stonington City Council	4	n/a	71
City of Ballarat*	9	n/a	76
Hume City Council*	17	10%	76
City of Yarra	13	13%	108
City of Port Phillip	14	20%	53
Boroondara	1	n/a	65
City of Casey*	22	22%	68
City of Melbourne*	50	30%	83
City of Greater Geelong*	40	32%	80
City of Greater Dandenong*	18	33%	121
Latrobe City	18	35%	53
Greater Bendigo City Council	20	43%	132

In addition to a low littering behaviour rate, the City of Port Phillip also showed relatively few littered items on the ground, indicating people in public places were doing the right thing and litter containment and clean up programs seemed to be working well.

Despite the very low littering behaviour rates in the cities of Yarra and Hume there were comparatively high number of littered items on the ground, indicating perhaps that litter was not being effectively contained and was accumulating. More in line with expectation, relatively high littering behaviour rates in the cities of Melbourne, Geelong, Dandenong and Bendigo were associated with high numbers of littered items on the ground.

¹¹ The asterisk (*) denotes local government areas assessed in both 2003 and 2005.

Summary CCAT Scores

Figure 17 shows Summary CCAT scores according to local government areas assessed in 2005.

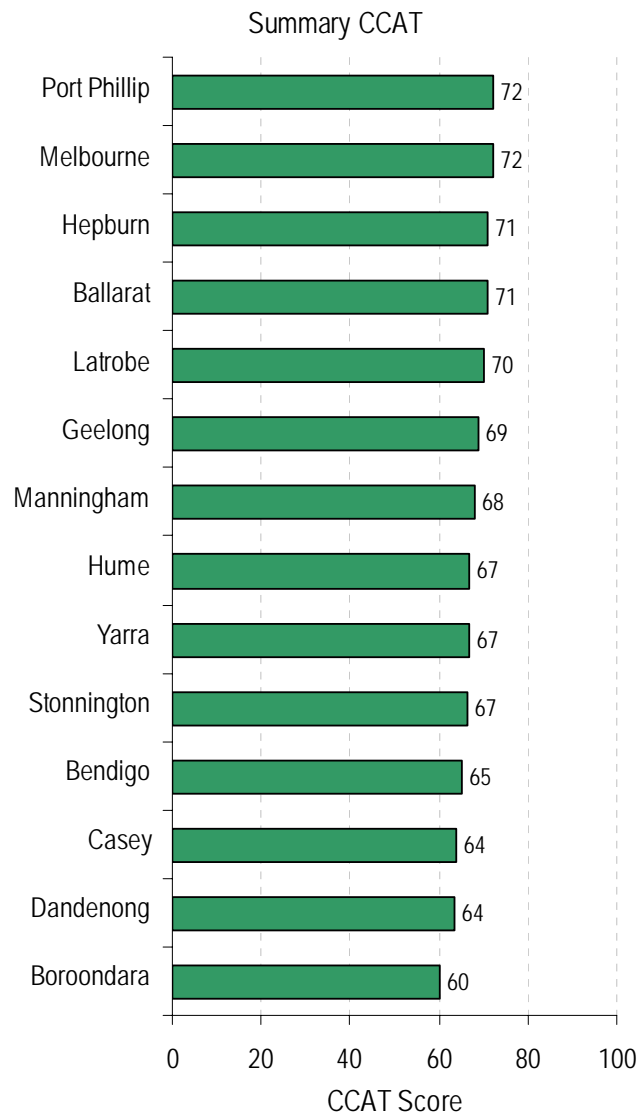


Figure 17 Summary CCAT Scores for Local Government Areas

Summary CCAT scores for the cities of Port Phillip, Melbourne, Hepburn, Ballarat, Latrobe ranked at the higher levels, with a cluster at the lower end including Boroondara, Dandenong, Casey and Bendigo.

Comparatively, although the cities of Bendigo and Dandenong were at the lower performing end of both the CCAT Summary Score ranking and the littering behaviour ranking, this relationship was not as clear in the other local government areas. For example, Latrobe City had a relatively high Summary CCAT score but performed poorly in relation to its littering behaviour rate. Similarly, no clear relationship was apparent between Summary CCAT scores and litter on the ground.

These outcomes are not unexpected due to the fact that categorising locations according to local government area, while having some practical validity in terms of litter management, is not particularly useful in other relevant respects. For instance, local government areas may demonstrate key differences or levels of variation in the site types included in the sample which then result in averages that render cross council comparisons invalid. For councils, a more useful approach involves examining outcomes for individual locations, learning from those locations performing well; instigating a strategic, systematic and

measurable approach to litter prevention; and, building on Statewide or national campaigns but always taking into account local features, character, culture and community expectations.

Some randomly selected examples of individual location profiles and recommendations for litter prevention improvement have been included as Appendix C. All location profiles completed as part of the Victorian litter Report 2005 have been presented in a supplement to this report, *Victorian Litter Report 2005 Individual Location Profiles*.

Conclusions and Recommendations

The Victorian Litter Report (VLR) contains outcomes of a comprehensive benchmarking exercise using the Clean Communities Assessment Tool (CCAT) to provide information on key indicators of litter reduction program effectiveness in public place locations throughout Victoria. The 2005 report compares outcomes to baselines established in the 2003 litter monitoring protocol.

The Clean Communities Assessment Tool (CCAT) provides:

- Behavioural data on community littering and importantly, bin use
- Public place ratings of location features that influence littering and bin use
- Information about litter 'on the ground' indicating clean areas and litter hot spots
- Accurate benchmarks to track the progress of interventions and provide feedback on successes as well as problems to be solved
- Clear action oriented recommendations for change at both the community wide and individual location level.

Statewide Littering Behaviour and Litter

In 2005, 858 observations of disposal actions recorded throughout the State of Victoria identified 30% of people littering, slightly above 2003 levels. The average number of littered items in 2005 was however significantly less than in the 2003 Victorian baseline.

Statewide CCAT

A Summary CCAT score of 68/100 was found for public places in the State of Victoria in 2005, and had improved from the 2003 level (64/100). This improvement was above levels targeted by Sustainability Victoria for 2006 in *Toward Zero Waste* of 67/100.

Facilities in public place locations throughout the state showed a large improvement (almost 15%) compared to 2003 with a trend for well designed, positioned and serviced bins and improved maintenance, presentation and cleanliness of street furniture, landscaping and boundary markers.

Community Expectations of Disposal Facilities

The strong sense of belonging and safety that members of the community clearly had with their local public places appeared to result in very high expectations regarding the standard of facilities. Community perception of the adequacy of disposal facilities was not commensurate with independent CCAT assessor ratings, indicating that those using public places may be inclined to make harsher judgements of disposal facilities than are warranted. Survey respondent satisfaction with litter management and assessments of litter in the location also highlighted the community expectation that more could be done to raise standards of litter management.

Outcomes suggest that while managers of public places have improved location facilities, litter containment and collection of items on the ground, the Victorian community has yet to take full responsibility for doing the right thing with used items. These results also highlight the importance of a comprehensive, strategic approach to litter management and prevention which takes local factors into account.

Urban and Regional Locations

Urban and regional comparisons indicated a Summary CCAT of 68/100 for urban locations and 69/100 for regional public places, with both areas showing improvement since baseline. People in regional locations however were more likely to litter than their urban counterparts, indicating the need for an increased focus on behaviour change and litter prevention programs outside of Melbourne. There was little difference in the number of littered items found in urban or regional locations, indicating that efforts at clean up and containment of used items are likely to be operating at similar levels in both places.

Site Types

Most littering behaviour occurred in transport sites where most litter was also found. Littering behaviour was also at high levels in smoking and market sites, which had not previously been the case in 2003. Events showed a substantial decrease in littering behaviour compared to baseline, although levels were still relatively high. Although littering behaviour information was not available for easements, they typically contained numerous littered items on the ground, similar to transport sites.

Littered Items

The most frequently found littered items on the ground were confectionery related, usually in the form of chewing gum which, although the result of a fairly low frequency behaviour, persists in locations long after it has been littered. Confectionery related items comprised two fifths of all items counted, with cigarette related litter contributing over one third and other item types (beverage, organics, paper and plastic film) each making a contribution of less than 10% to items found on the ground. The comparative consistency of the composition of items found littered throughout Victoria provides clear priority targets for the development of litter abatement programs.

Recommendations

On the basis of these findings, the following actions are recommended:

1. Establish support for regional interventions aimed at improving bin use behaviour by giving priority to litter prevention initiatives in regional areas.
2. Attempt to improve community assessment of litter management by more frequent clean up of pockets of litter, servicing of bins, and promote significant facilities improvements (BINfrastructure and infrastructure) to support community recognition of local achievements.
3. Continue the focus on BINfrastructure and infrastructure improvement, extending this to problematic site types such as transport and smoking sites. Examine individual location recommendations to identify local themes for improvement.
4. As a priority, clean up transport and easement sites, most of which are litter hot spots.
5. Review efforts to prevent littering of confectionery related items and clean up chewing gum, a persisting, high impact litter problem in public places.
6. Employ a systematic and thorough approach to ensure the provision of appropriate BINfrastructure and community education to support cigarette litter prevention in smoking sites, and around public building, mall, beach, transport, and event sites.
7. At the local level, examine outcomes for individual locations, learning from those locations performing well, instigating a strategic, systematic and measurable approach to litter prevention, and building on Statewide or national campaigns but always taking into account local features, character, culture and community expectations.
8. Promulgate the outcomes from this report to local councils and other key stakeholders in litter management and prevention to facilitate a cooperative approach to problem solving and most importantly, recognise achievements.
9. Continue to monitor Statewide performance using CCAT indicators and set change targets (littering behaviour and litter counts), as well as targets for community satisfaction levels.

Appendices

Appendix A: CCAT Methodology

A 'Normal' CCAT Littering Behaviour Assessment

A typical CCAT benchmark assessment project involves:

1. **Determining the specific local issues to be addressed** as part of the standard CCAT methodology, enabling tailoring of recommendations to key stakeholder concerns.
2. **Preliminary visits to locations** to establish an effective approach to assessment logistics to ensure cost effective data gathering and testing of modified tools to ensure suitability. Before data is collected, suitable locations are selected to include a broad array of site types and, if possible, areas known to stay clean most of the time, as well as litter accumulation hotspots. Once locations have been selected during the project preparation phase, their suitability is reviewed in the field prior to CCAT assessment.
3. **Data collection by two trained CCAT assessors** visiting public place locations. CCAT outcomes include behavioural data, information about litter on the ground, public place ratings, location photos, and tailored location comments and recommendations. During a 25 minute session in a particular location, the interviewer approaches as many people as possible to participate. Brief interviews take approximately four minutes to complete and include a series of items to assess key CCAT components. Participants are also asked to give their views on the performance of the facilities and how effective they think the BIN infrastructure is in reducing litter and encouraging people to do the right thing. Surveyors are trained to avoid personal bias in selecting people to survey and use a convenience approach to randomly select people for interview.
4. **Detailed reporting** of community-wide and location specific outcomes to establish benchmarks and provide a basis for ongoing consultation, education and systematic program development.

Inter-rater Agreement

The level of agreement between two independent CCAT raters in a location is determined using an inter-rater reliability protocol which involves two raters assessing the same location at the same time with no discussion of ratings until after data has been entered into the database.

A total of 24 locations had inter-rater assessments completed by six different staff members operating in teams of two and comparisons were made by calculating the concordance rate. The concordance rating showed that in 69% of instances, the two raters agreed exactly on the rating. If adjacent values are included in the concordance rating, then in 99% of instances, raters agreed within 1 ranking difference on either side.

Interpreting CCAT Scores

Location features are rated on a scale from 1 to 5 - the higher the score, the cleaner the feature being assessed. For analysis purposes, the ratings are converted to scores on a scale from 0 to 100 points. Table 7 provides a description of CCAT primary factors at the extreme high and low ends of the scale.

Table 7 Interpretation of High and Low Ratings CCAT Indicators

Key Indicator	Factor	High	Low
Summary CCAT	Features combined in a summary rating	Area likely to be extremely clean and resource recovery successful	Area is highly littered, with contamination of recyclables
Context	Community identity and involvement	Strong sense of pride, ownership over the space	Poor sense of ownership & area is not clean
Facilities	Summarises results for bins and furniture	Extremely well maintained, litter free facilities that are easily used and well positioned	Inadequate facilities, poorly maintained
Infrastructure	Condition & cleanliness of all furniture, streetscape and landscaping	Furniture is extremely well maintained, clean and appropriate	Poorly maintained & surrounded by litter
BINrastructure	Features and cleanliness of all litter, recycling and butt bins	Bin design, position and maintenance is highly appropriate to area and usage patterns	Inadequate number, configuration, positioning or servicing of bins
Public Perceptions & Attitudes	Summary of community views on area	Area is perceived as extremely well looked after and serviced	Area is seen as inadequately presented
Attitudes to Place	Views on the area and expected actions	Strong expectation exists for people to do the right thing with used items	No expectation to do the right thing
Attitudes Towards Disposal Facilities	Perceptions of appropriateness of bins and furniture	Facilities are viewed as highly appropriate and meeting needs of community	Community sees a need to improve facilities

Using the CCAT to Enhance Strategic Planning Processes

The CCAT provides a comprehensive and unique assessment of the key features of locations influencing littering that enables councils to go beyond simply installing more bins to providing strategic guidance for systematic change and sustainable public places.

CCAT assessments can be used to:

1. Identify positive local achievements as well as problem areas.
2. Engage location managers and staff in discussions about changes to be made (rather than arguing about responsibilities and ascribing blame) through credible and constructive feedback based on local successes as well as problem areas, and provide a foundation for ongoing positive improvement.
3. Establish community competencies as well as deficits in relation to litter and littering.
4. Reliably assess, through the use of a proven benchmarking method, the progress of litter prevention and management strategies in fostering sustainable change.

Appendix B: VLR Sample Selection and Site Type Outcomes

Sustainability Victoria selected the VLR sample from the frame of all Local Government Authorities (LGA's). LGA's were then assigned to strata based on population groupings for urban and regional areas. One LGA was selected from each strata for sampling. The Melbourne Statistical District (MSD) and Greater Geelong City Council were included as separate strata and included in the sample selected.

The selection of LGA's for the VLR was based predominately on precedents set in 2003 using geography and population size although in 2005, council areas where Commonwealth Games events were to be held in 2006 were included in the sample frame. That is, LGA's were selected to represent many aspects of the MSD including a range of population sizes, inner and outer metropolitan areas, LGA's from diverse geographic map co-ordinates and those holding Commonwealth Games events.

Review of Site Classification and Selection

Sustainability Victoria updated the site classification and sample selection system in 2005 to ensure that the sample of site types selected for assessment and monitoring were appropriate for representing public places in Victoria.

Selection of sites to be assessed was made to reflect information requirements for particular site types and locations within regions. Some VLR site types were selected more often than others, eg, shopping centres, due to their more frequent occurrence in the local government areas selected.

The random sample of VLR sites selected in a LGA was influenced by the availability of each site type within the chosen locations. For example, a beach site type might have been randomly selected to be assessed in Hume but there are no beaches in that LGA. Consequently the beach site type was replaced by the next available site type in Hume.

In 2005, school, roadside stops and building sites were dropped from the VLR sample. Definitions of site types and the location of sites, together with the location Summary CCAT score and litter count data are presented in the tables below.

CCAT Site Type Definitions

Site Type	Definition
Beach	The sandy area between the water and a boundary or border that clearly marks areas for recreation. This includes boardwalks and grassy areas adjoining the beach such as St. Kilda beach but excludes parks that are adjacent to the beach such as Brighton beach parkland (included in Parks).
Event	A special occasion often involving large crowds of people attending a venue for a significant activity involving leisure, recreation, or sport. eg, AFL and local VFL football, cricket, Grand Prix, Melbourne Cup, etc.
Festival	A special occasion often involving large crowds of people attending functions characterised by food, drink and street entertainment, eg, Moomba Waterfest, Food and Wine festival, House & Garden Festival, etc.. Excludes all sporting events.
Landmark	A place (usually a building) characterised as having some significance in terms of the history or culture of the city, and by sightseeing or tourist activity although not designated as such. The Victorian Parliament building in Melbourne offers sightseeing to visitors but its main activity is government. This site type also includes Federation Square and Myer Music Bowl.
Mall	A pedestrian thoroughfare or sheltered promenade with merchandise and food vendors lining the walkway or street, often with limitations on vehicle access, eg, Bourke Street Mall.
Market	An open or covered space where merchandise and food stalls provide fresh produce and/or a range of goods to the public, which often include seating and eating areas, eg, Queen Victoria Market.
Park	Grassy site with shrubbery or garden beds, children's play equipment, seats and tables, often with barbecue facilities used for picnicking and recreation.
Public Building	An area around a building open to the public, which often includes places for people to sit and eat within walking distance of food vendors, eg, library, post office, council building, museum, court, cinema, hospital, etc.
Easement	The public space or area immediately outside or leading up to a ticketed area of a railway station which provides access to the public. An actual or implied fence line extending to a point of unauthorised entry is the limit of the easement.
Shops	Areas for selling goods or services, often with a vehicular thoroughfare down the middle of a street lined with merchandise and food vendors with wide footpaths and places for people to sit, eg, Chapel Street, Lygon Street, Elizabeth Street, etc. Restaurants and cafes are included in this definition where they have outdoor seating for patrons.
Smoking Area	Places outside a building where cigarette smoking is prevalent. Smokers may be catered for (officially or unofficially) by the placement of permanent or temporary ashtrays.
Transport	Outdoor transport terminal or waiting and transit area with pedestrian traffic going to and from public transport stops, eg, all bus stops and tram stops are outdoor transport terminals.
Waterfront	Area next to a body of water, eg, river, lake or pond, often with seats or grassy areas used by the community for recreation and picnicking, eg, Lake Wendouree in Ballarat, Lake Weeroona in Bendigo, Albert Park lake in Melbourne, Yarra river bank Melbourne. Generally, no significant retail activity takes place in these areas.
Waterfront Precinct	Area next to a body of water with cafes and shops, catering for a mix of tourist and significant retail activity, eg, Southbank and the Docklands area in Melbourne.

VLR 2005 Sample - Locations Assessed and Summary CCAT Scores

LGA	Site	Location	Area	CCAT	LC ¹²
Melbourne	Shops	Elizabeth St	Nr Coles Express	71	44
Melbourne	Shops	Galleria Plaza, Elizabeth St		71	25
Melbourne	Shops	Target Centre, Bourke St		64	26
Melbourne	Shops	Swanston St	Collins & Lt Collins St	69	17
Melbourne	Shops	Lt Collins St		70	24
Melbourne	Shops	Collins St	Centreway	67	58
Melbourne	Mall	Bourke St Mall	Swanston St	73	16
Melbourne	Mall	Bourke St Mall	Elizabeth St	74	15
Melbourne	Mall	Hardware Lane	Lonsdale St End	57	60
Melbourne	Park	Alexandra Gardens		71	16
Melbourne	Park	Flagstaff Gardens		71	9
Melbourne	Park	Gordon Reserve		64	130
Melbourne	Park	Treasury Gardens		72	52
Melbourne	Park	Birrarung Marr	Tollway End	83	2
Melbourne	Park	Fitzroy Gardens		79	9
Melbourne	Waterfront	Queen Victoria Gardens		69	11
Melbourne	Waterfront	Yarra Park	BBQ	73	63
Melbourne	Waterfront	Royal Botanic Gardens	Central Lakes	78	8
Melbourne	Waterfront	Birrarung Marr	Nr Federation Square	74	19
Melbourne	Public Building	State Library		74	38
Melbourne	Market	Queen Victoria Market		85	18
Melbourne	Market	Southbank Sunday Market	Under bridge	75	9
Melbourne	Market	Federation Sq Produce Mkt		77	7
Melbourne	Event	MCG	Tower 3	73	175
Melbourne	Event	MCG	Gate 4	65	46
Melbourne	Event	Olympic Park	Eastern Entry	72	12
Melbourne	Event	Telstra Dome	Bourke St, Ent 2&3	72	11
Melbourne	Event	MCG Footbridge	Tower 4	67	59
Melbourne	Event	MCG Footbridge	Vodafone Arena end	69	17
Melbourne	Event	Vodafone Arena	Main Entrance	74	20
Melbourne	Event	Vodafone Arena	Ticket Collection Ent	75	7
Melbourne	Transport	William St	Bourke St & AMP Sq	73	8
Melbourne	Transport	Flinders St Station		59	58
Melbourne	Landmark	Melbourne Town Hall		79	64
Melbourne	Landmark	VCA		66	66
Melbourne	Landmark	Victorian Arts Centre		73	36
Melbourne	Landmark	City Square		74	22

¹² The average for total littered items counted on the ground is abbreviated to LC - Litter Count

LGA	Site	Location	Area	CCAT	LC ¹²
Melbourne	Landmark	Exhibition Centre		73	59
Melbourne	Landmark	Myer Music Bowl	Outside Bowl	68	7
Melbourne	Landmark	Myer Music Bowl	Nr George V Statue	77	4
Melbourne	Landmark	Exhibition Building		78	9
Melbourne	Smoking	Melbourne Cntrl, Elizabeth St		75	28
Melbourne	Smoking	Defence Plaza		60	58
Melbourne	Smoking	95 La Trobe St		72	47
Melbourne	Smoking	222 Exhibition st		66	59
Melbourne	Smoking	35 Collins st		80	34
Melbourne	Smoking	242 Exhibition st		68	104
Melbourne	Easement	Southbank		61	169
Melbourne	Waterfront Precinct	Southbank		71	119
Melbourne	Waterfront Precinct	Docklands	Quayside	80	7
Geelong	Shops	Market Sq		75	55
Geelong	Shops	Moorabool St		69	59
Geelong	Shops	High St shops Belmont	Centreway	76	29
Geelong	Shops	Separation St		64	136
Geelong	Mall	Lt Malop St Mall		73	44
Geelong	Mall	Labuan Sq		67	76
Geelong	Mall	Highton Shopping Village		59	85
Geelong	Park	Rippleside		79	23
Geelong	Park	Eastern Beach		84	18
Geelong	Park	Johnstone Park		77	19
Geelong	Park	Cameron Pk		65	10
Geelong	Waterfront	Barwon Valley Park		73	13
Geelong	Waterfront	Balyang Sanctuary		75	12
Geelong	Public Building	Wool Museum		68	94
Geelong	Public Building	GPAC		66	72
Geelong	Public Building	City Hall	Entrance	69	18
Geelong	Public Building	Geelong Library		65	65
Geelong	Public Building	Information Centre		83	10
Geelong	Market	Corio Markets	Beckley Park	60	30
Geelong	Beach	Rippleside		77	29
Geelong	Beach	Eastern Beach		74	27
Geelong	Beach	Ocean Grove	Hodgson St	81	2
Geelong	Beach	Ocean Grove	Surf Beach South	87	1
Geelong	Event	Skilled Stadium	Gary Ablett Gate	64	51
Geelong	Event	Skilled Stadium	Polly Farmer Gate	58	25
Geelong	Transport	Moorabool St Bus Stops		66	81
Geelong	Transport	Geelong Train Station		62	110

LGA	Site	Location	Area	CCAT	LC ¹²
Geelong	Transport	Malop St Bus Stops		65	137
Geelong	Transport	High St Bus Stops		65	176
Geelong	Transport	The Terrace	Cnr Hodgson St	70	154
Geelong	Landmark	Waterworld		64	128
Geelong	Landmark	Boer War Memorial Park		65	45
Geelong	Smoking	State Government Offices		69	51
Geelong	Smoking	Centrelink		61	94
Geelong	Smoking	ATO, Brougham St		77	23
Geelong	Easement	South Geelong Train Station		61	31
Geelong	Easement	Lara Train Station		61	17
Geelong	Easement	North Geelong Station		64	16
Geelong	Easement	North Shore Station		51	47
Geelong	Waterfront Precinct	Carousel		76	14
Dandenong	Shops	Walker St		68	17
Dandenong	Shops	Douglas St, Noble Park		68	56
Dandenong	Shops	Springvale Shops	Safeway	72	12
Dandenong	Shops	Athol St shop	Plaza	61	118
Dandenong	Mall	Palm Plaza		71	89
Dandenong	Park	Dandenong Park		73	19
Dandenong	Park	Fotheringham Reserve		68	28
Dandenong	Park	Burden Park		60	106
Dandenong	Waterfront	Dandenong Park	Near Footbridge	72	10
Dandenong	Public Building	Post office on Langhorne St		63	114
Dandenong	Public Building	Springvale Library	Back Entrance	67	50
Dandenong	Market	Dandenong Market		71	17
Dandenong	Transport	McCrae St		52	152
Dandenong	Transport	Dandenong Train Station		59	223
Dandenong	Transport	Springvale Rd Bus Stop	Nan Yang Spmkt	65	29
Dandenong	Smoking	ATO, Mason St		53	71
Dandenong	Easement	Dandenong Train Station		59	125
Dandenong	Easement	Springvale Station	South Side	38	137
Manningham	Shops	Blackburn Rd		68	157
Manningham	Shops	Templestowe Village		72	55
Manningham	Mall	Macedon Sq		71	66
Manningham	Mall	Goldfields Plaza		78	32
Manningham	Park	Koonung Reserve		78	30
Manningham	Park	Ruffey Lake Park		70	52
Manningham	Park	Birrarrung Park	Playground	71	31
Manningham	Waterfront	Finns Reserve		65	75
Manningham	Waterfront	Banksia Park	BBQ	69	2

LGA	Site	Location	Area	CCAT	LC ¹²
Manningham	Public Building	Shoppingtown Branch Library	Nr Westfield Ent	61	68
Manningham	Public Building	The Pines Branch Library		71	6
Manningham	Transport	Westfield Bus Terminal		54	227
Manningham	Transport	The Pines Shopping Centre		63	91
Manningham	Transport	Goldfields Plaza Bus Stop		64	93
Manningham	Smoking	Doncaster, Westfield		67	35
Ballarat	Shops	Sturt St	Book City	60	150
Ballarat	Mall	Bridge Mall	Sturt St End	89	15
Ballarat	Park	Botanic Gdns	Playground	74	32
Ballarat	Waterfront	Wendouree Parade	Gnarr St	77	46
Ballarat	Public Building	Ballarat Information Centre		72	11
Ballarat	Public Building	Ballarat Miner Dome		58	183
Ballarat	Transport	Lt Bridge St Bus Stop		66	156
Ballarat	Landmark	Camp St		72	47
Ballarat	Smoking	Wendouree Village	Nr Library	70	48
Hume	Shops	Royal Hotel, Sunbury		74	40
Hume	Shops	Mahoneys Plaza Shop Centre		76	135
Hume	Shops	Roxburgh Park Shop Centre		80	73
Hume	Mall	Link Arcade, Sunbury		64	41
Hume	Mall	Dallas Square		73	133
Hume	Park	Sunbury Recreation Reserve		63	26
Hume	Park	Broadmeadows Town Park		39	168
Hume	Waterfront	Sunbury Historic Bridge		71	23
Hume	Waterfront	Jack Roper Reserve	Shelter	73	140
Hume	Public Building	Broadmeadows Library		81	65
Hume	Public Building	Council Broadmeadows		69	30
Hume	Transport	Broadmeadows Station	Bus Stops	66	108
Hume	Transport	Sunbury Train Station	Bus Stops	68	138
Hume	Landmark	George Evans Museum		80	10
Hume	Smoking	Centrelink		57	206
Hume	Smoking	Meadow Heights Shop Centre		65	111
Hume	Easement	Broadmeadows Train Station		37	389
Casey	Shops	Berwick Village		69	26
Casey	Shops	Webb St, Narre Warren		65	97
Casey	Shops	Hampton Park Shopping Sq		58	93
Casey	Shops	High St Shops, Cranbourne		68	112
Casey	Mall	Clydesdale Square		67	145
Casey	Park	Wilson Botanic Park		81	15
Casey	Park	Lawson Poole Reserve		73	16
Casey	Waterfront	Akoonah Park, Berwick		69	73

LGA	Site	Location	Area	CCAT	LC ¹²
Casey	Waterfront	Buchanan Park		65	75
Casey	Waterfront	Banjo Paterson Park	BBQ	68	132
Casey	Public Building	Hampton Library		67	10
Casey	Public Building	Narre Warren Library		58	69
Casey	Public Building	Cranbourne Library		62	44
Casey	Public Building	Family Resource Centre		80	9
Casey	Transport	Fountain Gate Bus Stops		52	108
Casey	Transport	Hallam Station Bus Stop		43	30
Casey	Transport	Lyall St		63	113
Casey	Smoking	Clydesdale Mall Cranbourne		66	144
Casey	Smoking	Cranbourne Park Car park	Safeway	66	48
Casey	Easement	Narre Warren Train Station	Car Park side	56	145
Casey	Easement	Berwick Train Station		54	74
Casey	Easement	Cranbourne Railway Station		55	244
Hepburn	Shops	Daylesford Shops, Vincent St		76	36
Hepburn	Shops	Daylesford Shops	Outside Coles	56	135
Hepburn	Park	Hepburn Springs	Sulphur Springs	68	96
Hepburn	Park	Sailors Falls		81	15
Hepburn	Waterfront	Lake Daylesford	Chatfield Reserve	69	74
Hepburn	Landmark	Daylesford Town Hall		73	31
Port Phillip	Shops	Bay St Shops	Outside Coles	71	137
Port Phillip	Shops	Carlisle St	Cnr Woodstock St	73	30
Port Phillip	Shops	Acland St	Safeway	61	130
Port Phillip	Park	Alma Park East		69	25
Port Phillip	Park	Elwood Park		75	6
Port Phillip	Waterfront	Albert Park Playground	nr Albert Sailing Club	84	14
Port Phillip	Waterfront	Pt Ormond Reserve		76	19
Port Phillip	Market	The Esplanade	Opposite Footbridge	71	67
Port Phillip	Beach	Elwood Beach		77	19
Port Phillip	Beach	St Kilda Beach		73	63
Port Phillip	Beach	Port Melbourne Beach		70	62
Port Phillip	Beach	Sandridge Beach		68	32
Port Phillip	Easement	Ripponlea Station		67	28
Port Phillip	Waterfront Precinct	Beacon Cove		73	109
Yarra	Shops	Queen's Parade	Michael St - Cafes	67	106
Yarra	Shops	Victoria St, Richmond	Tan Thanh Hung	56	142
Yarra	Shops	Bridge Road	Richmond Plaza	62	85
Yarra	Park	Darling Gardens	North Terrace Ent	70	8
Yarra	Park	Edinburgh Gardens	Rowe St Entrance	76	7
Yarra	Park	Citizens Park		66	130

LGA	Site	Location	Area	CCAT	LC ¹²
Yarra	Waterfront	Dight Falls		72	23
Yarra	Waterfront	Flockhart Reserve		64	48
Yarra	Public Building	Carlton Library		73	36
Yarra	Market	Collingwood Children's Farm	Farmers Market	89	0
Yarra	Transport	Bridge & Church Tram Stop		50	176
Yarra	Landmark	Collingwood Town Hall		75	100
Yarra	Easement	Richmond Station	Brunton Avenue	57	58
Stonnington	Shops	Glenferrie Rd, Malvern	High & Wattletree Rd	73	124
Stonnington	Shops	High St, Armadale		69	83
Stonnington	Shops	Chapel St, South Yarra	Arthur & Bond Sts	66	110
Stonnington	Shops	Burke Rd, Camberwell	Camberwell Junction	58	167
Boroondara	Shops	Glenferrie Rd, Hawthorn	Linda & Grace Sts	61	132
Bendigo	Shops	Kangaroo Flat Food Market	Car Park Entrance	52	245
Bendigo	Shops	Bendigo Market Place	Safeway	65	113
Bendigo	Shops	Mitchell St Shops		65	132
Bendigo	Mall	Hargreaves Mall	Playground	67	71
Bendigo	Mall	Hargreaves Mall	Fountain	60	201
Bendigo	Park	Rosalind Park	Rotunda	71	15
Bendigo	Park	Crusoe Heights Reserve		48	44
Bendigo	Waterfront	Lake Weeroona	BBQ Area, Nrth Side	70	86
Bendigo	Public Building	Court House		72	32
Bendigo	Public Building	Kangaroo Flat Library		67	33
Bendigo	Public Building	Bendigo Perform Arts Gallery	Capital Entrance	68	108
Bendigo	Public Building	Bendigo Visitor Info Centre	Pall Mall Entrance	68	24
Bendigo	Public Building	Bendigo Schweppes Centre		78	31
Bendigo	Market	Bendigo Showgrounds Market	LR Osborne Pavilion	61	66
Bendigo	Event	Vict Rugby Championships	Nth Bendigo Rec Cmp	56	98
Bendigo	Transport	Lansell Plaza SC	Bus Stop Nr Entrance	71	37
Bendigo	Transport	Hargreaves St Bus Stop		65	110
Bendigo	Transport	Bendigo Station		78	63
Bendigo	Landmark	Rosalind Park	Victoria Monument	71	43
Bendigo	Landmark	Rosalind Park Lookout		73	46
Latrobe	Shops	Franklin St, Traralgon	Cnr Seymour St	74	110
Latrobe	Shops	Purvis Plaza	Moore St, Moe	57	166
Latrobe	Shops	Tarwin St	Commercial - George	73	25
Latrobe	Mall	Stockland, Traralgon		66	99
Latrobe	Park	Victory Park	Rotunda	77	5
Latrobe	Park	Newman Park	BBQ	60	39
Latrobe	Park	Rose Garden, Morwell	Corner Maryvale Crs	86	5
Latrobe	Waterfront	Botanical Gardens, Moe	Next to Tennis Courts	73	25

LGA	Site	Location	Area	CCAT	LC ¹²
Latrobe	Waterfront	Kernot Lake	Near Bridge	71	13
Latrobe	Public Building	Post Office, Franklin St		67	45
Latrobe	Public Building	Traralgon Sports Stadium		61	170
Latrobe	Public Building	Moe Library		69	27
Latrobe	Public Building	Council offices, Morwell	Public Entrance	78	6
Latrobe	Market	Kay St Farmers Market		75	15
Latrobe	Transport	Market Street Bus Stop		70	123
Latrobe	Transport	Morwell Bus Stop	Commercial Road	67	200
Latrobe	Landmark	War Memorial	Franklin St, Traralgon	72	29
Latrobe	Smoking	Mid Valley Shopping Centre		57	134

Site Type CCAT Sub-factor Scores 2005

	SUMMARY CONTEXT FACILITIES		Infrastructure	BIInfrastructure	PERCEPTIONS	AttitudeTo Place	Adequacy of Facilities	
Beach	76	81	77	82	75	69	70	65
Easement	56	54	58	56	40	48	59	24
Event	68	73	69	73	57	57	67	38
Landmark	73	73	76	79	67	62	68	49
Mall	69	69	73	72	73	58	65	45
Market	74	79	75	73	76	65	68	59
Park	71	72	72	70	73	65	71	52
Public Building	69	74	69	71	54	62	69	49
Shops	67	67	71	66	73	57	66	40
Smoking	66	63	71	69	69	54	61	38
Transport	63	59	67	60	67	54	59	43
Waterfront	72	71	74	71	70	66	70	58
Waterfront Precinct	75	73	78	82	77	65	72	50

Appendix C: Individual Location Profiles – Sample Selection & Examples

Selection of the 110 locations for individual location profiling was determined by Sustainability Victoria and focussed on representing site types from as broad a range of geographical and population sizes as possible within the total sample of 247. Site type selection for the total sample is shown in Table 8.

Table 8 Site Type and Location Sample

LGA	Beach	Easement	Event	Landmark	Mall	Market	Park	Public Building	Shops	Smoking	Transport	Waterfront	Waterfront Precinct	Total
Ballarat				1	1		1	2	1	1	1	1		9
Bendigo			1	2	2	1	2	5	3		3	1		20
Boroondara									1					1
Casey		3			1		2	4	4	2	3	3		22
Dandenong		2			1	1	3	2	4	1	3	1		18
Geelong	4	4	2	2	3	1	4	5	4	3	5	2	1	40
Hepburn				1			2		2			1		6
Hume		1		1	2		2	2	3	2	2	2		17
Latrobe				1	1	1	3	4	3	1	2	2		18
Manningham					2		3	2	2	1	3	2		15
Melbourne		1	8	8	3	3	6	1	6	6	2	4	2	50
Port Phillip	4	1				1	2		3			2	1	14
Stonnington									4					4
Yarra		1		1		1	3	1	3		1	2		13
Total	8	13	11	17	16	9	33	28	43	17	25	23	4	247

Priority for locations to be profiled was given to locations of interest to Sustainability Victoria for their prominence as Commonwealth Games event locations with 38 such locations selected from the sample as shown in Table 9.

Table 9 Site Type Priority Sample

LGA	Beach	Easement	Event	Landmark	Market	Park	Public Building	Shops	Transport	Waterfront	Waterfront Precinct	Total
Ballarat							1					1
Bendigo							1					1
Boroondara								1				1
Geelong	1	1				1						3
Latrobe							1					1
Melbourne		1	8	5	2	2			1	2	2	23
Port Phillip	1							1		1		3
Stonnington								4				4
Yarra		1										1
Total	2	3	8	5	2	3	3	6	1	3	2	38

Of the remaining site types and locations, a further 72 site types were selected for detailed location profiling as shown in Table 10.

Table 10 Site Type Remainder Sample

LGA	Beach	Easement	Event	Landmark	Mall	Market	Park	Public Building	Shops	Smoking	Transport	Waterfront	Waterfront Precinct	Total
Ballarat					1		1		1		1	1		5
Bendigo			1	1	1	1	1		1		1	1		8
Casey		1					1	1	1	1	1	1		7
Dandenong		1					1		1		1	1		5
Geelong	1	1	1	1	1		1	1	1	1	1	1	1	12
Hepburn							1		1			1		3
Hume		1			1		1		1		1	1		6
Latrobe						1	1	1	1		1	1		6
Manningham							1	1	1		1	1		5
Melbourne									1	1	1			3
Port Phillip	1	1				1	1		1			1	1	7
Yarra						1	1		1		1	1		5
Total	2	5	2	2	4	4	11	4	12	3	10	11	2	72

Locations Profiled

The following table lists those locations selected from the site type sample to have detailed litter prevention profiles prepared.

Reason for Profile	City	Site	Location
Games Precinct	Melbourne	Park	Birrarung Marr
Games Precinct	Melbourne	Waterfront Precinct	Docklands
Games Precinct	Melbourne	Landmark	Melbourne Town Hall
Games Precinct	Melbourne	Park	Fitzroy Gardens
Games Precinct	Melbourne	Waterfront	Royal Botanic Gardens
Games Precinct	Melbourne	Market	Federation Square, Farmers Market
Games Precinct	Melbourne	Landmark	Myer Music Bowl
Games Precinct	Melbourne	Market	Southbank Sunday Market
Games Precinct	Melbourne	Event	Vodafone Arena
Games Precinct	Melbourne	Event	Vodafone Arena
Games Precinct	Melbourne	Landmark	City Square
Games Precinct	Melbourne	Waterfront	Birrarung Marr
Games Precinct	Melbourne	Landmark	Exhibition Centre
Games Precinct	Melbourne	Event	MCG
Games Precinct	Melbourne	Event	Telstra Dome
Games Precinct	Melbourne	Event	Olympic Park
Games Precinct	Melbourne	Waterfront Precinct	Southbank
Games Precinct	Melbourne	Event	MCG Footbridge
Games Precinct	Melbourne	Landmark	Myer Music Bowl
Games Precinct	Melbourne	Event	MCG Footbridge
Games Precinct	Melbourne	Event	MCG
Games Precinct	Melbourne	Easement	Southbank
Games Precinct	Melbourne	Transport	Flinders St Station
Games Precinct	Geelong	Park	Rippleside
Games Precinct	Geelong	Beach	Rippleside
Games Precinct	Geelong	Easement	North Geelong Station
Games Precinct	Ballarat	Public Building	Ballarat Miner Dome
Games Precinct	Port Phillip	Waterfront	Albert Park
Games Precinct	Port Phillip	Beach	St Kilda Beach
Games Precinct	Port Phillip	Shops	Acland St
Games Precinct	Yarra	Easement	Richmond Station
Games Precinct	Bendigo	Public Building	Bendigo Schweppes Centre
Games Precinct	Latrobe	Public Building	Traralgon Sports Stadium
Special location	Stonnington	Shops	Glenferrie Rd, Malvern
Special location	Stonnington	Shops	High St, Armadale
Special location	Stonnington	Shops	Chapel St, South Yarra
Special location	Stonnington	Shops	Burke Rd, Camberwell
Special location	Boroondara	Shops	Glenferrie Rd, Hawthorn
Selected sample	Melbourne	Transport	William St

Reason for Profile	City	Site	Location
Selected sample	Melbourne	Smoking	242 Exhibition st
Selected sample	Melbourne	Shops	Target Centre, Bourke St
Selected sample	Casey	Park	Wilson Botanic Park
Selected sample	Casey	Waterfront	Banjo Paterson Park
Selected sample	Casey	Shops	High St Shops, Cranbourne
Selected sample	Casey	Smoking	Cranbourne Park Carpark
Selected sample	Casey	Public Building	Narre Warren Library
Selected sample	Casey	Easement	Berwick Train Station
Selected sample	Casey	Transport	Hallam Station Bus Stop
Selected sample	Dandenong	Waterfront	Dandenong Park
Selected sample	Dandenong	Shops	Douglas St, Noble Park
Selected sample	Dandenong	Park	Burden Park
Selected sample	Dandenong	Transport	Dandenong Train Station
Selected sample	Dandenong	Easement	Springvale Station
Selected sample	Hume	Shops	Royal Hotel, Sunbury
Selected sample	Hume	Waterfront	Jack Roper Reserve
Selected sample	Hume	Mall	Dallas Square
Selected sample	Hume	Transport	Sunbury Train Station
Selected sample	Hume	Park	Broadmeadows Town Park
Selected sample	Hume	Easement	Broadmeadows Train Station
Selected sample	Manningham	Park	Koonung Reserve
Selected sample	Manningham	Waterfront	Banksia Park
Selected sample	Manningham	Shops	Blackburn Rd
Selected sample	Manningham	Transport	Goldfields Plaza Bus Stop
Selected sample	Manningham	Public Building	Shoppingtown Branch Library
Selected sample	Port Phillip	Beach	Elwood Beach
Selected sample	Port Phillip	Waterfront	Pt Ormond Reserve
Selected sample	Port Phillip	Waterfront Precinct	Beacon Cove
Selected sample	Port Phillip	Shops	Bay St Shops
Selected sample	Port Phillip	Market	The Esplanade
Selected sample	Port Phillip	Park	Alma Park East
Selected sample	Port Phillip	Easement	Ripponlea Station
Selected sample	Yarra	Market	Collingwood Children's Farm
Selected sample	Yarra	Park	Darling Gardens
Selected sample	Yarra	Waterfront	Flockhart Reserve
Selected sample	Yarra	Shops	Victoria St, Richmond
Selected sample	Yarra	Transport	Bridge Rd & Church St Tram Stop
Selected sample	Ballarat	Mall	Bridge Mall
Selected sample	Ballarat	Waterfront	Wendouree Parade
Selected sample	Ballarat	Park	Botanic Gdns
Selected sample	Ballarat	Transport	Lt Bridge St Bus Stop
Selected sample	Ballarat	Shops	Sturt St
Selected sample	Bendigo	Transport	Bendigo Station

Reason for Profile	City	Site	Location
Selected sample	Bendigo	Landmark	Rosalind Park
Selected sample	Bendigo	Waterfront	Lake Weeroona
Selected sample	Bendigo	Shops	Bendigo Market Place
Selected sample	Bendigo	Market	Bendigo Showgrounds Market
Selected sample	Bendigo	Mall	Hargreaves Mall
Selected sample	Bendigo	Event	Victorian Rugby Championships
Selected sample	Bendigo	Park	Crusoe Heights Reserve
Selected sample	Geelong	Beach	Ocean Grove
Selected sample	Geelong	Park	Eastern Beach
Selected sample	Geelong	Shops	High St shops Belmont
Selected sample	Geelong	Waterfront Precinct	Carousel
Selected sample	Geelong	Waterfront	Barwon Valley Park
Selected sample	Geelong	Mall	Lt Malop St Mall
Selected sample	Geelong	Public Building	GPAC
Selected sample	Geelong	Landmark	Boer War Memorial Park
Selected sample	Geelong	Event	Skilled Stadium
Selected sample	Geelong	Transport	Geelong Train Station
Selected sample	Geelong	Easement	Lara Train Station
Selected sample	Geelong	Smoking	Centrelink
Selected sample	Hepburn	Park	Sailors Falls
Selected sample	Hepburn	Shops	Daylesford Shops, Vincent St
Selected sample	Hepburn	Waterfront	Lake Daylesford
Selected sample	Latrobe	Public Building	Council offices, Morwell
Selected sample	Latrobe	Park	Victory Park
Selected sample	Latrobe	Market	Kay St Farmers Market
Selected sample	Latrobe	Shops	Franklin St, Traralgon
Selected sample	Latrobe	Waterfront	Botanical Gardens, Moe
Selected sample	Latrobe	Transport	Morwell Bus Stop

Some randomly selected examples of the individual location profiles are shown below.

All location profiles completed as part of the Victorian litter Report 2005 have been presented in a supplement to this report, *Victorian Litter Report 2005 Individual Location Profiles*.

Examples of Urban Location Profiles – Inner City Market and Playground

Assessed: Saturday 11.6.05, 11.00

Traffic Count: 35



Photo 1 Location shot for market

Litter count, total items = 0
Clean location,
number of items too low
for item type analysis

Summary CCAT Score	89
Sub-factor scores	
Context	96
Facilities	91
Infrastructure	93
BINrastructure	90
Public Perceptions & Attitudes	78
Attitudes to Place	78
Adequacy of Disposal Facilities	77

Rater Comments

- The location was extremely clean and almost entirely litter free.
- Excellent litter and recycling facilities were provided. Bins were provided in sets of three with triple bin caps showing the items to be placed in each bin. Signage was clear and informative and differentiated by colour according to stream. Signs were beginning to peel off some of the bins.
- The entrance to the market area was slightly slippery. A worker was observed putting tanbark down on wet and slippery parts of the grassed area. Hay bales had been provided as seating.
- Respondent attitudes towards both the place and the disposal facilities were very positive.



Photo 2 Entrance to market



Photo 3 Litter and recycling facilities

Recommendations

1. Continue excellent existing cleaning program to maintain area as litter free.
2. Continue to provide litter and recycling options with regular emptying of bins when busy. Ensure signage is kept in good condition.
3. Consider installing another set of bins closer to the hay bale seating.
4. Maintain ground surface to current high standard consider putting extra tanbark down as a precautionary measure at busy periods and maintain hay bale seating so it remains usable and neat in appearance.
5. Continue to welcome community involvement with the Collingwood Children's Farm to foster the great existing sense of community.

Inner City Playground and Waterfront

Assessed: Saturday 21.5.05, 12.35

Traffic Count: 8



Photo 4 Locations shot for waterfront and playground

Litter count, total items = 14
Clean location,
number of items too low
for item type analysis

Summary CCAT Score	84
Sub-factor scores	
Context	91
Facilities	87
Infrastructure	79
BINfrastructure	90
Public Perceptions & Attitudes	66
Attitudes to Place	73
Adequacy of Disposal Facilities	54

Rater Comments

- Overall the location was extremely clean apart from small items of old litter near the car park boundary markers.
- There were ample bins in the location placed close to tables and traffic flow areas. Respondents perceived the location had adequate bins, but reported some areas of the park were inadequately serviced. One bin had dog poo bag dispensers attached, however the dispenser was empty.
- There were ample fire-proof butt bins not immediately identifiable as butt bins, which were placed slightly away from where they were needed.
- The entrance and open areas were maintained to a fairly high standard and were mainly free of litter; there was no graffiti on any of the infrastructure in the location. While the area around the furniture was very clean, paint on the seating was peeling off. Also, some of the boundary markers between the car park and the park were broken or coming out of the ground.
- A strong sense of community was evident with people picnicking, walking dogs and exercising.



Photo 5 Butt bin near BBQ



Photo 6 Bins placed near seating areas

Recommendations

1. Continue the excellent cleaning program, ensuring that the area near the car park is also cleaned.
2. Ensure that the dog poo bag dispensers contain bags and that there are adequate places to dispose of used bags in the park.
3. Consider improved signage on the butt bins to assist in identifying their function and position closer to furniture and traffic flow areas.
4. Re-paint the furniture and repair boundary markers.

Outer Metropolitan Train Station

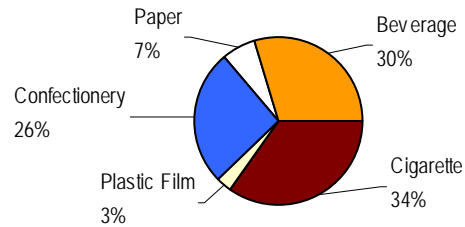
Assessed: Thursday, 16.06.05, 10.25



Photo 7 Location shot for Train Station

Traffic Count: 5

Litter count, total items = 389
Broadmeadows Train Station



Summary CCAT Score

37

Sub-factor scores

Context	38
Facilities	30
Infrastructure	35
BINfrastructure	0
Public Perceptions & Attitudes	45
Attitudes to Place	55
Adequacy of Disposal Facilities	25

Rater Comments

- The area was extremely littered with a lot of litter in the landscaping, beside the boundary markers and along the train track. Litter consisted mainly of butts, bits of broken glass, and commercial and domestic dumping. A bin restrictor was positioned near the bus shelter but there was no bin. Respondents perception of the adequacy of disposal facilities was poor.
- The asphalt and concrete in the open spaces was cracked, not level and a potential hazard. Boundary markers were chipped and the wire mesh on some of the fences was damaged.
- Seating in the bus shelters was in good condition.
- The area felt unsafe as there was a low level of natural surveillance and large amounts of graffiti. Respondents reported the area as a high drug use area with syringes and other drug paraphernalia littered nearby.



Photo 8 Restrictor without bin



Photo 9 Open space surfaces not level

Recommendations

1. Clean up the whole location and review current cleaning program.
2. Consider resurfacing the open space and repair the damaged bus shelter, boundary markers and fencing. Review the current maintenance program with a view to demonstrating a commitment to the location.
3. Replace the missing bin and consider installing a butt bin near the seating.
4. Review surveillance in the area, Use a cooperative approach with local stakeholders to address social problems evident in this location.
5. Install large and clear signs on the easement fences warning that fines will be imposed for dumping, and implement a warnings and sanctions program.

Examples of Regional Location Profiles – Central Shopping Mall

Assessed: Wednesday 15.6.05, 10.40

Traffic Count: 7



Photo 10 Location shot of mall

Litter count, total items = 15
Clean location,
number of items too low
for item type analysis

Summary CCAT Score	89
Sub-factor scores	
Context	95
Facilities	89
Infrastructure	96
BINfrastructure	85
Public Perceptions & Attitudes	85
Attitudes to Place	84
Adequacy of Disposal Facilities	89

Rater Comments

- The mall was extremely clean with the only litter small numbers of cigarette butts.
- There was a strong sense of safety in the area, as the design of the mall allowed for optimal natural surveillance; there was also minimal graffiti in the mall.
- Infrastructure was in exceptionally good condition.
- The material surrounding the trees in the landscaping did not act as a litter trap, in contrast to grates which are frequently used in malls and other public spaces.
- The open space had very little chewing gum, exceptional for a mall.
- There was an adequate number of bins in the mall, however they were difficult to see from the seating areas. There were no recycling or butt bins in the location.
- Bins were all very clean and appeared to have been emptied recently.



Photo 11 Bin and furniture



Photo 12 Landscaping

Recommendations

1. Continue to clean and maintain the mall to its current excellent standard. Consider using the location as an example of effective litter management for other more littered areas in Ballarat.
2. Consider installing butt bins near the seating and moving some of the litter bins to more prominent positions for people using the seating.
3. Consider installing recycling bins with clear signage, adjacent to litter bins in the mall.

Regional Surf Beach

Assessed: Wednesday, 8.06.05, 10.30

Traffic Count: 8



Photo 13 Surf Beach South

Litter count, total items = 1
Clean location,
number of items too low
for item type analysis

Summary CCAT Score	87
Sub-factor scores	
Context	92
Facilities	89
Infrastructure	100
BINfrastructure	85
Public Perceptions & Attitudes	78
Attitudes to Place	76
Adequacy of Disposal Facilities	83

Rater Comments

- Overall the beach was extremely clean. No graffiti was found in the location.
- The bin was very clean and easy to use, but did not protect contents from weather or scavenging.
- The bin was positioned at one entrance (set of steps), but there was no bin at the other entrance.
- Infrastructure was in optimum condition.



Photo 14. Entrance and bin



Photo 15. Open space

Recommendations

1. Continue excellent cleaning and maintenance program.
2. Consider retrofitting bins with covers to protect from weather and scavenging.
3. Consider installing a bin at all entrances to the beach.

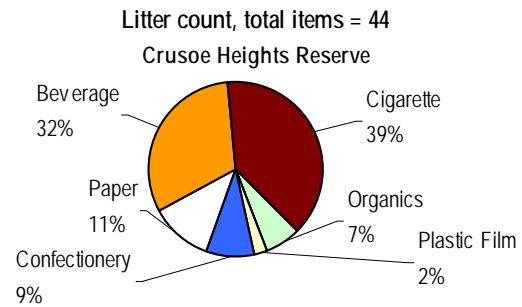
Regional Reserve

Assessed: Saturday, 18.06.05, 14.15



Photo 16 Location shot of the Reserve

Traffic Count: 2



Summary CCAT Score

48

Sub-factor scores

Context	45
Facilities	48
Infrastructure	33
BINrastructure	57
Public Perceptions & Attitudes	52
Attitudes to Place	66
Adequacy of Disposal Facilities	25

Rater Comments

- The location did not feel safe, although some people were observed walking for recreation. There was evidence of drug use including a saline packet and a home made bong. Empty beer bottles were present in and around the bins, with broken glass littered throughout the location.
- Old and new litter was scattered throughout, including condom wrappers, take away food and cigarette butts. Respondents were not satisfied with the adequacy of disposal facilities.
- Furniture was usable, but worn and graffitied which respondents reported had recently become worse.
- Part of the chain fence was missing. Grassed areas were worn and patchy and the landscaping was neglected.
- The car park surface showed tyre marks indicating car burnouts.



Photo 17 Home made bong in bin



Photo 18 Litter around bin and broken fence chain

Recommendations

1. Clean up the entire reserve and review maintenance program for infrastructure and BINrastructure.
2. Consider signage regarding fines for littering and a surveillance program, particularly at night. Use a cooperative approach with local stakeholders to address social problems in the location.
3. Clean the graffiti from furniture and toilets.
4. Repair fence, reseed grassed areas and improve landscaping behind toilets.
5. Consider installing speed bumps in the car park to deter dangerous driving practises.
6. If trail bike riding allowed, install signs on walking tracks to warn pedestrians.

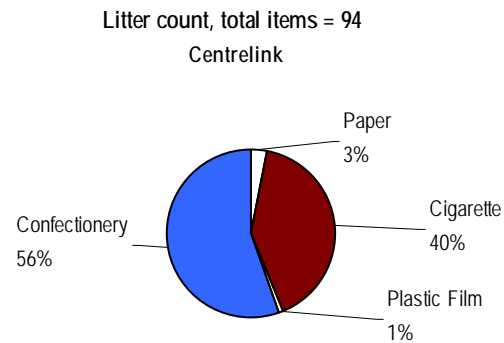
Regional Shopping Strip and Bus Stop

Assessed: Thursday, 9.06.05, 14.45

Traffic Count: 6



Photo 19 Location shot of shops



Summary CCAT Score

61

Sub-factor scores

Context	55
Facilities	67
Infrastructure	58
BINrastructure	71
Public Perceptions & Attitudes	45
Attitudes to Place	59
Adequacy of Disposal Facilities	15

Rater Comments

- The only bin in the area was located at the bus stop, with one butt bin at the entrance to the Centrelink office jammed with litter. Respondents perception of the adequacy of facilities was poor.
- The landscaping was overgrown in places and very littered with cigarette butts. Plants from the pathway/ open space had been removed, leaving only gravel.
- Hand railings were chipped and required painting; some of the path pavers were damaged and potentially hazardous.
- There was a lot of chewing gum on the paving.

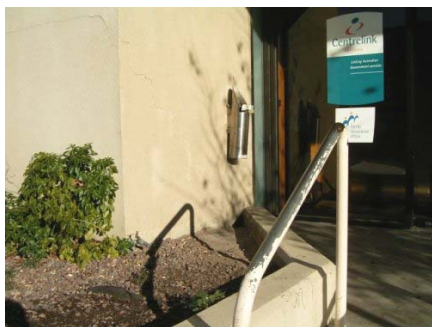


Photo 20 Butt bin at entrance



Photo 21 Plants removed, damaged paving

Recommendations

1. Clean up the chewing gum, cigarette butts and litter from around the landscape and open spaces and review the current cleaning routine ensuring staff remove small pieces of litter.
2. Install a bin at the entrance to Centrelink and consider installing an additional butt bin at the 'bus stop end' of the location to encourage appropriate disposal behaviour.
3. Paint the boundary markers, repair the paving and maintain the landscaping. Monitor the condition of the facilities and increase the frequency of maintenance if required.

Appendix D: CCAT Groupings of Littered Items

Item Type	Items Included
Confectionery	Chewing gum Confectionery wrappers Ice cream wrappers
Paper	Paper bags Serviettes and tissues Receipts and tickets Paper pieces, newspaper, advertising material Takeaway boxes, cardboard boxes, cardboard pieces
Beverage	Glass bottles and pieces Plastic bottles and cups Plastic caps, straws and utensils Paper cups and tetra boxes Aluminium cans, metal caps, ring pulls and pieces
Cigarette	Cigarette butts Cigarette packets, wrappers, foil and matches
Organic	Animal poo Food Wooden utensils
Plastic film	Plastic film, bags and wrappers
Other	Packaging straps Shopping trolleys Syringes Other items not listed above

Appendix E: Identical Locations Assessed in 2003 and 2005

Eight local government areas had exactly the same locations assessed in 2003 and 2005. The results for the 117 locations that were revisited and assessed during the second study are summarised in Table 11.

Table 11 Assessments for the Same Locations in 2003 and 2005

LGAs where identical locations were assessed	Number of locations	Littering Behaviour Rate		Littered Items Found in Location		Summary CCAT	
		2003	2005	2003	2005	2003	2005
Total locations	0	2003	2005	2003	2005	2003	2005
Manningham	9			77	85	66	67
Ballarat	7			100	71	68	73
Hume	8			88	88	65	67
Hepburn	4			43	55	72	73
Casey	11	26%	22%	122	86	60	64
Melbourne	35	22%	29%	68	47	65	71
Geelong	32	28%	31%	73	56	64	68
Dandenong	11	38%	34%	91	80	60	65
Average for same locations		26%	29%	81	64	64	69

With the exception of Dandenong where there was an improvement in *littering behaviour*, all other local government areas demonstrated littering behaviour increases in 2005.

More *litter on the ground* was evident in Manningham and Hepburn locations in 2005. All other local government areas showed decreases in 2005 compared to 2003.

Summary CCAT scores improved in all local government areas with most improvement evident in Casey, Geelong, Dandenong, Ballarat and Melbourne.