Prevention of Cigarette Butt Littering in Metropolitan Melbourne

Evaluation of ‘Don’t Be a Tosser – Bin Your Butt’ Litter Campaign

Submitted to

Grey Worldwide
The Reputation Group
and
Sustainability Victoria

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Executive Summary

This evaluation report describes the impacts of the Cigarette Butt Litter Prevention Campaign on a sample of 60 outdoor public place smoking locations at licensed premises in Melbourne’s CBD and metropolitan areas.

The evaluation assessed:

1. The degree of support for the ‘Don’t be a Tosser, Bin Your Butts’ campaign, using surveys
2. The effect of the campaign on cigarette butt littering behaviour, using a direct observational measure of butt littering, the Cigarette Litter Action Score (CLAS)
3. Factors influencing littering behaviour including litter on the ground, butt BINfrastructure and venue infrastructure designed to provide a comfortable environment for smokers, using the Clean Communities Assessment Tool (CCAT).

‘Land locked’ licensed premises were assessed before July 1, immediately after the launch of the campaign and at the expected peak in August 2007.

Almost 1,900 observations of smoker’s disposal behaviour and 600 surveys were the basis for determining key outcomes for the campaign overall and for categories of licensed premises, segmented according to the level/timing of their adoption of the campaign. Venues were categorised based on the time taken to set up a streamlined smoking area (adopt the innovation) that included provision of basic butt BINfrastructure facilities, butt litter prevention signage (including campaign posters and stickers), a relatively clean location, and associated infrastructure often including outdoor heating, seating and protection from the rain.

Targets set for the main campaign objectives were exceeded with very strong levels of support for the butt litter prevention campaign and the prevention of an increase in cigarette butt littering accompanying the introduction of the legislation after July 1. Key findings included:

1. The attitudinal target of 20% support for the campaign by licensed premises was exceeded at the commencement of the campaign, with 65% of venues indicating very strong support, further increasing as the campaign continued.
2. Throughout the campaign there was a marked increase in satisfaction with litter prevention at licensed premises, however satisfaction levels varied according to the different adopter categories. Smokers at innovator and early adopter venues were most likely to be very satisfied at the peak of the campaign.
3. At campaign peak butt littering was significantly lower than at baseline, with CLAS rates dropping by almost half, from 58% to only 33%. All venues that streamlined smoking areas (adopted the innovation) showed strong positive behaviour change outcomes (albeit at different times in the campaign).
4. In contrast, in straggler locations where smoking areas were non existent or never quite streamlined, littering behaviour was at very high levels with 4 of every 5 smokers (79%) littering butts before the campaign, reducing at campaign peak to 52% of smokers continuing to litter butts.
5. The provision of a smoking area, together with the butt litter prevention campaign was associated with significantly lower levels of littering of butts with some evidence of a generalised effect of the campaign in the absence of specific venue changes. Improvements in behaviour over the course of the campaign were evident regardless of gender or the composition of groups of smokers.

Recommendations

In view of the largely positive attitudes to butt litter prevention activities at licensed premises, efforts to maintain or further improve these activities would be likely to be well rewarded. The success of the campaign in reducing butt littering suggests that such positive outcomes have strong potential to be replicated. Consideration ought to
be given to refining the factors that discriminate adopter categories and tailoring promotions and support to suit specific venue requirements. Outcome information ought to be disseminated to other communities considering the introduction of similar legislation.

A follow up campaign should be considered to maintain or improve attitudes and could be expected to continue to yield strong positive behaviour change outcomes.

The very positive impact on shared responsibility for litter prevention and smoker’s self reported butt littering behaviour suggest that further campaign initiatives should continue or build on current messaging.

Specific outcomes associated with different adopter types of licensed premises should be used to tailor further initiatives to include litter prevention by:

- Facilitating awareness for innovators to manage litter and adjust clean up schedules as required
- Support for installation and maintenance of butt BINfrastructure in straggler locations
- Initiatives in each venue type to address the problem of intractable butt litterers, especially those who fail to extinguish their butts.

A further campaign to support the prevention of butt littering around licensed premises needs to effectively monitor outcomes to ensure independent verification of any consolidation or slippage from gains achieved in the initial campaign.
Evaluation of the ‘Don’t Be a Tosser Bin Your Butts’ Campaign

Background & Introduction

Litter is a key community waste issue and Sustainability Victoria has for many years been actively working with strategic partners to build integrated and sustainable litter prevention approaches based on sound research platforms.

With the introduction of new tobacco laws on 1st July 2007 banning smoking in all licensed premises including outdoor dining and drinking areas, butt litter, already the most frequently littered item, was expected to increase significantly unless action was taken. Sustainability Victoria and its partners undertook a concerted effort to minimise the potential impact of this new legislation on littering outside or near licensed premises.

The ‘Don’t be a Tosser – Bin Your Butts’ campaign, implemented by Sustainability Victoria, aimed to counteract and reduce the expected increase in cigarette butt litter outside pubs and clubs following the July 1, 2007, smoking ban in licensed premises in Victoria.

Following research and an extensive consultation, a coordinated state-wide campaign, harnessing hospitality industry and local government involvement, was developed to offset the litter impacts of the new laws.

The campaign, which ran from February to September 2007, aimed to encourage a collective approach to reducing butt litter between the smoker, licensed premises, local government and state government.

Sustainability Victoria engaged the services of advertising agency Grey Worldwide and public relations consultancy The Reputation Group (TRG) to develop and implement the campaign. To evaluate the success of the campaign, Sustainability Victoria commissioned independent experts in litter assessment, Community Change.

The outcomes presented in this report form the ‘evaluation phase’, the final part of a five phase campaign process, described in detail in the campaign case study report prepared by The Reputation Group. Their case study report includes detailed information on the design and implementation of the campaign, which will not be replicated here.

This evaluation report describes the impacts of the campaign using a sample of outdoor public place smoking locations at 60 licensed premises in Melbourne’s CBD and surrounding metropolitan areas. Activity was focussed on those areas most likely to be affected by the change in legislation, ie, primarily those ‘land locked’ premises in the CBD, and selected metropolitan municipalities.

Compared with pre-campaign levels, the evaluation aimed to assess:

1. The degree of support for the ‘Don’t be a Tosser, Bin Your Butts’ campaign
2. The effect of the campaign on cigarette butt littering behaviour and litter on the ground
3. Factors influencing campaign outcomes.

Measuring Littering Behaviour

People’s littering behaviour is 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

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1 Sustainability Victoria formerly known as EcoRecycle Victoria and the EPA, consider litter as the most visible sign of pollution and, with cigarette butts making up over 50% of all littered items.
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.

Sustainability Victoria recognises principles for influencing disposal actions include communication of expected actions through mass media campaigns supported by consistent and effective community engagement activities, as well as procedures for keeping areas clean and well maintained including using well placed and appropriate BINfrastructure. These principles were adopted in the design and implementation of the ‘Don’t be a Tosser, Bin Your Butts’ campaign.

Based on over 100,000 observations of Australian disposal behaviour, Community Change has developed the Clean Communities Assessment Tool (CCAT) which provides a systematic assessment of those public place characteristics influencing littering behaviour, as well as indicators of littering and litter on the ground and provides an opportunity to observe positive behaviour (binning). It reduces reliance on the social desirability associated with self-report surveys, where there is often a mismatch between what people say they do with what they actually do.

The CCAT was used to systematically assess the impact of the current campaign on:

1. Littering behaviour, with specific use of the Cigarette Litter Action Score (CLAS) as a direct observational measure of butt littering.
2. Those factors influencing littering behaviour including (but not limited to) BINfrastructure and venue infrastructure designed to provide a comfortable environment for smokers.

In order to corroborate the behavioural analysis, Sustainability Victoria and Grey Worldwide provided litter count data from local councils and other stakeholders involved in the campaign, as well as self report and attitudinal data from butt litter prevention champions.

**Nominated Behavioural Objectives**

The campaign nominated a number of objectives for the immediate, medium and long term. These are presented in detail in the campaign case study report prepared by The Reputation Group and include key performance indicator type objectives. Attitudinal and behavioural objectives relevant to the formal evaluation of the campaign are contained in this document.

The two primary objectives against which evaluation of behavioural outcomes were measured are as follows:

1. By the peak of the campaign (T3), at least 20% of licensed premises will be model adopters demonstrating very strong levels of support for the butt litter prevention campaign accompanying the introduction of the legislation.

2. Prevention of an increase in cigarette butt littering will occur in model adopters so that at the peak of the campaign (T3) at the end of August, the littering rate target is to be under 50%, with a stretch target of only 40% of smokers littering butts. After the campaign, smokers will be much less likely to litter and more likely to use bins to dispose of butts.

As previously mentioned, the evaluation also assessed the amount of litter on the ground and factors influencing campaign outcomes, although identified objectives were not specifically set for these areas of investigation.

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1 BINfrastructure is a term coined by Community Change to describe features associated with bins in a location. It is differentiated from Infrastructure which includes other factors such as street furniture.

2 Based on prior comparable research, in the absence of a campaign or other intervention, at baseline (T1) littering rates would be expected to be at levels of 50-60% and could be expected to increase to 70-90% on the introduction of the legislation when smokers were required to smoke outside of licensed premises.
Evaluation Measures & Data Collection Timing

The Clean Communities Assessment Tool (CCAT)

CCAT ratings assess factors likely to influence disposal actions and other pro-social behaviour in 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 and overall cleanliness

2. **Facilities** (using assessor ratings)
   a. Infrastructure (furniture, landscaping, open space, entrance, boundary markers) - condition, cleanliness and maintenance
   b. BINfrastructure (litter, recycling and butt bins) - number, presentation, position, performance and cleanliness

3. **Community Attitudes and Perceptions** (using community surveys)
   a. Adequacy of disposal facilities
   b. Attitudes towards the place itself and other location specific issues

Assessor ratings for each key factor consist of sub-factor ratings based on a five-point scale with assessments ranging from ‘very low’, ‘low’, ‘medium’, ‘high’ to ‘very high’. 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.

The Cigarette Litter Action Score (CLAS) is an outcome measure derived from the actions component of the CCAT and specifically relates to cigarette butt disposals. Appendix D provides a description of the CCAT data collection and interpretation processes.

The Cigarette Litter Action Score (CLAS)

With the primary focus for the project on the disposal of cigarette butts, CCAT assessors noted the specific actions smokers took with their butts. Appropriate disposal of butts included:

1. Putting the butt out and then correctly binning in the butt bin or the litter bin
2. Using a personal ashtray or an improvised ashtray, eg, a drink bottle, and then pocketing the item or otherwise taking it away for later disposal.

Negative disposal of butts included littering or placing the butt on the rim of any bin (including a butt bin).

The Cigarette Litter Action Score (CLAS) is the number of negative disposals (littering of cigarette butts) as a proportion of total cigarette disposals. The CLAS is used to track the specific impact of programs on the littering of cigarettes. The higher the CLAS level, the greater amount of littering of cigarette butts in a location. In the current project, the aim was for the education and public place improvement program to reduce the rate of littering below baseline, with successful behaviour change indicated by lower CLAS levels.

All littering behaviour outcomes for the evaluation have been presented as CLAS measures, with cigarette butt **litter counts** also used to provide information about butt litter on the ground and provide an indirect assessment of littering behaviour, particularly when behavioural information was not available. Some caution is required.
though when using litter counts to represent littering behaviour because litter on the ground may be influenced significantly by cleaning routines, weather and a range of other factors.

**Surveys of Smokers and Staff at Licensed Venues**

Surveys were conducted with people who were smoking outside venues and covered a number of issues including public assessments of the butt BINfrastructure in the area, the level of cleanliness of the location, attitudes to cigarette butt litter and reactions to the introduction of the change on July 1. In particular surveys included assessment of awareness and recognition of the butt litter prevention advertising campaign with the taglines for the campaign – ‘Don’t be a Tosser’ and ‘Bin your Butt’ provided as prompts for interviewers to use to facilitate recognition of the litter campaign during the surveys.

The same survey format was used with staff at licensed premises who were also asked to indicate their reactions and levels of support for the litter prevention campaign. Most venues agreed to participate in surveys at two of the three data collection points while a couple discontinued involvement in the assessment process.

**Timing of Data Collection**

The evaluation was based on matched collection of information from the same locations on the same day evening of the week and at similar times over the three stages of the project which were focussed around the July 1 introduction of the legislated change.

Data collection occurred from Thursday to Sunday evenings over from early June to early September 2007 with:

1. **T1 Pre (Baseline):** During the month immediately prior to the introduction of the legislation and campaign
2. **T2 Launch:** During the first month immediately following the launch of the campaign and legislation on July 1.
3. **T3 Peak:** During the peak of the campaign commencing one month after the launch and concluding two months after the close of the campaign.

Baseline data collection at T1 involved assessments from people smoking in areas adjacent to and around licensed premises prior to the introduction of the legislation. These people may have been engaged in activities such as waiting for friends; chatting outside away from inside venue noise; walking past venues; waiting in venue queues; on breaks from work (at nearby workplaces including the venue staff); or simply choosing to smoke outside. Many locations had set aside areas for outdoor smoking prior to the July 1 change.

During the campaign after the introduction of the change on July 1 there were greater numbers of people around venues smoking and the location of smoking areas was streamlined for many licensed premises.

Unfortunately, particularly inclement weather conditions (especially rain and high winds) occurred consistently throughout data collection which had a significant impact on lowering expected numbers of observations and interviews in the evaluation.

The inclement weather also had an impact on conditions in smoking areas at licensed premises including bin function; presentation and maintenance (see photographs below). In total 48 planned observational sessions after the campaign launch were rescheduled or lost due to the winter weather and no smokers using outdoor areas.

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4 Generally data collection ceased between 2100 and 2130 depending on weather conditions and the number of smokers outdoors.
Many outdoor smoking areas were affected by rain.

**Venue Differences in Adoption of Change**

After completion of all data collection, it was evident that licensed premises were found to be at different stages of adoption of changes associated with legislative requirements and in particular, varied in the time taken to establish and streamline the operation of an outdoor smoking area. Key outcomes and results have therefore been grouped to take account of this important variable using a modified version of Rogers\(^5\) model of stages of adoption of innovation.

A licensed premise was classed as having established and streamlined a smoking area if it provided a combination of the following features that facilitated cigarette smokers doing the right thing with their butts - provision of basic butt BINfrastructure facilities, butt litter prevention signage (including campaign posters and stickers), a relatively clean location, and associated infrastructure often including protection from the rain, outdoor heating and seating. Table 2 describes the features of adopter categories including the time when licensed premises adopted a discrete streamlined smoking area for smokers.

Identifying details of the locations assessed and the different categories of locations are held by Sustainability Victoria and have not been provided in this report.

**Table 1 Features of Change Adopter Categories**

<table>
<thead>
<tr>
<th>Stage for adopting change</th>
<th>Typical features</th>
<th>Time smoking area streamlined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovator</td>
<td>Venturesome, opinion leaders, able to cope with risk, intrinsically motivated</td>
<td>Before July 1</td>
</tr>
<tr>
<td>Early Adopter</td>
<td>Respectable, extrinsically motivated, accepting of relative advantage of change</td>
<td>At campaign launch</td>
</tr>
<tr>
<td>Mainstream</td>
<td>Deliberate, sceptical, often the majority, more likely to follow peer leaders</td>
<td>At least one month after launch</td>
</tr>
<tr>
<td>Straggler</td>
<td>Traditional, reticent, dogmatic, less likely to see the need for change, resist change</td>
<td>Not streamlined</td>
</tr>
</tbody>
</table>

The adopter stages are not intended to reflect levels of compliance with the law, but rather venue efforts to create a specified area for smokers which appeared to meet all criteria, for instance, going beyond simply providing a butt bin, bucket or sand box at the entrance or relying on street litter bins to provide butt facilities. The photographs illustrate the extent to which management in some licensed premises went prior to July to prepare their customers for the new laws.

During the campaign the extent to which signage was visible in front of licensed premises varied with some locations clearly establishing the expected behaviour of smokers - not to litter and to use the smoking area - and to do so responsibly (as shown in the sign in the photograph on the right hand side below).

**Innovator Locations**

Many licensed premises in both Melbourne and wider metropolitan areas provided outdoor smoking areas which were sustained as designated smoking areas throughout the study. The photographs below show examples of butt BINfrastructure and facilities innovator locations prior to July 1.
Some innovator venues included outdoor areas that were heated and well serviced with a variety of butt BINfrastructure as shown below.

Photograph 5 Facilities at innovator locations

**Early Adopter Locations**

Early adopter locations had streamlined smoking areas ready to go immediately after July 1 and were ready to cater for smokers in areas supplied with appropriate butt BINfrastructure as shown in the photographs below.

Photograph 6: Early adopter butt BINfrastructure after July 1
Some of the smoking areas set up by early adopters to cater for the change are shown in photographs below.

Mainstream Locations

Many licensed premises had plans to establish smoking areas on the commencement of the legislation but for some, it took time to establish or streamline butt BINfrastructure and an appropriate space for smokers.

The photographs below show some of butt bins and ashtrays and smoking areas in mainstream locations.
Straggler Locations with Incomplete or No Improvements

Locations where only limited improvements were attempted or where no changes were made to butt BINfrastructure were classified as straggler locations where still greater effort would be required to create a streamlined smoking area. Some of the butt BINfrastructure and changes implemented in the straggler locations are shown below.

Photograph 9 Butt BINfrastructure in straggler locations
Outcomes

Sample Features

A summary of the data collected at each stage is presented in the table below. It includes the number of locations assessed in CBD and Metropolitan Melbourne, number of behavioural observations, and interviews conducted with members of the public and staff at licensed premises. Appendix A contains details of the licensed premises included in the final sample.

<table>
<thead>
<tr>
<th>Area in Melbourne</th>
<th>Locations Assessed</th>
<th>Observations Butt Disposals</th>
<th>Surveys Pre</th>
<th>Launch</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBD</td>
<td>34</td>
<td>201</td>
<td>36</td>
<td>44</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>32</td>
<td>451</td>
<td>44</td>
<td>23</td>
<td>95</td>
</tr>
<tr>
<td></td>
<td>34</td>
<td>499</td>
<td>95</td>
<td>28</td>
<td>108</td>
</tr>
<tr>
<td>Metropolitan</td>
<td>30</td>
<td>51</td>
<td>24</td>
<td>24</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>406</td>
<td>24</td>
<td>15</td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>381</td>
<td>92</td>
<td>21</td>
<td>85</td>
</tr>
<tr>
<td>Total</td>
<td>64</td>
<td>252</td>
<td>60</td>
<td>68</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>58</td>
<td>857</td>
<td>68</td>
<td>187</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>64</td>
<td>880</td>
<td>187</td>
<td>193</td>
<td></td>
</tr>
<tr>
<td>Sample</td>
<td>186 locations assessed</td>
<td>1,898 disposals of butts</td>
<td>595 surveys including 147 staff surveys</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Appendix B contains the detailed breakdown of the demographic features of people surveyed which was primarily collected from smokers (78%) over the evaluation. During baseline, the proportion of smokers surveyed was lower (62%) than after the launch (85%) and at the peak of the campaign (79%) when all smokers from licensed premises were required to smoke outdoors. Throughout the report survey data will be referred to as ‘smoker data’ given the clear majority of respondents during the campaign were smokers. Outcomes for smokers and non-smokers will be presented together unless there were major differences between these groups.

Similarly the majority of surveys were from the public (75%) using outdoor smoking areas with 25% of surveys from staff (either within the licensed premises or in the smoking areas during work breaks). Responses have been reported for staff and the general public combined unless major differences were evident between these groups.

The patterns for behaviour change during the campaign were also similar across different demographic segments of the sample and these have been presented in Appendix C which demonstrates the consistency and similarities in disposal behaviours in smoking areas during the campaign.

Support for the Campaign

Promotional personnel worked as cigarette butt litter prevention champions during the campaign. The ‘champions’ visited licensed premises prior to the commencement of the campaign and distributed cigarette butt litter prevention kits, discussed the forthcoming changes to be introduced on July 1 and rated the degree of support and enthusiasm for the campaign shown by staff at the licensed premises. During the campaign Community Change staff conducted interviews with staff about the campaign and rated the degree of support and enthusiasm for the campaign expressed at the licensed premises.

The target for stakeholder support from licensed premises for a successful campaign was set at 20% of licensed premises indicating very strong levels of support for the butt litter prevention campaign accompanying the introduction of the legislation. Figure 1 shows the overall level of support for the campaign at baseline and campaign peak, as well as support levels according to change adoption category.
Key Outcomes

1. Overall, the attitudinal target of 20% support was exceeded at the commencement of the campaign with almost two thirds (65%) indicating very strong support. Furthermore, at the overall level, the extent of support for the campaign increased as the campaign continued and almost half (46%) expressed extremely strong levels of support at the peak of the campaign.

2. At baseline, innovators and early adopters tended to show somewhat higher levels of support than mainstream and straggler venues where there was some delay in accommodating smokers and establishing areas for guiding appropriate disposal actions.

3. By campaign peak, support increased for all groups except stragglers. It may have been that the initial enthusiasm and support from stragglers was tempered by the difficulties or delays in setting up appropriate facilities particularly given some of the constraints associated with streamlining smoking areas around land locked venues.

Satisfaction with Venue’s Litter Butt Prevention Efforts

Assessment of the impact of the campaign was provided by smoker’s assessment of their level of satisfaction with litter prevention efforts at the venues as shown in Figure 2. The figure shows those who were ‘very satisfied’ with venue efforts at baseline, following campaign launch and at the peak of the campaign.
Key Outcomes

4. Overall, throughout the campaign phases, there was a marked increase in respondents who were ‘very satisfied’ with efforts at litter prevention, however there were very different starting points for satisfaction levels for licensed premises in the different adopter categories.

5. Innovators and early adopters tended to be very satisfied both before and during the campaign. These levels continued to rise at the peak of the campaign, showing a clear positive result.

6. In mainstream licensed premises there was a starting point of satisfaction similar to innovators and early adopters, possibly associated with the existing facilities in these locations such as nearby street litter bins with butt ashtrays attached. During the campaign when nothing further was done, the number of smokers very satisfied dropped and did not increase until changes were streamlined at least one month after the campaign launch.

7. Straggler locations demonstrated very low satisfaction starting points with only 7% ‘very satisfied’ (the majority, 65%, indicated moderate levels of satisfaction) which possibly reflected some of the difficulties associated with providing facilities at these venues. However during the campaign, satisfaction levels increased as some efforts were made to accommodate cigarette butt litter.

Behaviour Change - Cigarette Butt Littering

The campaign behaviour change target was to prevent increases in cigarette butt littering expected after July 1 when smokers were required to smoke outside licensed premises.

Figure 3 shows Cigarette Litter Action Score (CLAS) levels overall and for the different adopter categories, according to the various phases of the campaign. It will be recalled that the lower the CLAS level, the lower the level of butt littering behaviour, indicating positive disposal of cigarette litter.

![Figure 3 Cigarette butt littering levels](image)

Key Outcomes

8. The campaign smoker’s behaviour change target exceeded expectations. During the campaign, outside licensed premises, butt littering was significantly lower than baseline, with CLAS rates dropping by almost half by the end of the campaign to only 33% of all smokers, as shown in Figure 3. The provision of a

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4 The pattern of disposal actions was also true for littering of all items around licensed premises.
smoking area, together with the butt litter prevention campaign was associated with significantly lower levels of littering of butts.

9. Innovator locations, already with smoking areas, demonstrated lower initial littering rates (CLAS 35%) than the overall average (CLAS 58%). These low rates dropped a further 10% during the campaign, an extremely positive result. Innovator venues showed the lowest littering rates of all adopter types.

10. In early adopter locations, where smoking areas were streamlined by the time of the launch, butt littering rates dropped and remained low through to campaign peak.

11. Littering behaviour in mainstream locations did not follow the pattern of results for the other adopter types, but appeared to conform to the original expectations for the program where increased littering was expected after July 1 when smokers were required to be outside. Once location features and smoking areas were streamlined at campaign peak, littering rates dropped to below baseline levels.

12. In straggler locations where smoking facilities and areas were non existent or never quite streamlined, littering behaviour was at very high levels, exceeding littering levels for all other adopter types for all phases of the evaluation. Prior to the campaign, 4 of 5 smokers (79%) were littering butts outside these venues; at campaign peak, half of smokers were littering. There was however a clear reduction in littering over the course of the campaign despite these areas never being streamlined, indicating a generalised effect of the campaign in the absence of specific venue changes.

Improvements in behaviour over the course of the campaign were evident regardless of gender or the composition of groups of smokers (ie, male peers, female peers or mixed gender) congregated outside licensed premises. For more detail, see the figure presented in Appendix C.

**Intractable Cigarette Butt Litterers**

Interestingly there was a core group of smokers who, despite being in locations well served with ashtrays and butt bins, continued to litter cigarettes and to do so in a dangerous fashion, ie, littering a burning butt, even in locations where the sub culture was well set for appropriate disposal, as shown in Figure 4.

![Figure 4 Disposal of littered butts](image)

**Key Outcomes**

13. In all change adopter categories, a group of intractable litterers littered burning butts, even in innovator locations with existing streamlined facilities.
Cigarette Butt Litter

In addition to littering behaviour, litter on the ground was also assessed. As mentioned previously, litter on the ground is susceptible to many influences including weather and location cleaning routines. Although measurement of behaviour formed the focus of this evaluation, litter counts may provide extra information on the environment in which behaviour occurs.

Standard litter counts used in previous Community Change litter studies use an area of 48 square metres in which to count littered items. In this study, smoking areas were differing sizes, with many being smaller than 48 sq m. Figure 5 therefore shows the number of butts littered in the ground adjusted for this variation.

Key Outcomes

14. Overall, compared to baseline, no differences in litter counts were evident over the course of the campaign, perhaps demonstrating the dual impacts of inclement weather and lack of attention to venue clean up.

15. Although there were numerous differences between change adopter categories in relation to litter on the ground, the meaning of these is not immediately clear. However, the litter count patterns broadly match CCAT assessor ratings of the overall cleanliness of locations, confirming the pattern of data. In any case, it seemed that perhaps more attention to clean up needed to be paid by innovators, as it appeared that this activity may have suffered at the expense of the positive attention paid to other improvements made. In contrast, mainstream and straggler premises, although having been delayed in making changes, or made limited or no effort to implement change, may at least have felt the pressure to clean up the litter themselves.

CCAT Ratings - Features of Locations Influencing Littering

CCAT ratings of the features of all locations (factors and sub factors) assessed during the campaign were combined and arithmetically averaged to provide summary results for factors known to influence levels of littering behaviour at baseline (T1), following the launch (T2) and at campaign peak (T3) as shown below.
Key Outcomes

16. A Summary CCAT score of 67/100 was found at baseline and indicated a low to moderate overall level of clean prior to the commencement of the campaign. The Summary CCAT level did not change for venues during the campaign indicating that overall, when all CCAT factors were combined, there was not a substantial change in the features of locations influencing disposal actions.

17. Clear improvements were evident in two CCAT factors compared to baseline indicators, BINfrastructure and Adequacy of Disposal Facilities.

18. BINfrastructure scores improved from baseline to immediately after the campaign launch and were maintained through to the peak of the campaign. Gains in BINfrastructure ratings were largely due to licensed premises proving improved butt BINfrastructure.

19. The CCAT score for the adequacy of butt bins and disposal facilities to cater with litter around venues improved during the campaign, indicating smokers were aware of the improvements being made by venues to capture butt litter.

The pattern of improvements in BINfrastructure and awareness of the changes to bins were explored for the different adopter categories where the timing of the introduction of changes differed and are shown in Figure 7.

Key Outcomes

20. Overall, compared to baseline, improvements in BINfrastructure were noted for all adopter categories.

21. Improvements in smoker’s perception of the adequacy of bins occurred in all locations except innovator venues which already had the highest score.

22. BINfrasstructure scores improved once smoking areas were streamlined in early adopter and mainstream venues. There was also a slight improvement in straggler locations when basic butt bins were provided.
23. Generally smoker assessments of the adequacy of bins were associated with the eventual streamlining of a smoking area. Some improvement occurred for smokers in straggler locations when some buckets and cans were provided for butts.

**Distance to Bins**

For all observations of disposal behaviour (either littering or binning) the average distance to the closest bin was determined, as shown in Figure 8.

![Figure 8 Distance to BINfrastructure](image)

**Key Outcomes**

24. As expected, overall, smokers were closer to an appropriate disposal receptacle following baseline when improvements to butt BINfrastructure were introduced after July 1.

25. Innovators had small bin distances (average 2m) early by baseline, with further refinements made over the course of the campaign. Early adopters had made changes after the launch and at the campaign peak, to achieve the same average bin distance as innovators. Mainstream venues were able to achieve similar outcomes by campaign peak, with stragglers making at least some improvement with buckets, tin cans and other makeshift containers, although the average bin distance at campaign peak was a high 17m.

26. When bin distances were examined according to whether the person binned or littered the butt, binners were typically closer to bins while litterers were generally further away. Both binners and litterers however, were closer to a bin over the course of the campaign compared to baseline.

**Type of BINfrastructure Used by Smokers**

Figure 8 shows the proportion of smokers using different types of bin according to the various change adoption categories, over the course of the campaign.
Key Outcomes

27. The major difference between the categories of adopter locations is the reliance and use of different types of bins for capturing cigarette butts. Both innovators and early adopters relied heavily on providing ashtrays in smoking areas as well as, to a lesser extent, using the more permanent butt bins. The provision, removal and servicing of ashtrays outside these venues involved a commitment from staff and management to maintain and service clean butt BINfrastructure.

28. In mainstream locations where change was adopted at a later stage in the campaign there was a greater reliance on more permanent solutions such as butt bins mounted on walls or nearby litter bins to provide for smokers. In straggler locations, the use of ashtrays was very restricted and opportunistic personal ashtrays such as an empty bottle cans or cigarette packets were often used by smokers.

29. Extremely few instances of personal ashtray use were evident throughout the campaign, confirming findings from previous studies.
Smoker Satisfaction with Number of Ashtrays

Respondents demonstrating very strong levels of agreement with the number of ashtrays present at the licensed premise are shown in Figure 8, according to change adopter category, and over the course of the evaluation.

![Figure 10 Smoker support for number of ashtrays](image)

**Key Outcomes**

30. Overall, respondents were increasingly supportive of the number of ashtrays present in a location over the course of the campaign.

31. Support for ashtray numbers was strongest for innovator locations, with this support clearly increasing over time.

32. At campaign peak, support was at lowest levels for straggler locations.

33. Higher levels of support were evident for early adopter and mainstream locations, once changes were streamlined.

Smoker Satisfaction with Bin Proximity

Respondents demonstrating very strong levels of agreement with the closeness of bins are shown in Figure 9, according to change adopter category, and over the course of the evaluation.

![Figure 11 Smoker support for proximity of bins](image)
Key Outcomes

34. Overall, respondents were increasingly supportive of bin proximity ('butt bins/disposal facilities are where you need them') over the course of the campaign.

35. This increasing level of support was evident for all change adopter categories. Interestingly, low pre-campaign levels of support for mainstream and straggler locations increased markedly, with smokers in these locations more likely to be satisfied by campaign peak than other location types. As mentioned previously, the fact that stragglers had made at least some improvement with buckets, tin cans and other makeshift containers (even though bin distance was a high 17m) appeared to have been noticed by smokers.

Attitudes and Awareness of Litter Prevention Campaign

Key Responsibility

Respondents demonstrating very strong levels of agreement with who is perceived as responsible for butt litter prevention are shown in Figure 11, according to change adopter category, and over the course of the evaluation.

Figure 12 Responsibility for preventing littering of cigarette butts outside licensed premises

Key Outcomes

36. During all phases of the campaign, the vast majority of respondents strongly agreed that smokers were responsible for prevention of butt littering. Respondents were next most likely to see prevention as a shared responsibility, followed by government, council and venues.

37. By the end of the campaign, compared to baseline, respondents were less likely to report that council and government were responsible, ie, these were the only two sources of responsibility to change over the course of the campaign.
Self Report of Littering Behaviour

Self report of littering behaviour over the course of the evaluation is shown in Figure 12.

![Figure 12: Self report of littering behaviour](image)

### Key Outcomes

38. Smokers were more likely to admit to littering than non-smokers (‘I never litter’, ‘I haven’t littered today’ and ‘I haven’t littered at other times’). This was the case for all phases of the campaign.

39. Compared to baseline, at campaign launch and at campaign peak, smokers were less likely to report that they littered, ie, they reported improved behaviour over time. Although this was confirmed by a reduction in actual observable littering behaviour (as previously reported), the self report outcomes present a much more positive picture than would seem to actually be the case.

### Campaign Recognition and Recall

Respondent’s level of campaign recognition and recall is presented below in Figure 13.

![Figure 13: Campaign Recognition and Recall](image)
Key Outcomes

40. Approximately one quarter of community respondents were able to recall the campaign unprompted at campaign launch; this level had not changed by campaign peak. Compared to community respondents, the initial recall level at launch was somewhat higher for venue staff (37%), which, unlike the community, had increased by campaign peak (47%).

41. When prompted with the campaign’s taglines, almost 40% of community respondents were able to recognise the campaign; this level had increased by campaign peak (50%). Staff recognition levels were higher than the community at launch with 50% recognising the campaign. Similar to the community, this level increased over the course of the campaign (65%).

Figure 15 below shows where smokers had seen or heard campaign messages.

42. At campaign launch, most smokers reported hearing about the campaign on radio (34%), followed by TV (27%), billboards (22%), venue posters (13%) and launch news releases (11%). Other sources were at levels below 10%.

43. By campaign peak this had changed, with TV now the most frequently reported source (35%), followed by venue posters (33%), radio (30%) and billboard (20%). Other sources were at levels below 10%.
Community assessments of the campaign’s message, its impact and the need to continue the campaign are shown in Figure 16.

Key Outcomes

44. There was extremely strong support for continuance of the campaign and that respondents understood what the campaign was trying to communicate. Respondents were also strongly supportive of the campaign’s ability to raise awareness among the community, and that it’s recall value was high.

45. Respondents were less supportive of the idea that the campaign would actually change behaviour or stop butt littering, or in fact that it changed their own personal attitudes. This is congruent with a number of other litter prevention studies where people are generally supportive of any attempt to influence community behaviour, but are less inclined to see themselves as personally influenced by such attempts.
Summary Conclusions and Recommendations

A summary of findings and conclusions from the evaluation is provided below under topic headings (shown in green), with findings numbered sequentially throughout this section for easy reference. Recommendations specific to each topic have been labelled in brown.

Support for the Campaign

1. The target of at least 20% of licensed premises demonstrating very strong levels of support for introduction of the legislation was exceeded at the commencement of the campaign with almost two thirds (65%) indicating very strong support. The extent of support increased as the campaign continued.

Recommendation A

In terms of smoker attitudes, the campaign had unequivocal benefits. In view of the extremely positive attitudes demonstrated by the community, further efforts to maintain or improve attitudes at follow up should be considered, as they would be likely to yield strong positive outcomes.

Satisfaction with Venue’s Butt Litter Prevention Efforts

2. Throughout the campaign, there was an increase in respondents who were ‘very satisfied’ with efforts at litter prevention, both overall and for each adopter category. Smokers at innovator and early adopter venues were most likely to be ‘very satisfied’. Straggler venues showed very low levels of satisfaction at baseline which had increased markedly by campaign peak.

Recommendation B

In view of the largely positive attitude to venue’s butt litter prevention activities, efforts to maintain or further improve these activities would be likely to be well rewarded. Stakeholders at straggler venues in particular may benefit from further support to ensure changes are consolidated.

Behaviour Change - Cigarette Butt Littering

3. The campaign behaviour change target was to prevent increases in cigarette butt littering expected after July 1. Behavioural outcomes exceeded expectations, with the provision of a smoking area together with the butt litter prevention campaign associated with reduced littering of butts.

4. Butt littering rates in smoking areas across all licensed premises fell from 58% to 33% at the peak of the campaign. Even the behaviour change stretch target of a littering rate of 40% was exceeded, with an additional 7% reduction in littering from expected levels.

5. At campaign peak, innovator venues showed the lowest littering rates of all adopter types. In straggler locations where smoking facilities and areas were non existent or never quite streamlined, littering behaviour was at very high levels, exceeding littering levels for all other adopter types for all phases of the evaluation. There was however a clear reduction in littering over the course of the campaign despite these areas never being streamlined, indicating a generalised effect of the campaign in the absence of specific venue changes.
Recommendation C
The success of the campaign in reducing butt littering suggests that such positive outcomes have strong potential to be replicated. Consideration ought to be given to refining the factors that discriminate adopter categories and tailoring promotions and support to suit specific venues requirements. Outcome information ought to be disseminated to other communities considering the introduction of similar legislation.

Recommendation D
Those venues for which changes provided more of a challenge (for a variety of reasons) should be provided with follow up support to assist in the establishing and consolidating further improvement in positive behaviour change.

Recommendation E
Follow up should also be provided for venues where outcomes were extremely positive, both to acknowledge successes and to assist in maintaining behaviour change in the long term.

Intractable Cigarette Butt Litterers

6. In all change adopter categories, a group of intractable litterers littered burning butts, even in innovator locations with existing streamlined facilities.

Recommendation F
Further investigation should be undertaken to establish the underpinnings of intractable littering, in order to formulate an appropriate strategy to address this problem. Any potential solution should be congruent with existing campaign aims and messaging.

Cigarette Butt Litter

7. Overall, compared to baseline, no differences in litter counts were evident over the course of the campaign, perhaps demonstrating the dual impacts of inclement weather and lack of attention to venue clean up.

8. The meaning of numerous differences between change adopter categories in relation to litter on the ground was not immediately clear. However, the nature of these differences suggested that more attention to clean up may have needed to be paid by innovators, as this activity may have suffered at the expense of the positive attention paid to other improvements made. Mainstream and straggler premises, although having been delayed in making changes, or made limited or no effort to implement change, may at least have felt the pressure to clean up the litter themselves.

Recommendation G
Any planned venue follow up should attempt to determine the relative role of clean up activities in the adoption of the change process for different venues and whether adjustment to cleaning activities needs to be made or whether litter on the ground during the evaluation was more likely to have been an artefact of inclement weather conditions.

CCAT Ratings - Features of Locations Influencing Littering

9. A Summary CCAT score of 67/100 found at baseline indicated a low to moderate overall level of clean prior to the commencement of the campaign, which did not change over the course of the campaign, indicating there was not a substantial change in the features of locations influencing disposal actions.
10. Clear improvements were however evident in two CCAT factors compared to baseline indicators, Binfrastructure and Adequacy of Disposal Facilities.

11. Compared to baseline, improvements in Binfrastructure were noted for all adopter categories, with scores improving once smoking areas had been streamlined. Improvements in smoker’s perception of the adequacy of bins occurred in all locations except innovator venues which already had the highest score.

Recommendation H
Continue to improve the positive impact of smoking areas by continuing to acknowledge positive changes made by venues, as well as supporting straggler venues in further streamlining of smoking areas. Although not the focus of this campaign, there is room for facilitating further positive changes to disposal behaviour by focussing on infrastructure improvements (other than bins) to create comfortable, clean smoking areas.

Location Binfrastructure Characteristics

12. As expected, overall, smokers were closer to an appropriate disposal receptacle following the installation of Binfrastructure after baseline. By campaign peak, all adopter types with the exception of stragglers were able to achieve bin distances of 2-3m. Binners were typically closer to bins than litterers but both groups were closer to a bin over the course of the campaign compared to baseline.

13. Different adopter locations relied on different types of bins for capturing cigarette butts, with both innovators and early adopters relying heavily on ashtrays and, to a lesser extent, the more permanent butt bins. In mainstream locations there was a greater reliance on butt bins mounted on walls or nearby litter bins. In straggler locations, the use of ashtrays was very restricted and opportunistic personal ashtrays such as empty bottle cans or cigarette packets were often used by smokers.

14. Extremely few instances of personal ashtray use were evident throughout the campaign, confirming findings from previous studies.

15. Smokers were increasingly supportive of the number of ashtrays present in a location over the course of the campaign, with strongest support evident for innovator locations and least at straggler venues.

16. Overall and for all change adopter categories, respondents were increasingly supportive of bin proximity ('butt bins/disposal facilities are where you need them') over the course of the campaign.

Recommendation I
Follow up of straggler locations should focus on assistance with addressing specific barriers preventing the successful installation of appropriate Binfrastructure and ashtrays. Follow up of other adopter category type venues should acknowledge positive bin and ashtray placement efforts, and address any outstanding changes which might assist in facilitating further improvements.

Recommendation J
The distribution of personal ashtrays as campaign giveaways is not supported by outcomes, even if anecdotal support for them is expressed by stakeholders. Resource and environmental effort would be better re-directed to other campaign features likely to elicit positive measurable outcomes.

Attitudes and Awareness of Litter Prevention Campaign

17. During all phases of the campaign, the vast majority of respondents strongly agreed that smokers were responsible for prevention of butt littering. Respondents were next most likely to see prevention as a
shared responsibility. Council and government were less likely to be seen as responsible as the campaign progressed.

18. For all campaign phases, smokers were more likely to admit to littering than non-smokers (‘I never litter’, ‘I haven’t littered today’ and ‘I haven’t littered at other times’). Over the course of the campaign, smokers were less likely to report that they littered.

19. Venue staff respondents were more likely then the general community to recall the campaign (both prompted and unprompted). Prompted recall levels increased for both groups over the course of the campaign. By campaign peak, 50% of general community respondents and 65% of staff demonstrated prompted recall of the campaign.

20. At campaign launch, most smokers reported hearing about the campaign on radio (34%), followed by TV (27%), billboards (22%), venue posters (13%) and launch news releases (11%). By campaign peak, TV was the most frequently reported source (35%), followed by venue posters (33%), radio (30%) and billboard (20%).

21. There was extremely strong support for continuance of the campaign and that respondents understood what the campaign was trying to communicate. Respondents were also strongly supportive of the campaign’s ability to raise awareness among the community, and it’s recall value was high. Respondents were less supportive of the idea that the campaign would actually change behaviour or stop butt littering, or in fact that it changed there own personal attitudes.

Recommendation K

The very positive attitudes towards the campaign, including its impact on perceived responsibility and self reported butt littering behaviour, suggest that further campaign initiatives or follow up are likely to lead to a further improvement in outcomes. Any follow up initiatives should continue or build on current messaging, using recall source data to inform decisions about communication channels. The specific outcomes associated with different adopter types of licensed premises suggest that tailoring further campaign initiatives ought to include:

- Facilitating awareness for innovators to manage litter and adjust clean up schedules as required
- Support for installation and maintenance of butt BINfrastructure in straggler locations
- Initiatives in each venue type to address the problem of intractable butt litterers, especially those who fail to extinguish their butts.

Effective Campaign Assessment of Littering Behaviour, Attitudes and Changes to Butt BINfrastructure

22. The design of the evaluation used integrated outcomes from multiple data sources and provided an effective basis for discriminating campaign adopter segments from licensed premises. Use of the CLAS and CCAT methods enabled measurement of the impacts of the campaign and associated improvements to butt BINfrastructure and smoker behaviour and attitudes.

Recommendation L

A campaign to continue to support the prevention of butt littering around licensed premises needs to effectively monitored to ensure independent verification of consolidation or slippage from gains achieved during the cigarette butt litter prevention campaign.
## Appendices

### Appendix A: Licensed Premises Assessed

<table>
<thead>
<tr>
<th>CBD</th>
<th>Licensed Premises</th>
<th>Metropolitan</th>
<th>Licensed Premises</th>
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Appendix B: Demographic Profile of Survey Respondents

Surveys were conducted in all locations where people were present and where those approached agreed to be interviewed. 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.

![Bar chart showing adopter categories for sample](image)

**Figure 17 Adopter categories for sample**

The proportion of smokers who responded to the surveys was always greater than two thirds of survey respondents except for innovator (46%) and mainstream (62%) locations at baseline before the launch.

![Graph showing smoker survey respondents according to adopter category](image)

**Figure 18 Smoker survey respondents according to adopter category**

Between half and two thirds of the survey sample was male in all adopter categories at all stages of the campaign.
Figure 19 Proportion of males in the survey sample

Around half of the sample was tertiary educated at all venues except at early adopter venues at the peak of the campaign when almost 60% were tertiary educated.

Figure 20 Education level of survey sample

Overall most of the sample consisted of locals, however people surveyed at innovator venues were more likely to be locals than those at the other categories of adopter types for most stages of the campaign.
The most common age group for all adopter categories was between 25-34 years of age except for early adopter venues before the campaign, when the groups were younger (18-24) and at straggler locations just after the launch when the next age group was more prominent (35-44 years).

In summary, the demographic profile for the evaluation indicated that most of those interviewed were local to the area, employed, with a tertiary school education.
Appendix C: Sample Segments and Littering Behaviour

Gender and Groups

The pattern of reduced littering evident for the sample overall was also shown by males and females individually and as part of different types of groups. Littering of butts reduced in groups of males only and females only and also in mixed gender groups. The campaign was equally effective for all these sample segments.

![Figure 23 Reduction in littering for smokers in groups and according to gender](image)

**Metropolitan Melbourne**

The pattern of reduced littering at licensed premises in metropolitan Melbourne and the CBD were very similar albeit starting at different levels of littering. For both metropolitan Melbourne and the CBD, littering was reduced during the campaign.

![Figure 24 Reduction in littering for smokers in the CBD and metropolitan Melbourne](image)
## Appendix D: CCAT Factors and Locations Summary CCAT

### Table 3 Interpretation of high and low ratings for CCAT indicators

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