

Keep Our Planet Clean: Morsjors, Litter Bug Illegal Dumping And Littering – Team Up To Clean Up

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ABSTRACT

In the world we live in it is not difficult to open up a newspaper or listen to the evening news these days without hearing about retreating glaciers, shrinking Arctic ice, and increasing devastation and natural disasters. Environmental issues such as ecological damage caused by pollution are real and do affect the way humans live in the present and future, and the toll that will take on the future generation. Our environment needs rescue from pollution. Joburg's transformation into a world-class African city begins with presenting a clean and hygienic environment to all city residents and visitors. In this regard Pikitup Johannesburg has a crucial role to play. Combating illegal dumping and littering is a key priority for the City of Johannesburg: *"A World Class African City"*

Context and background:

The environment, the character of neighborhoods and the quality of life of local residents are impacted by illegal dumping and littering. It causes safety hazards to the public and costs local governments millions of rands every year in cleanup costs.

When littering and illegal dumping takes place, it is also a loss of resources as many items could have been recycled. It costs the City/Pikitup R569 million per annum to clean up street littering and illegal dumping sites - money that could be far better utilised on houses, new ambulances or any number of projects to bring the city up to world-class standards.

Approach and methodology

The strategy for curbing illegal dumping and littering was initiated by Pikitup as a result of lack of an integrated approach in dealing with the problem of illegal dumping and littering. It is not only dedicated to cleaning up illegal dumping sites, but also informing communities about the hazards of littering and illegal dumping and encouraging them to take stewardship of these sites and the environment.

Key words

Illegal dumping, littering, stewardship, recycling, changing behavior.

1. INTRODUCTION

City of Johannesburg's (Jozi) transformation into a "World-Class African City" begins with presenting a clean and hygienic environment to all city residents, visitors and tourists. While Pikitup has accepted custodianship of the City's cleanliness, the City's residents also have a vital role to play. Pikitup's plan for curbing illegal dumping and littering is not only dedicated to cleaning up illegal dumping sites, but also informing communities about the hazards of littering and illegal dumping, and encouraging them to take charge of these sites.

2. PURPOSE OF PAPER

The purpose of the paper is to set out ways in which the City of Johannesburg and Pikitup is combating illegal dumping and littering, this includes:

- ✓ Education and awareness programmes informing the communities of Johannesburg on the impacts of illegal dumping and littering.
- ✓ Local strategies implemented to ensure that local communities can care for their own neighbourhoods and environments (Jozi @ Work) - Developmental Service Delivery Model.
- ✓ How to minimise the harm illegal dumping causes to the environment and human health.
- ✓ Corrective and preventive measures to make illegal dumping harder and less attractive– these mechanisms are implemented through focused tactics and actions.

3. OBJECTIVES

Pikitup has an integrated waste management system that provides an essential community service by protecting the environment and public health and minimizing long term costs to households, industry and the City of Johannesburg. The objective of curbing illegal dumping and littering is as follows:

- ✓ To reduce the amount of littering and illegal dumping in Jozi.
- ✓ To improve the visual amenity of Jozi.
- ✓ To change the public's perception that it is acceptable to dump household items in public places.
- ✓ Change the public's perception that it is Pikitup's responsibility to clean up dumped rubbish.
- ✓ To make the public aware that dumping is illegal and that there are monetary penalties.
- ✓ To provide residents with solutions or options for disposing of unwanted materials.
- ✓ Re-engaging communities and civil society to respond to service deficits.

4. LITTERING

Many South Africans are prone to littering, which has resulted in a dirty country and in particular a dirty Johannesburg and the expenditure of unnecessarily huge sums of money to clean up the mess (without litterbugs these funds could have been spent on far more productive service delivery activities, such as housing, schooling and help for the poor). As we look around we often see plastic bottles, cans, glass and polystyrene next to roads and in open spaces and motorists throwing fast food packaging and cigarette butts from windows or pedestrians dropping litter as if it was not them dropping it.

Whilst this is a behavioural problem, the causes are diverse and can be traced back to poor education, unemployment, economic problems and even socio-political issues. In an effort to curtail littering caused by plastic shopping bags, the Environmental Affairs and Tourism Ministry with effect from 9 May 2003, banned the use of shopping bags thinner than 30 microns. Not everybody agrees with these measures but it has, without doubt, severely pruned the 'national flower' from the landscape. Similar efforts to curtail the illegal disposal of tyres and rubber are underway, whilst the glass-recycling industry is busy cleaning its own house.

4.1 What Is Litter?

Litter is waste that has not been disposed of properly. It is unsightly and reduces the aesthetic appeal of the community. It can pose environmental, health and safety concerns. (Greenworks, 2014)

Litter is a small amount of waste (less than 200 litres in volume—that is smaller than an average household wheelie bin) (Keep America Beautiful (KAB), 2009). According to KAB, "About 85% of littering is the result of individual attitudes. Changing individual behavior is key to preventing litter." The KAB study found that, "Most littering behavior—81%—occurred with notable intent. This included dropping (54%), flick/fling of the item (20%), and other littering with notable intent (7%)." They also note that litter begets more litter. Education, littering laws and enforcement can all help prevent litter, but ultimately we are all in this together. (KAB, 2009)

4.2 Does it matter and should we care if we litter?

With so many other important issues such as crime, AIDS, child abuse, joblessness does it matter whether we put our litter in the bin (or recycle where possible.) Should we care if South Africa and the environment in which we live are kept clean?

Yes it does matter and we should care.

Some of the reasons why we should care are as follows:

- ✓ It's unsightly, reduces the aesthetic appeal of public places including streets, parks and waterways.
- ✓ Costs the community huge sums of money and time to clean up every day.
- ✓ Causes blockages of the drainage system and causes flooding which costs councils millions of rand to repair.
- ✓ When it gets into our waterways - rivers, dams and the sea - it can kill aquatic life directly (eg. through choking) and indirectly through its impacts on water quality.
- ✓ Can be dangerous to people particularly when it involves items such as broken glass, rust, needles and syringes.
- ✓ Can be a fire hazard for example when lit cigarettes are thrown out.

- ✓ Harms birds for example they may choke on plastic, chewing gum or any other litter that gets stuck in their throats.
- ✓ Breeds rodents who carry diseases, destroy and eat crops and food, chew electrical and telephone cables.
- ✓ Encourages crime as areas that are not taken care of are seen to be unprotected and therefore easier crime targets.
(Greenworks, 2014)

4.3 Why do people litter?

Research from other countries have shown that the behavior trait of littering is complex and can be attributed to a variety of sources, including deliberate tossing of litter from vehicles, accidental litter from items blowing out of vehicles or from unsecured loads, and litter left behind by pedestrians. We find similar behavior traits in Johannesburg. One thing research has proven is that it is tough to label an individual as a "litterer." One may litter in certain situations, but not in another. Littering is not a consistent behavior. Individuals can be influenced by a number of factors, including a belief that an item is not litter (such as a cigarette butt or banana peel). Other reasons include:

- ✓ Lack of self-respect - they don't care about themselves and therefore don't think that it's important that they live in a clean environment.
- ✓ Lack respect for others – they don't care how their actions and behaviour impacts on others, and therefore don't think about how their littering affects others.
- ✓ Lack of respect for the environment - they don't care what the impact of their littering has on the environment in which they live.
- ✓ They don't want to take responsibility for cleaning up after themselves and taking care of their environment.
- ✓ They are lazy - it's easier to leave their rubbish on the ground, or throw it on the floor than find a bin.
- ✓ They think it's someone's job or they think they are creating work. (Greenworks, 2014)

5. ILLEGAL DUMPING

5.1 What Is Illegal Dumping?

Illegal dumping is the unlawful deposit, tipping of waste where no license or approval exists to accept such waste that—when viewed in its entirety—is greater than 200 litres (about the volume of an average household wheelie bin). (NSW: EPA, 2009)

In Johannesburg illegal dumping is on the increase. Most dumping takes place late at night and is thought to be mostly by small entrepreneurs to avoid disposal fees.

5.2 What Materials Are Illegally Dumped?

Dumping of domestic waste happens largely in lower income areas and informal settlements due to lack of environmental awareness, receptacles and storage space. Furthermore, in higher income areas, builders' rubble and garden waste is being dumped in large quantities by mostly private contractors. In these areas dumping is occurring mostly in accessible open stands that are undeveloped and in road reserves. Larger domestic items for example mattresses, furniture and e-waste/white goods, construction and demolition waste including excavation waste and asbestos, garden organic material, chemicals and other hazardous waste, health care risk waste, abandoned vehicles, car parts and shopping trolleys can also be found dumped illegally. An increase in dumping of unwanted waste material by waste reclaimers (trolley brigade) also contributes to littering and illegal dumping.

5.3 Who Dumps and Where?

On the ground monitoring by Pikitup depots and complaints received by the City of Johannesburg's Call Centre Pikitup has identified some areas which are known "hot spots" for illegal dumping. Generally, these can be categorised into the following groups:

- ✓ High rise, Cluster and Townhouse complexes - Tenants vacating these units frequently dump on the pavements outside their building. Alternatively tenants may leave them in the flat for the landlord or real estate agent to deal with who in turn dump onto the pavement.

- ✓ Railway Stations – Illegal dumping appears to be common around railway stations. This is thought to be due to a number of reasons including that it is easy to dump late at night when there is very little pedestrian or vehicle traffic and surrounding areas are often poorly lit and with wide open spaces where there is unrestricted access and materials can be easily unloaded. In addition, dumpers may choose these locations as they are not directly linked to a residential property, making it more difficult to identify an offender.
- ✓ Industrial and Commercial areas – Areas are common locations for illegal dumping as outside of regular business hours there is often greatly reduced traffic and therefore witnesses to offences. Such areas are often poorly lit and there are wide open spaces where materials can easily be deposited from a vehicle.
- ✓ Roads with little or no through traffic – Particularly common in locations where there is a large industrial or commercial/retail component.
- ✓ Parks, open spaces and vacant land – These are easy targets as unrestricted access is often available making dumping relatively simple. Areas of dense vegetation providing protection from witnesses to any illegal dumping.
- ✓ Areas with large populations of residents (informal settlements) and backyard shacks – This may be directly due to residents not having access to information or having a poor understanding of Pikitup Services, suitable options for storing and disposing of waste or the fact that dumping is illegal.

5.4 Why People Dump?

Understanding the reasons why industries and individuals illegally dump waste drive the development of effective programmes to combat illegal dumping. (NSW: EPA, 2009)

Illegal dumping is carried out by people in all parts of the community from households to businesses and other organisations. Depending on the type of waste illegally dumped, there are four main reasons that motivate illegal dumpers and which are summarized as follows:

- ✓ *Unwillingness to pay*
- ✓ *Uncaring attitude*
- ✓ *Convenience*
- ✓ *Lack of knowledge (NSW: EPA, 2009)*

Pikitup is faced with a difficult choice - dumped rubbish attracts further dumping and Pikitup is keen to prevent this by sending out crews quickly to clean up. Cleaning up however reinforces the message that dumping is acceptable. To deal with illegal dumping in areas requires a combination of law enforcement (Johannesburg Metro Police and Environmental Health, Building Control), education, and other city departments involvement through measures such as regulating waste produced during events, construction and demolition.

6. TONNAGES COLLECTED FROM ILLEGAL DUMPING AND LITTERING ACTIVITIES

Eleven Pikitup waste management depots are strategically located throughout the City, collecting refuse from approximately 1.2 million formal and informal dwellings. The Inner City/CBD precinct represented by Pikitup's Selby depot collected 88 869 tons of waste during the 13/14 financial year as per Figure 1. This is partly due to the congestion and high density of people within any given business day and the fact that the Inner City precinct is cleaned 24 hours per day.

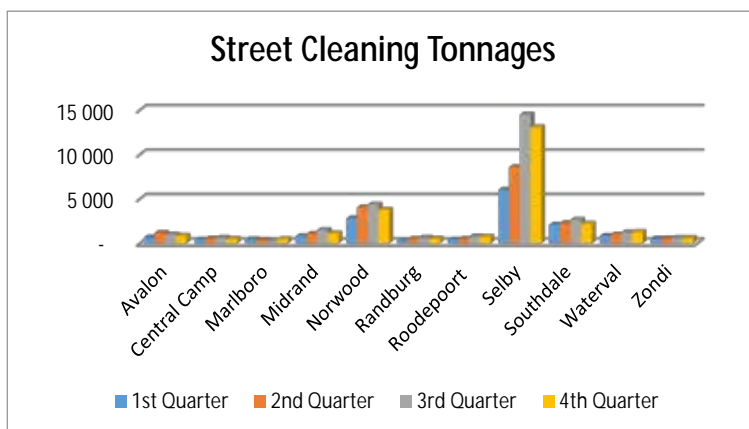


Figure 1: Street Cleaning Tonnages in City of Johannesburg for 13/14 (Pikitup Annual Report 13/14)

A total of 228 835 tons of illegally dumped waste was collected during 13/14 financial year as per Figure 2.

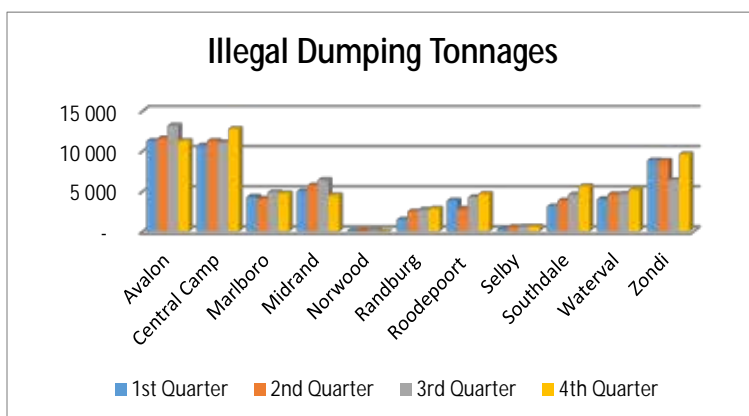


Figure 2: Illegal dumping tonnages in City of Joburg for 13/14 (Pikitup Annual report 13/14)

7. IMPACT OF LITTERING AND ILLEGAL DUMPING

7.1 Environmental Impact

- ✓ Can degrade land, plant and animal habitats
- ✓ Can destroy local bush land, reduce biodiversity value and hinder re-vegetation.
- ✓ Runoff from dump sites may contaminate soil and water sources, such as lakes, streams and drinking water supplies thereby killing aquatic animals.
- ✓ Illegally dumped items can alter the normal drainage course of runoff water and make areas more susceptible to flooding and erosion when waste blocks storm water drains and gutters.
- ✓ Illegally dumped materials could catch fire either by spontaneous combustion or arson, which can damage property and land.
(NSW: EPA, 2009)

7.2 Social Impact

- ✓ Reduces aesthetic amenity and deters people from visiting areas where there is frequent illegal dumping.
- ✓ Dumped items create physical (protruding nails or sharp edges) and chemical (harmful fluids or dust) hazards for anyone who does visit the site.
- ✓ Dump sites attract rodents, insects and other vermin that pose health risks. "Dump sites with scrap tyres provide an ideal breeding ground for mosquitos, which can multiply 100 times faster in the warm stagnant water standing in scrap tyre castings."

- ✓ Thousands of hours are spent participating in clean up initiatives (NSW: EPA, 2009)

7.3 Financial Impact

Pikitup spends R85 million a year removing and properly disposing of illegally dumped materials and landfilling and R484 million on removing litter and cleaning streets.

8. JOZI/PIKITUP INTERVENTIONS – MECHANISMS IMPLEMENTED TO DEAL WITH LITTERING AND ILLEGAL DUMPING

8.1 Preventive Measures – mechanisms that are geared towards preventing access to hotspots to ensure no further increase in littering and illegal dumping.

- ✓ Formed partnerships with local community (ward committees) and business structures such as the City Improvement Districts (CID's) by installing cameras, monitoring and keeping 'hot spots' clean.
- ✓ Illegal dumping signs and barriers to prevent entering to sites.
- ✓ Regular monitoring, cleaning of dumping and littering areas and beautification and landscaping of areas in consultation with other City departments such as Johannesburg Metropolitan Police Department, Environment, Infrastructure and Services Department, Environmental Health, City Power, City Parks and Zoo and Building Control.
- ✓ Rollout anti-litter campaigns including billboards and bus stop advertising.

8.2 Corrective Measures – mechanisms that come into effect once there has been an incidence of littering and illegal dumping.

- ✓ Provision of waste receptacles - Provided sufficient waste bins/receptacles to informal settlements, in public places and pedestrian corridors, which are emptied on a regular basis.
- ✓ Making dumping harder – Constructed barriers and improved lighting to make access to dumping hot spots difficult. Environmental Health by laws requires private stands to be fenced off.
- ✓ Exposing dumpers – Name and shame in local newspapers.
- ✓ Reviewed tariffs at landfills for clean builders' rubble and allowing garden service companies to dispose green waste at garden sites. JMPD issuing fines and requiring offenders to clean up.
- ✓ Education and awareness campaigns and informing the community on the hazards of littering and illegal dumping.
- ✓ Advertising waste collection and disposal services for bulky waste.
- ✓ Keeping areas free of waste and displaying signs at known illegal dumping hot spots.
- ✓ Adopt a spot – getting business to participate in keeping Jozi clean.
- ✓ Rehabilitation of illegal dumping spots / Food for Waste (Waste Exchange Programme - WEP) – developing food gardens on cleaned spots.
- ✓ Builders' rubble crushing plants - Pick-a-brick and using crushed material for landfill cover.
- ✓ Cooperative, Reclaimer and Public Private Partnerships – Introduction of Jozi@Work Programme.

8.3 Enforcement – mechanisms that are geared towards compliance to CoJ regulations

- ✓ Utilizing the existing surveillance camera technology within the Joburg CBD and communities in identifying main polluters to stop their activities.
- ✓ Messages advertised in hot spots inviting residents and businesses to anonymously report those known to illegally dump waste.
- ✓ Random inspections of premises to ensure correct storage receptacles.
- ✓ Desktop auditing of compliance with conditions of development consent relating to submission of waste disposal receipts and compliance with waste management plans of new developments.
- ✓ Observations of waste transport vehicles to check compliance with covered loads requirements.
- ✓ Increased patrols of hot spots.
- ✓ Partnerships made with other agencies, such as adjoining councils, SAPS, Environmental Health, and Green Scorpions.

8.4 Education & Awareness - mechanisms that are geared towards changing behavior of the polluter. Use of a mixture of platforms to communicate targeted messages aimed at anti-littering and anti-illegal dumping:

- ✓ Brochures/ leaflets/ Billboard and posters
- ✓ Media releases
- ✓ Pikitup and COJ's Web page
- ✓ Eco rangers – school training programmes
- ✓ Clean-up days /Anti-Litter Campaign
- ✓ Use of Celebrities as Ambassadors for anti-litter & anti-illegal dumping Campaigns
- ✓ Competitions
- ✓ Sponsorships/Partnerships
- ✓ Introduction of community “watchdogs”

8.5 JOZI@WORK - DEVELOPMENTAL SERVICE DELIVERY MODEL (DSDM)

During the budget speech on 27 May 2014 by the MMC for Finance Councillor Geoffrey Makhubo he said, 'Jozi@Work', our developmental service delivery model is an innovative paradigm shift for the City. In the future, services will be delivered through a partnership between the City and the community utilising their strengths and assets thereby creating collective ownership and job creation over the next two years."

Pikitup welcomed the opportunity to get communities involved in cleaning the city and keeping it clean. Pikitup is transforming its traditional waste management system into an integrated waste management system through community partnerships

8.5.1 Principles

Jozi@Work seeks to reorganise the channels of community engagement and link these to actions that can directly deal with services deficits ie. Illegal dumping sites and is based on the following principles:

- ✓ Establishing a community waste management economy in the CoJ – Behavioral change
- ✓ Separation of recyclable waste at source (illegal dumping and litter sites)
- ✓ No one size fits all
- ✓ Diverting waste away from the landfills. This will save valuable airspace and ultimately reduce transportation cost, conversion of waste into a resource and complying with Polokwane Declaration. Reduction in littering and illegal dumping through the educational value of the project, clean, livable environment and sustainability
- ✓ Contribution to the City's poverty alleviation efforts as it provides opportunities for sustainable job creation, enterprise development
- ✓ Promotion of Active Citizenship through enabling all communities to take part in preserving and protecting the environment
- ✓ Reengaging communities and civil society to respond to service deficits

. The implementation is ward based service delivery and the following agreement apply:

- ✓ GDARD Targeted cleanliness levels agreed through service level agreement with cooperative (Figure 3).
- ✓ Cooperatives paid for cleanliness of the area on a sliding scale by Pikitup as per GDARD targets.
- ✓ Cooperatives to supplement income by selling recyclables from litter and illegal dumping areas to recycling companies.

8.5.3 Targeted Cleaning Levels

The following residential cleaning standards have been adapted from GDARD. These have in turn been incorporated into Pikitup's strategy as a guide for the cleanliness levels that are to be achieved at Pikitup.











Photographic Cleanliness Levels – adapted from GDARD Standards					
	Level 1: Extreme Litter	Level 2: Larger accumulations of litter	Level 3: Small accumulations of litter	Level 4: Some Litter	Level 5: No Litter
Description	Dense littering. More than 90% of the visible surface contains litter. Whole area must be cleaned. Litter generation rate is high. Needs urgent attention, i.e. "Very Dirty".	Littering more obvious. Up to 30% of the visible surface contains litter. Litter can be collected by litter picking.	Sparse littering, no more than 5-10% of the visible surface contains litter. Litter can be collected by means of litter picking.	Predominantly free of litter & refuse except for some small items.	No visible litter, dirt and/or foreign matter, i.e. clean and free of any man-made, man-used and misplaced material (excluding sand and grit).
Formalized areas					
Informal Settlements					

Figure 3: GDARD Cleaning Standards

8.5.3 Reward System

In order to ensure that sub-standard performance by the community based cooperatives and the various partners under its control are not rewarded, a new paradigm of rewarding consistent achievement of high standards of cleanliness is implemented on a sliding scale. GDARD Cleaning standards are used for the reward system. Areas are monitored and evaluated on a daily basis by Pikitup officers and data of cleanliness captured and any incidents of illegal dumping recorded. The cooperative is also responsible for education and awareness in its area. Figure 4 depicts the illegal dumping and litter collection reward system.

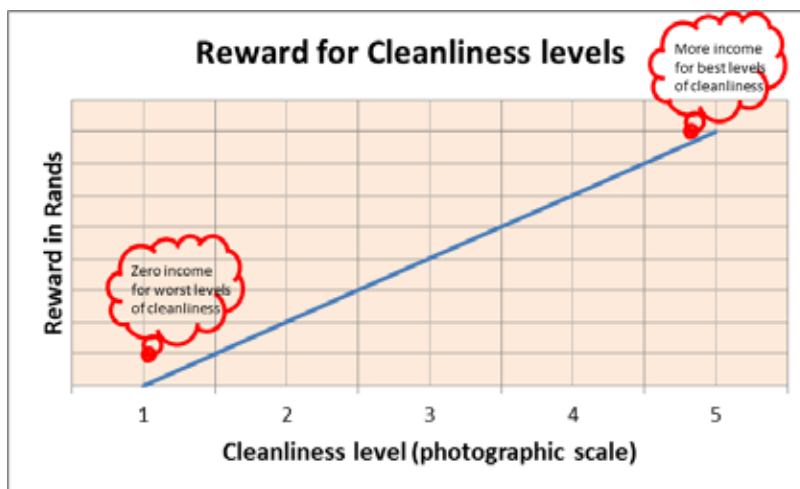


Figure 4: Illegal dumping and litter collection reward system

9 CHANGE, MONITORING AND EVALUATION

9.1 Change Management Plan

Pikitup implemented a change, monitoring and evaluation plan. The objective of the change management plan is to present planned activities that will support the Illegal Dumping and Littering programmes by maximising employee ownership, with minimal resistance and less negative impact on service delivery. Key objectives of the change management programme are as follows:

- ✓ Highlight the potential impact of curbing illegal dumping and littering
- ✓ Prepare impacted employees for the implementation
- ✓ Capacitate depots to participate
- ✓ Ensure that the business impact and change readiness are fully analysed and communicated to employees for action
- ✓ Ensuring that the expectations are managed during implementation
- ✓ Promote the benefits of the plan for curbing illegal dumping and littering within Pikitup
- ✓ Ensure that there is frequent communication regarding the project status and benefits to all employees

9.2 Monitoring and Evaluation

To ensure the ongoing success of the plan for curbing illegal dumping and littering, a comprehensive monitoring and evaluation program is required. The program will help to build flexibility into the plan and allow Pikitup to capitalise on unforeseen opportunities.

The monitoring and evaluation program will help Pikitup to:

- ✓ Assesses the effectiveness of educational material and resources.
- ✓ Evaluate the success of prevention, investigation and enforcement activities.
- ✓ Develop a robust and detailed data base of numerical and spatial information regarding the extent and nature of illegal dumping within the City.
- ✓ Undertake a cost benefit analysis of the actions implemented as part of the plan for curbing illegal dumping and littering.
- ✓ Make recommendations about future initiatives.

As part of the monitoring and evaluation program Pikitup introduced a standardised form to record details of illegal dumping incidents to ensure that records are consistent. Pikitup is investigating the introduction of an application (APP) to get residents to report illegal dumping and littering. Community surveys will be undertaken to evaluate the success of education activities.

The campaign shall be reviewed with the assistance from Universities such as the University of Johannesburg or the University of Witwatersrand within 12 months of implementation, and annually thereafter to determine its effectiveness and make suitable modifications to ensure that it remains effective.

10 CONCLUSION

Littering and illegal dumping remains a huge challenge for the City of Johannesburg and Pikitup. It is believed that the interventions implemented for curbing illegal dumping and littering have already started to contribute to a Clean City and making the citizens' of the City of Johannesburg aware of the impact of littering and illegal dumping on the environment, as well as creating an opportunity for citizens to live out their changed behaviour by participating in the interventions.

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