

Ballarat

Stormwater Awareness

Project

Pilot Education Project for Industrial Premises

FINAL REPORT
October 2002

Project Officer Felicity Glover



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EXECUTIVE SUMMARY

Summary

The Ballarat Stormwater Awareness Project was jointly funded by the City of Ballarat (COB), Central Highlands Water (CHW), Corangamite Catchment Management Authority (CCMA), and the Glenelg-Hopkins Catchment Management Authority (GHCMA).

The core of the project was an education program targeted at industrial and commercial premises. The aim was to improve the quality and management of discharges to both stormwater and sewer. The partner agencies were seeking a clearer picture of the nature, potential and source of discharges given Ballarats location at the headwaters of the Loddon, Corangamite, Hopkins, Moorabool and Barwon River Basins. The data collected will also be used to generate and support the formulation of strategies and priorities in the future management of stormwater and protection of our waterways.

Results

Approximately 30 different types of premises were inspected including engine repair workshops, car yards, metal machining workshops, food premises, and specific stormwater drains as a result of concerns. A total of 352 inspections were undertaken including follow ups with many initial visits revealing potential or actual hazards to stormwater or sewer. Of the 28 follow ups undertaken ?? had made improvements or changes since the visit and letter or at least thought about it.

All premises received a courtesy letter after the initial visit. 211 premises received letters requesting changes be made to improve waste management and environmental protection. The requests mostly encouraged change through the introduction of very simple on site measures of little costs to the business. Industrial and commercial premises when calculated as a whole contribute much to pollution, but the financial impact of improved waste management on each individual site is usually quite small.

When weighed up against the costs for being caught polluting its easy to convince people to do the right thing, however if they don't believe they will ever get caught this approach is a waste of time. Instead the focus must be on gaining an emotional commitment from the person linking it to their natural environment and the future for themselves and their children.

Types of hazards observed included storage of waste oil, sediment and turbidity threats, vehicle washing, storage of chemicals, and litter.

A small percentage of people (16%) were already highly aware and doing the right thing, with another 39% unaware but at least keen to do the right thing. 45% of people spoken to remained unconvinced that they were contributing to the pollution stream, or even if they thought they might be they did not care.

Media successful

Sampling program

Referrals

Key Issues Identified

Trade Waste

Triple interceptor or grease traps receiving trade waste connected directly to stormwater.
Trade waste including food premises connected directly to sewer rather than via a trade waste appliance.
Grease traps requiring more frequent emptying to avoid overflow and pipe blockages.
Trade waste appliances such as vertical gravity separators requiring general maintenance including backflushing.
Food waste discharging directly to stormwater.
Vehicle washing waste discharging directly to stormwater.

Direct stormwater threats

Silt and sediment from construction works.
Oil spillage on paved areas.
Stormwater drains exposed to contamination inside workshops.
Waste oil storage inadequate.
Litter including cigarette butts, lawn clippings and sawdust.
Acid seepage from plating works.
Storage of paint inadequate.
Detergents from various types of washing practices.
Nutrients from variety of sources.
Carpet cleaning wastewater.
Roof cleaning wastewater.
Soil sifting emissions.
Brick and kerb cutting waste.
Soiled ground.

Strategic

Lack of a coordinated approach to environmental protection, ie law enforcement, within council and between council and EPA
Opportunity for a formalised relationship between CHW and COB
CHW need a management system for tracking customer compliance and performance.
CHW need more resources to physically conduct site visits.

Key Recommendations

To be developed from my findings and the input of the steering committee members

Funding to be sought for education and awareness officers to be ongoing
Develop an industry based education program to be run on a regional scale (Ned)
Community awareness – ask businesses what they do with their wastes such as oil, solvents and wash waters.
Develop a green business list for promotion of businesses that adopt best practice.
Regional strategy on best practice for vehicle (and driveway/road) washing
Stormwater awareness nuisance protocol – in light of concerns with agency responsibilities under existing legislation – who should do what and when, what is most effective?
Planning condition for Butt bins to be fixed outside of new buildings
Regional approach to cigarette butt litter problem – en health to be involved
Report to be established in the MPHP?

Link to the BSMP – hence BPEMG

Strategic projects may be presented to VSAP / EPA and possibly achieve 100% funding support

Highlighted issues of responsibility within council

Develop coordinated approach to environmental protection

EHOs to assist with trade waste inspections

Determine an effective way for CHW to pick up all potential tw customers

Increase the number of trade waste inspectors

Develop protocol for referrals between CHW and En Health Unit

Stormwater to be written into the MSS – (Ned has done so)

ACKNOWLEDGMENTS

Numerous representatives from the funding agencies were at various times present on the steering

INTRODUCTION

Project Summary

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The core of the project was an education program targeted at industrial and commercial premises. The aim was to improve the quality and management of discharges to both stormwater and sewer. The partner agencies were seeking a clearer picture of the nature, potential and source of discharges given Ballarats location at the headwaters of the Loddon, Corangamite, Hopkins, Moorabool and Barwon River Basins. The data collected will also be used to generate and support the formulation of strategies and priorities in the future management of stormwater and protection of our waterways.

Objectives

- To raise awareness among commercial proprietors of best practice management of wastewater and stormwater and thereby improve water quality.
- To collect data on the nature and extent of threats to waterway quality from commercial stormwater discharges to use in setting priorities for future stormwater management.
- To improve the quality of water entering the stormwater system and subsequently the river systems throughout the City of Ballarat.

Project Rationale

When it rains traditional urban stormwater drains prevent flooding by carrying water away from streets and buildings into waterways including creeks, wetlands and lakes. Management of this water has historically focused on flood prevention and the effective transportation of the water, rather than its quality and the downstream effects of poor quality water in the waterways.

Ideally only clean rainwater from roofs and paved areas should go down the drain. When mobilised contaminants including oils, grease, soapy water, fine sediments and mud, chemicals or gross litter are allowed to enter the system problems including poor water quality, environmental damage and flooding occur. Illegal or poorly maintained trade waste connections to sewer also lead to downstream problems because such inputs affect the balance and effective functioning of wastewater treatment plants which also discharge to waterways.

The management of stormwater quality is an important part of looking after the overall health of our waterways and protecting residents both in this region and downstream.

Whilst historically approach to pollution control has been to clean up and punish the polluter, the key to the future is in concentrating on prevention of pollution at its source.

The awareness component of the project was aimed at identifying potential threats to stormwater and encouraging the prevention of pollution by removing threats or providing barriers to protect the stormwater, ie. having spill containment, bunding or clean up measures in place. Many proprietors, once made aware of the potential for discharge, and the effects of that discharge, were happy to make changes in order to protect the environment.

The idea for a pilot stormwater awareness project grew from a recognition that many of the potential or real threats to stormwater were not well understood by industry and the community. Observations made of actual damaging activities occurring day to day in Ballarat indicated that general awareness was low and partner agencies wanted to explore the potential causes and collect data on a more deliberate basis. Hence the idea for a general survey was first borne in mid 1999.

Several council departments proposed the idea for a project officer to survey food premises and vehicle washing locations to determine what actions were needed to prevent illegal discharges to council stormwater system. The focus has always been for the project to assess, educate and assist commercial operators, with enhanced collaboration between responsible authorities including CHW, EPA and the CMAs.

The rationale behind the original proposal was threefold;

- Water discharging to Ballarat waterways is expected to meet the objectives of the State Environment Protection Policy, Waters of Victoria (SEPP, WoV). Action was needed given Ballarat's location in the catchment and increasing awareness in the community and Council.
- The protection of a council infrastructure and its ongoing maintenance, a substantial cost to Ballarat ratepayers through the impact on physical and human resources. Obvious problems were pressing.
- Lack of action in relation to minor incidents could not continue as the cumulative effect was increasingly recognised, that poor waterway health equals risks to public health, the two being inextricably linked.

Ballarat was facing structural and non structural problems, requiring innovative ideas, as well as a lack of resources to ensure the programmed management of issues. Many instances of washbays not plumbed to the sewer existed, trade waste was not being systematically managed, food and cleaning waste being disposed to stormwater, and pit cleaning was random and reactionary. EPA officers were also unavailable for the less significant environmental incidents, although the chain of command and the definition of significant have never been clarified.

The bigger picture for contamination of stormwater and the catchments was far beyond the resources of a single council department. With EPA referrals likely to bounce back the question asked was; 'What priority is it to council?' 'who will do it', when will they do it', and 'what level of resources can council commit to provide for pro-active investigation and abatement of foul water infiltration?'

Project Scope

There were 2700 commercial properties originally identified in the urban area of Ballarat as target properties for this project. Approximately 10% of them had Trade Waste Agreements with Central Highlands Water for discharge of wastewater to sewer. The Stormwater Awareness Officer (SAO) visited as many of these commercial properties as possible in the project time frame to collect data on the nature and management of discharges and raise awareness of stormwater and downstream water quality issues.

Properties visited were identified using the council rates lists and the CHW trade waste customer database. Areas were prioritised by local knowledge of problem areas and priorities reassessed as the project progressed. Due to the level of media attention and promotional activities of the project the number of concerns received to the Council in relation to stormwater pollution increased. These immediate concerns became a priority for the SAO to investigate in lieu of programmed inspections and the availability of other officers (EPA and COB).

The project was a pilot study with an industrial focus. As such how the inspection would be received was unknown, and domestic issues were frequently raised by the owner / operators wanting to know why we were picking on industry. Being a representative of council also led people to digress to other matters and placation of persons with other issues with the organisation was standard part of inspection process. Each inspection generated discussion and follow up beyond the intended project plan and in fact led to quite a deal of information collection and distribution as a public relations/customer service exercise on behalf of council and the other agencies involved.

Quality of interaction quickly gained supremacy over quantity of inspection, and only the first two areas on the priority order table were visited during the project time frame.

Areas in Priority Order	No. of industrial / commercial properties	No. of trade waste discharges identified
Delacombe	337	27
Howitt St	155	17
Sebastopol	165	20
Canadian – Golden Point	80	7
Mount Pleasant – Redan	55	6
Creswick Rd nth of Howitt	105	12
Alfredton	175	15
Ballarat East, Eureka, Brown Hill	147	18
Wendouree	200	11
Ballarat Central	1080	92
Sturt St (numbers >500)		23
Mt Helen, Mt Clear, Buninyong	71	10
Ballarat North	90	9
Lake Wendouree	66	9

Table 1. Areas in Priority Order

These two areas were Delacombe and Howitt St. Stormwater from Delacombe drains to the Lower Yarrowee Catchment east of Sutton St and to the Winter Creek Catchment via Banyule Drain to the south. Howitt St is neatly divided, half drains to Lake Wendouree and the other half to the Burrumbeet Creek Catchment. These receiving waterways flow to communities downstream.

The table above identifies the number of commercial premises worthy of further involvement should council accept the challenge to put more resources into continuing and further developing education and awareness programs.

A twelve month full time framework was provided for the pilot project. Due to various circumstances the project has taken a period of two years to complete. The project commenced in August 2000 with Leonie Walker as Project Officer who remained at the helm until January 2001. Felicity Glover assumed the role in July 2001 working part time on the project until its completion in November 2002.

Stormwater Management Context

The release of the Best Practice Environmental Management Guidelines for Urban Stormwater (BPEMG) published by the CSIRO in 1999 established state-wide objectives and standards for stormwater quality. This formal recognition of the need to improve stormwater quality also recommended the preparation of municipal stormwater management plans to identify local issues and document strategies to address priority issues.

The Victorian Stormwater Action Program (VSAP) is a program to activate the government imperative to improve the environmental management of urban stormwater in Victoria. This has facilitated the development and implementation of Local Government Stormwater Management Plans as described in the BPEMG.

The process has taken a number of years and the pilot stormwater project, whilst it stands alone in the context of the rise in recognition of stormwater at a state government policy level, contributes further evidence to strengthen the need for local action.

The City of Ballarat received VSAP funding and engaged the Water Group to consult and write the BSMP. The priority management issues found during development of the plan and the actions people wanted to see occur compliment the findings of the project most closely in terms of education and awareness, ie non-structural actions to manage the identified issues.

Sub-catchments and priority issues

Within the BSMP the very high and high priority actions relate to land use planning and municipal operations, regulation and enforcement, education and awareness and flow control measures. Many of the actions identified to deal with the issues are repeated across the sub-catchments with a focus on education and awareness actions for industrial areas.

The sub catchments visited during the project were the Burrumbeet Creek, Lower Yarrowee River and Winter Creek sub catchments. Issues include;

- The impacts of existing and future urban residential, industrial and commercial run off on the in-stream habitat, recreational and commercial use of Lake Burrumbeet
ACTIONS – RE1 RE2 EA1 EA3 EA4
- Changed flow regimes are causing a reduction in the floodplain storage and conveyance capacity of the creek, thereby exacerbating local flooding issues in the lower reaches. – Lake Learmonth
ACTIONS – RE2
- Significant input of poor quality water from industrial, urban and commercial land uses including litter – Pauls Drain

ACTIONS – RE2 EA1 EA4

- Existing and future industrial land use impacts (eg. Industrial land use) including high sediment loads

ACTIONS – RE1 RE2 EA5

- Impacts of existing and future industrial run off on the habitat values of Winter swamp

ACTIONS – RE1 RE2 EA6

The drain is a waterway and a community asset to be valued. This is now being recognised at a broader level through projects including the BSMP where collaboration and consultation with the community as a whole is gaining commitment to a range of documented actions. Prevention through education is better and much more cost effective than a cure or repairing preventable wrongs. In this way the developing base of legislation and increasing awareness encourages everyone to participate and do what's necessary to improve regional waterways.

PROJECT COORDINATION AND EVALUATION

Project Officer Role

The SAO discussed stormwater and liquid waste management with the occupier or owner of each business and advised of any requirements regarding prescribed waste, discharge to sewer, planning regulations and pre-treatment, referring the owner/occupier to appropriate authorities as required for information, approvals or enforcement.

Each visit involved the SAO explaining the purpose of the visit, examining practices on site with the occupier and discussing any issues relating to stormwater management and trade waste discharge. An inspection report was completed for each property detailing;

- the activities on site;
- any illegal connections to sewer or stormwater;
- whether appropriate pre-treatment systems were installed and maintained;
- any other issues which need to be addressed; and
- the level of awareness and commitment to appropriate waste and stormwater management.

Maintenance reports detailing the condition of any pre-treatment facilities on site were completed making recommendations regarding the ongoing maintenance and effectiveness of the facilities. A large component of the project was to ascertain the status of trade waste discharges, litter and other pollutants from premises and ensure all trade wastes were being discharged to sewer.

Throughout inspection the SAO educated proprietors on the need to keep trade wastes, litter and other pollutants out of the stormwater system. Best practice management and treatment of wastes was promoted in an effort to get a consistent message across to the broader community.

A brochure was produced specific to the project giving contact details of all the partners and was provided to all properties visited. The brochure gave general information about stormwater and wastewater management for all commercial premises. Information sheets were also developed and relevant information available from other organisations was given to property owners/occupiers where applicable.

The SAO sent letters to the occupiers after each visit thanking them for their cooperation and confirming any issues discussed which needed to be addressed. Where follow up was required or a non-complying premises was identified a copy of this letter was also forwarded to the relevant authority or section of council for enforcement.

It quickly became obvious that the SAO could not undertake follow up inspections due to time constraints, therefore a sample group was identified to be revisited or telephoned at the end of the project. The follow ups provided some insight into responses to the program and any changes made on site as a result.

The SAO also developed media releases highlighting issues as they arose, and produced publications as appropriate to facilitate the aims of the project. Quarterly meetings of the steering committee were organised and progress reports provided detailing inspection results and any other activities.

It was originally intended that the project identify sampling locations in various sub-catchments to monitor the quality of stormwater discharges over the project period. Instead trade waste discharge was sampled in order to determine the water quality entering the sewer system. This was due to the break in project continuity not providing sufficient time for effective environmental sampling, and it was suggested that this type of data is being collected through other local monitoring programs.

Parameters for testing were those relevant to the water quality requirements set by CHW for the acceptance of trade wastes to sewer.

It is hoped that further sampling will be undertaken at numerous locations based on the type of activities within the catchments and the location of structural treatment measures including retarding basins and wetlands to determine their effectiveness. Existing monitoring programs are encouraged to make available their results to other agencies.

Steering Committee Role

The Steering committee was comprised of representatives from the funding partners and was also attended by representatives of the EPA. Meetings of the committee were held on a quarterly basis and progress reports were provided at each meeting. Fruitful discussions were held on the data collected and included general discussion on future ideas for action.

The role of the committee was to collaborate with the officer and provide advice and guidance to ensure that the inspections and other activities were producing findings/outcomes in line with aims and objectives of the project. Any changes in approach, media releases and promotional opportunities were condoned by the committee as a whole.

13 th September 2000
4 th October 2000
13 th December 2000
15 th August 2001
14 th November 2001
14 th February 2002
11 th April 2002 – Funding and Future Directions Meeting

Table 2. Steering Committee Meetings List of Dates

29 th November 2000
15 th August 2001
14 th November 2001
14 th February 2002

Table 3. Progress Reports List of Dates

Certain steering committee members participated heavily in activities beyond attending meetings, ie pollution investigation, site visits, editing releases and reports.

PROJECT ACTIVITIES AND RESULTS

Inspections and Education

Inspections

The bulk of this project comprised the SAO visiting individual commercial and industrial properties to assess stormwater management and trade waste discharges. Visits to premises involved a detailed inspection of the site, and a general discussion with the proprietor. Discussions involved an introduction to the potential impacts of business activities on stormwater and therefore on our waterways, broad solid and liquid waste management options and the provision of advice in relation to prescribed wastes, trade wastes, pre-treatment of wastes and connections to sewer. Referrals to appropriate authorities as required for further information, approvals or enforcement were made following the inspections.

In the project plan 2700 commercial properties were originally identified and targeted. The commencement of inspections however quickly indicated that quality of inspection and time spent with people was going to be more effective to achieve education and generate behavioural change than quantity of inspections. Each inspection was an opportunity to engage with the individual and communicate a message of the importance of protecting stormwater quality for future generations.

Most proprietors were interested in pollution prevention and because the aim of the visit was to assess, educate and assist on a case by case basis looking at their specific issues, more time than expected was spent. The approach was very different to enforcement and general marketing campaigns, and to rush through and not listen or interact with operators would have resulted in the inspections being less meaningful.

Not only was the officer hoping to gather information, but also to plant the seeds of cultural change and this is not done easily.

Total Individual Premises Inspected	324
Reinspections / Follow ups	28
Total Inspections	352

Table 4. Inspection Numbers

The two business precincts visited were Delacombe and Wendouree. In Delacombe 177 premises were visited across 22 streets. In Wendouree the dominant industrial/commercial street of Howitt Street was the focus with 105 premises visited. The balance of inspections were undertaken in a variety of suburbs including Sebastopol, Ballarat Central, Brown Hill, Canadian, Mt Pleasant and Alfredton.

Stormwater from Delacombe drains to the Lower Yarrowee Catchment east of Sutton St and to the Winter Creek Catchment via the Banyule Drain to the south. Howitt St is neatly divided with half draining to Lake Wendouree and the other half to the Burrumbeet Creek Catchment.

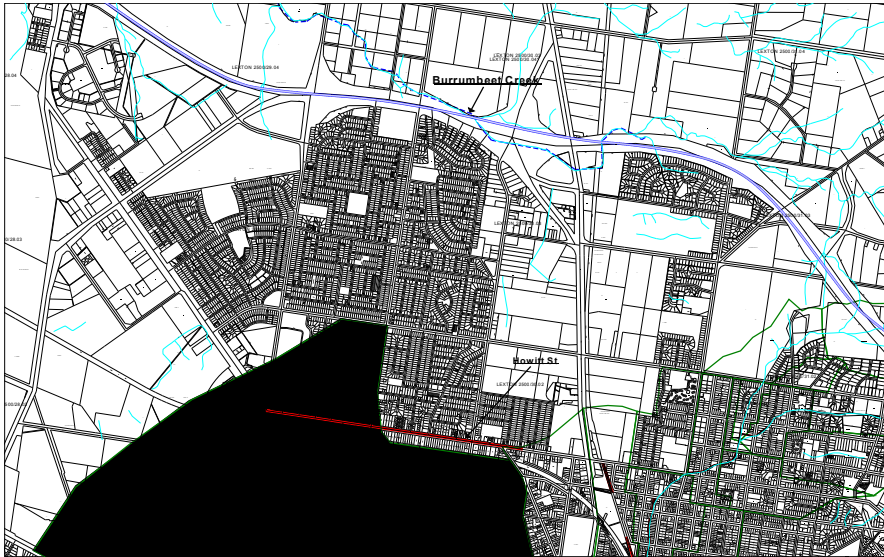


Figure 1. Howitt St drainage system



Premises Categories

This table lists the category type of the premises visited, and how many premises of that specific type were visited. Approximately 30 **different** types of industrial and commercial premises were visited during the project.

Categories	No.
Auto - engine repairs	43
Auto - body repairs	13
Auto - elec, aircon, tyres, brakes, exhaust etc	11
Car Yard (sales and washing, no repairs)	14
Truck, bus, other machinery - repairs	22
Truck, bus, other machinery - depot	5
Metals - fabrication (welding, cutting etc)	21
Metals - machining	7
Metals - treating, coating	4
Manufacturing - no chemicals	9
Manufacturing - printing	2
Manufacturing - involving chemicals	7
Workshop - chemicals	3
Workshop - no chemicals	12
Warehouse	19
Construction materials	8
Fuel supplier	8
Laundry	4
Food - restaurant, take-away (incl bakery)	33
Food - processing	2
Food - small retail	3
Food - supermarkets	2
Food - butchers, meat	3
Retail - all chemicals	3
Retail - some chemicals	15
Retail - organic material	3
Retail - no chemicals	43
Waste Recycler	1
Veterinary Clinic	1
Carnation Farm	1
Stormwater Drain	2
Total Premises Visited	324

Table 5. Premises Categories

Most premises types were found in both Delacombe and Howitt St. Despite both being industrial areas some noticeable intrinsic differences between the areas were; proximity to water bodies and proximity to residential areas. Howitt St is close to Lake Wendouree whilst Delacombe drains to less major waterways, and Delacombe is slightly more rural and industrial when compared to Howitt St which is more central and closer to residences.

Two stormwater drains are identified as ‘premises’ in the table above. These specific sites were visited as the result of concerns not linked to a particular premises type but which generated work for the SAO.

Council holds all background data comprising full details of all inspections including operator, address, category and hazards. This information will remain confidential and property of the steering committee.

Further info on categories?

Premises Potential Hazard Types

This table indicates the potential and actual hazards observed during the inspections. Often numerous types of hazards were observed at the one premise. Some hazards also fell into 2 types of hazard, for example ‘vehicle washing’ and ‘sediment/turbidity’. Where premises were adequately managing their hazards, or none were observed, the premise was given a ‘no obvious hazard’ indicator.

Potential Hazard Type	No.
Sediment/turbidity	79
Organic material	38
Litter	55
Food	24
Waste oil - food	27
Waste oil - machinery	82
Solvents	56
Vehicle washing	62
Washing other	29
Fuel	35
Paints, lacquers, inks	28
Pesticides	4
Acids	8
Alkalis	6
Other chemicals	59
No obvious hazard	141
Total Premises	324

Table 6. Potential Hazard Type

The types of hazards observed were common to the nature of the premises targeted by the project. Waste oil from machinery was the most common hazard, some premises managing this waste particularly well whilst others not so well.

Best Practice Management	Not Being Managed
Stored in suitable containers	Stored in containers without lids
Stored under cover	Stored exposed to the elements
Stored in a bunded enclosure	Stored where the likelihood of a spill was high
Spills kit available	No spills kit available
Collected by a licensed transporter	Disposed of by unlicensed transporter

Table 7. Waste oil (machinery)hazard management



Figure 3. Waste oil not being managed

Sediment was found to be a most significant pollutant of the stormwater system coming from numerous sources including;

- erosion of unprotected or unsealed surfaces,
- discharge of sand, soils and litter from construction sites,
- wear and tear of old pavements or kerb cutting,
- general spills and discharge of organic and inorganic material from commercial sites,
- organic matter swept into the system including leaf litter, grass clippings and droppings,
- run off from vehicle washing, and
- the lack of attention to collection of industrial wastes from activities such as brick and kerb cutting, painting and cementing.

Best Practice Management	Not Being Managed
Dirty water from activities retained on site	Dirty water discharging untreated to stormwater
Trade waste facility well maintained and discharge to sewer meeting standards	Dirty water discharging from defective trade waste connection to sewer
Sawdust and brick cutting dust retained on site.	Sawdust, brick cutting dust not retained on site for collection

Table 8. Sediment / turbidity hazard management



Figure 4. Sediment from brick cutting not being managed

Vehicle washing was also a common hazard with many car yards and auto workshops washing vehicles with poor awareness and no consideration of discharge to the stormwater drain.

Best Practice Management	Not Being Managed
Vehicles washed in washbays plumbed to sewer	Vehicle washing waste water discharging untreated



Figure 5. Vehicle wash water discharging untreated to the street

Gaps TO EFFECTIVNESS OF PROJECT – to help someone else do a similar project

A high percentage of premises received follow up letters requesting changes to improve waste management and environmental protection. Many of these changes were minor and included;

- Moving waste oil storage under cover
- Bunding of waste oil storage areas
- Removal of drums of liquid and solid waste and other rubbish
- Washing vehicles in washbays plumbed to sewer or on grassed areas
- Washing engines, chainsaws, lawn mowers in washbays plumber to sewer
- Securing paint and chemical storage areas within premises
- Wetting down exposed construction materials including soil, sand and pine bark.
- Sealing exposed stormwater grates within workshops
- Provision of cigarette butt collection bins near entrances

Because the project aimed to raise awareness and educate, the appeal for minor changes was just that. The potential threats were not considered serious enough for enforcement action and the officer had to rely on the individual's personal commitment to make the changes.

Some operators were hesitant if they were unconvinced or believed they need only make changes if their competitors also did so. Conducting work only when environmental conditions suit
Requests for further specific information were also difficult to meet with the current lack of industry specific information on managing waste and or implementing best practice.

Cant talk about accreditation until the basics are understood. Therefore its hard to quantify whether cultural change has begun. There is no law saying they have to make these changes so they simply may not if they believe it is too hard.

Whilst many of these things appear to be minor, simple changes made on site add to the invisible cumulative improvement in water quality. Ideally these premises require follow up to determine if changes were made, give credit where credit is due, all council staff to provide further encouragement or enforcement where necessary.

Simple way to encourage the operators to give it a go – CUSTOMER EXPECTATION. The greater the awareness within the community the greater pressure on small business.

Education Brochure and Other Information Supplied

An educational brochure was produced specific to the project discussing how individuals can make a difference and providing brief information about and contact details for all the project partners. General information about stormwater and wastewater management for commercial sites included easy ways to make a difference such as;

- ‘sweep rather than hose’,
- ‘avoid diluting wastes with water, instead recycle’,
- ‘connect watery wastes to sewer’,
- ‘keep your site clean’,
- ‘install a pre-treatment system’, and
- ‘think about implementing an accredited environmental management system’.

The brochure was handed out to all proprietors visited. It was also contained in the World Environment Day butts out promotional show bags with the free personal portable ashtrays, and was made available for the general public at events such as the Begonia Festival and Ballarat Grammar Careers Expo.

By providing a brief and colourful summary of the project in this way, people had all the information they needed should they wish to make changes or contact any of the project partners.

A list of EPA licensed waste transporters was also drafted and provided to proprietors where necessary and an information sheet entitled ‘What’s the Problem’ was developed to outline some basic environmental impacts of stormwater pollution. This was provided to proprietors where appropriate.

Attitudes

Part of the inspection was a judgement made by the SAO as to the perceived general attitude of the operator to the inspection and any comments stemming from the inspection. Inspections were well received with few requests to ‘come back later’ and no direct refusal of entry. The brochure was a useful tool to leave with the proprietor upon completion of the inspection, as discussed it provided contact details for all the project partners.

At 29 premises visited there was no one available to speak to however an inspection was still undertaken and letter sent to the owner. 295 people were successfully ‘interviewed’.

Attitude	No. out of 295	Percentage out of 295
Very good	48	16%
Good	115	39%
Okay	116	39%
Bad	16	6%

Table 9. Attitudes

Explanatory Definitions

Very Good	highly aware and doing the right thing
Good	keen to do the right thing but initially unaware
Okay	will do what is required
Bad	aware but does not care.

55% of persons interviewed had good or very good attitudes to the concepts of the project, 16% of these were supportive and already doing the right things. Requests for changes to be made were well received by those who were keen and admitted to being unaware of the simple threats apparent at their sites.

39% were not particularly excited by the project but were able to appreciate that what was being recommended was reasonable and would achieve a positive result. These people were likely to think about doing what was suggested. The attitudes, whilst subjective, do give some indication of an expectation that something would get done. Few people directly rejected the ideas or said they would not be doing anything to improve.

28 follow ups were undertaken including reinspections and phone calls. All operators recalled the visit and the project and some had made a few changes as a result.

GO THROUGH THE 28

Pat Willey

Robinson Racing Developments

Media and Promotional Delivery

Regular media coverage was sought for the project. Through a variety of communication modes including electronic, print and verbal, substantial media was achieved for the project. There were five (5) articles in the local paper The Courier, 3 radio interviews, promotions at events such as Ballarat Begonia Festival and World Environment Day, and presentations with static displays in various forums including schools.

The Courier was very supportive of the project in doing stories accompanied by a photo for every release issued. The Courier has a wide readership and as a local paper it was an important vehicle in which to gain regular publicity. The issues and areas covered related directly to the people of Ballarat. Releases were issued in relation to: the launch of the project, good news stories, vehicle washing, cigarette butt litter and world environment day.



Figure 6. Mr Butt giving free personal ashtrays and a showbag to some satisfied Ballarat locals.



Figure 7. The World Environment Day Butts Out promotion team.

On World Environment Day the Environmental Health Team were all involved in distributing 500 free personal portable ashtrays to smokers to raise awareness of the butt litter problem facing Ballarat and draw attention to the day. The project was well received yet litter collections in hotspot areas by council staff since this time reveal no long term behavioural change.

Some radio interest has been generated for the project with a 30minute chat on local radio station Voice FM 99.7. Feedback on this and other verbal presentations has been excellent. Presentations on project findings during the project were presented to numerous forums.

Education and awareness through attendance at environment meetings, promotional days, festivals and schools is a very positive way to keep the issue in the mind of the community. The education and awareness components of the BSMP provide the basis to continue this non-structural strategic approach to stormwater protection.

Other Local Government Authorities have since contacted council seeking information and advice on the strategies used. Melbourne City, Campaspe Shire and Honolulu EPA are three examples of organisations that have sought information.



Figure 8. School talk on stormwater awareness, Sebastopol Primary School

Monitoring of Water Quality

Environmental sampling of trade waste appliances at 6 sites was undertaken on 22nd January 2002. Historically CHW ran a routine sampling program of trade waste facilities when a greater number of trade waste officers were employed. Such sampling was designed to monitor the quality of water entering the sewer system and hence treatment plants.

Sewage treatment plants are designed to process and effectively treat water of a certain poor standard to a legally acceptable environmental discharge standard as outlined in the State Environment Protection Policy Waters of Victoria. Hence trade waste must meet an 'acceptance to sewer' criteria in a range of parameters to ensure the effective operation of the plants. The parameters tested here, biological oxygen demand, pH, suspended solids and total dissolved solids are all critical trade waste parameters.

The majority of premises inspected along Howitt St are connected to the sewer which runs to the North Treatment Plant. Premises East of Burnbank St and West of Park St along Howitt St run to the South Treatment Plant. All premises in the Delacombe area are connected to the sewer running to the South Treatment Plant.

It was felt more relevant to sample these facilities as time and money were too restrictive to enable environmental sampling of specific drains in relation to visits undertaken. Such a study would need to be carried out over a longer time than that available and more background data is needed to indicate any change or improvement in water quality. It is recommended that certain waterways or drains be sampled as part of a student research project. Such projects will need to be scoped out fully.

Five (5) triple interceptor traps were sampled, one which discharged to stormwater and the others to sewer, and one (1) vertical gravity separator.

Parameters sampled and definitions

Biological oxygen demand (BOD)	This is a measure of the oxygen demand within the water sample, calculated by measuring the amount consumed over a 5 day period by organisms. Water entering the sewer must be below a required BOD of 500mg/L so that the biological processes of water purification within the treatment plant are not compromised. BOD was tested because should water received to the treatment plant be contaminated with oxygen depleting pollutants such as organic matter, the oxygen available for bacteriological purification within the plant will be reduced.
pH	pH is a measure of the acidity or alkalinity of a water sample. The pH scale is 1 to 10 with 7 deemed to be neutral. Samples <7 indicate the water is more acidic and samples >7 are more alkaline. Water entering the sewer system is required to be within pH range 5.5-10.0, however ideally it should be as close to neutral as possible.
Suspended solids (SS)	This parameter is a measure of how turbid or dirty the water sample is. It indicates the amount of visible particles suspended or floating in the water sample. The greater the amount of suspended solids the more ineffective the treatment process within the plant. Turbid water entering the sewer system can cause blockages, foaming, smothering of bacterial agents and may block sunlight which also acts as a disinfection agent.
Total dissolved solids (TDS)	Dissolved solids are those particles within the water sample not visible but still contributing to the pollutant load by virtue of their nature. High levels of TDS are indicative of excess nutrients including nitrogen and phosphorous.

Results

Premises	BOD mg/L	pH	SS mg/L	TDS mg/L	Result
Car wash triple interceptor trap connected to sewer - Howitt St	140	6.8	120	320	Pass
Motor Vehicle Workshop vertical gravity separator connected to sewer – Howitt St	>760	9.5	156	9400	Fail
Car wash triple interceptor trap connected to sewer - Ballarat Central	100	8.6	50	800	Pass
Automotive workshop triple interceptor trap connected to sewer – Delacombe	360	7.4	230	1300	Fail
Service Station car wash triple interceptor trap connected to sewer – Delacombe	40	7.6	85	360	Pass
Jack Repairs triple interceptor trap connected to stormwater - Delacombe	100	11.6	120	1180	Fail
Acceptable Standards for Trade Waste (ref CHW)	500	5.5-10.0	500	1000	
Acceptable Standards for Treatment Plant discharge (ref SEPPWoV)	40g/m³	6.0-9.0	80g/m³	500???	

Table 10. Sampling Results

Three (3) out of the six (6) samples failed, indicating that a lack of maintenance or system design of trade waste facilities is a problem. CHW suspected systems had been failing but had not been routinely monitoring site specific performance in recent times.

This lack of awareness of maintenance puts hence strain on the effectiveness of the treatment plant which processes both trade and domestic wastewater from the Ballarat community. This spells trouble not only for the natural environment but also the water users downstream from Ballarat as our waters flow further down the catchment.

Referrals

Central Highlands Water – Trade Waste

The project commenced with a strong focus on the inspection of trade waste facilities in order to determine the status of connections in comparison to CHW records. Site visits revealed the entire range of expected outcomes, from well maintained facilities paying the annual connection fee, to some operators disposing of wastes inappropriately and not being aware they were required by law to connect for the disposal of such wastes.

Discussions of the services provided by liquid trade waste collectors and transporters revealed a general feeling of satisfaction with collectors and the list of licensed transporters was provided to those seeking to try a different service or commence authorised collection.

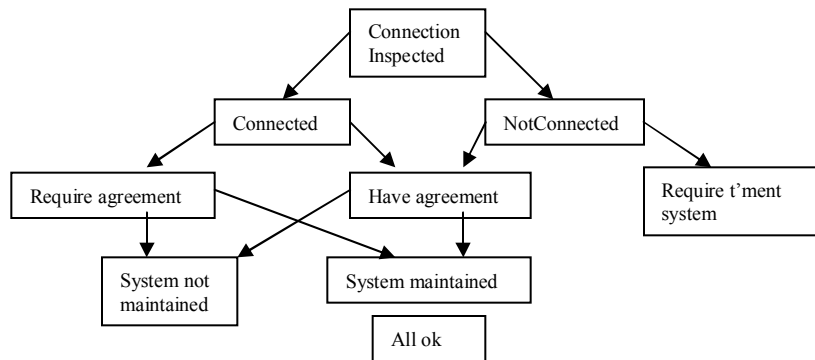


Figure 9. CHW trade waste connection chain

Trade waste connection inspected	66
Trade waste all ok	31
Require agreement (not paying fee)	13
Not connected but paying fee	5
Require treatment system	54
Central Highlands Water referrals	104

Explanatory Definitions

Trade waste connections inspected –	this category referred to visits where there was a trade waste appliance to inspect which was in use.
Trade waste all ok –	this category referred to inspections which revealed no problems at all with the trade waste appliance in relation to cleanliness or status of trade waste agreement.
Require agreement –	this referred to premises connected to the sewer system but not identified as a trade waste customer and therefore not currently paying a connection fee.
Not connected but paying fee –	this category referred to the small number of premises identified as trade waste customers and paying a fee however they did not have or require a trade waste appliance.
Require treatment system –	this category referred to premises requiring some type of treatment system for their waste. The majority of these premises require the installation of a trade waste appliance and would therefore need to apply for a connection to sewer and enter into a trade waste agreement.
Central Highlands Water referrals –	this figure included all premises in total referred to CHW for action or information.

As a result of the findings of inspections being reported at steering committee meetings, management at CHW took the initiative to employ a trade waste coordinator full time to investigate the referrals of

the SAO and begin a structured trade waste facility inspection process and audit for their organisation. The maintenance reports, inspection notes and sampling results reinforced the need for CHW to be able to document and gauge more exactly the inputs being received to the treatment plant

It also became obvious between project officers that many initial referrals to CHW were not dealt with due to insufficient resources or the absence of a person dedicated to the task. The appointment of the coordinator remedied that to a degree during this project however the long term sustainability of the trade waste awareness identification system / management system for tracking customer compliance and performance for CHW will be challenging for one officer.

The working relationship developed between the SAO and CHW during the project has been positive. Joint site visits provided proprietors with ready access to two agencies at the same time ensuring good customer service and the provision of instant advice. The findings of the project support the need for CHW to undertake a review of their current approach to monitoring and managing existing trade waste facilities.

The work has begun a partnership which it is hoped may continue given the role of environmental health officers in inspecting premises which may generate trade waste.

Inspections being undertaken by the trade waste coordinator are also proving beneficial to COB. Referrals have been received by the Environmental Health Unit in relation to food premises not emptying grease traps thereby potentially creating odour and vermin hazards to public health.

In this way the project went beyond expectations.

CHW have since approached COB for assistance in identifying new trade waste generators in relation to new food premises by improving links to the food premises registration system. Environmental Health Officers are ideally placed to play a role in trade waste inspections and would be able to forward that information to CHW.

Environment Protection Authority - Pollution Complaints

Twenty inspections were undertaken as a result of complaints lodged with the SAO. The presence of an officer dedicated to stormwater awareness and protection within Council appeared to generate increased calls to the environmental health unit. These calls generally came from the general public but also from other council departments, external authorities and industry.

Ten incidents were referred to the EPA for information, advice and action. Regrettably the anticipated support hoped was not forthcoming and responsibility to deal with those referrals remained with the COB. Similar to CHWs inability to undertake appropriate action on referrals, the EPA were also under resourced to be involved in, or respond to, the incidents referred.

The SAO and City Of Ballarat EO worked closely on specific instances of pollution in an attempt to provide remedies and educate the polluter. The EO encouraged communication with the EPA in instances where support was sought. The SAO and EO quickly determined from the examples which arose that greater investigation and enforcement of environmental pollution incidents is required in Ballarat.

Pollution Complaints

Pollutant	Nature of Incident
Gross contamination	Old stormwater drains within waste recycling facility grossly contaminated
Acid seepage	Trade waste from plating facility discharging to stormwater system causing serious

	infrastructure damage
Vehicle washing	Industrial auto repair centre draining unplumbed vehicle wash bay directly to nearby creek
Food processing waste oil	Spillage from unlicensed waste oil transporter direct to stormwater system
Gully trap water	Recently connected directly to stormwater

Table 12. Pollution Complaints



Figure 10. Sediment flowing



Figure 11. Food Processing Waste oil

Catchment Management Authorities – No referrals

Whilst no specific referrals were made to the CMAs, they were kept up to date with findings and were keen in particular for the project to document attitudinal change towards stormwater. Considering the relatively recent rise of catchment ideology, raising the profile of diffuse sources of pollution and their cumulative negative effect on water quality is one part of raising awareness of living in a catchment.

The CMAs were very supportive of the method of delivery of the project, to activate change through personal visits and one-on-one communication. Spending large sums of money on large scale campaigns which may be exposed to more people doesn't necessarily ensure a large scale effect. Better stormwater management will assist in meeting broader catchment management objectives, one of the primary concerns for catchment planning is water quality in the catchment.

City Of Ballarat

SAO also qualified EHO able to handle pollution investigation and serve infringement notices.
Discuss infringements issued?

Car wash
Carpet cleaning waste
Industrial process

Probs of role definition within council? Local laws, en health, eo, planning

DISCUSSION

Achievements of the project

IN SHORT – SUMMARISE STUFF ALREADY RAISED

What does it all mean??

What have we achieved when compared to the original project plan?

What have we done beyond that?

Expected / not expected

Arguments

Who is going to deal with It

How might the issues be met, are they being met in the BSMP?

Repercussions for bcc, chw, epa

implications

No Headings

Data collection

Awareness

Jasons position

Promotion for environmental health

Have people made the changes? How to quantify this?

CONCLUSION

Key issues identified

Trade Waste

Triple interceptor or grease trap connected to stormwater
Premises requires trade waste appliance and connection to sewer
Grease traps requires more frequent emptying to avoid overflow and pipe blockages
Trade waste appliance such as vertical gravity separator requires general maintenance including backflushing
Food waste discharge directly to stormwater drain
Vehicle washing waste discharging to stormwater drain

Direct stormwater threats

Silt and sediment in the street from construction works
Oil spillage to paved areas
Stormwater drain exposed to contamination inside workshops
Waste oil storage inadequate
Litter including cigarette butts, lawn clippings and sawdust
Acid seepage from plating works
Storage of paint not adequate
Detergents from various types of washing practices in drain
Nutrients from variety of sources
Carpet cleaning wastewater
Roof cleaning waste water
Soil sifting emissions
Brick and kerb cutting waste
Soiled ground
Paint brush / roller washing

Legislation / strategic

Lack of a coordinated approach to environmental protection, ie law enforcement, within council and between council and EPA

Key recommendations

To be developed from my findings and the input of the steering committee members

Seek funding for education and awareness officers
Develop an industry based education program to be run on a regional scale
Develop community generated awareness – ask businesses you use what they do with their wastes such as oil, solvents and wash waters.
Develop a green business list for promotion of businesses doing the right thing.
Develop a regional strategy on best practice for vehicle (and driveway/road) washing
Develop stormwater awareness nuisance protocol – in light of concerns with agency responsibilities under existing legislation – who should do what and when, what is most effective?

Run workshops on best practice for construction sites, paint contractors, road work sediment control, paved surface cutting, roadside pollutant containment and removal.

Write and introduce a planning condition for cigarette butt bins to be fixed on the outside of new buildings or for businesses to provide facilities at entrances.

Establish stormwater quality as a critical issue in the MPPH and MSS

Link to the BSMP

Seek funding support for strategic projects through VSAP / EPA

Identify responsibility within council and between council and other authorities

Develop coordinated approach to environmental protection

Determine level of assistance EHOs may provide to CHW in relation to trade waste inspections

Determine how council can be effective in picking up potential trade waste customers for CHW and referring them

CHW increase the number of trade waste inspectors

Develop protocol for referrals between CHW and En Health Unit

APPENDIX – Media and Promotional Delivery.

The Courier - Lake Pollution Under New Scrutiny	13/10/00	Introducing the project and Leonie
ABC regional radio	11/10/00	Interview with Jonathon Ridnall
WIN TV	10/10/00	Mentioned on the 6pm news
Catchment Management Conference	16-17/11/00	Display
Waterwatch Newsletter	14/12/00	Article
Catchment Management Forum Hamilton	15-16/11/01	Attendance at Conference, verbal promotion of Project
The Courier - City Focus on Stormwater	16/11/01	Introducing project & Felicity
The Courier - Companies Threatened with Fines	18/12/01	Vehicle Washing
The Courier - Smokers Told to Stop Polluting Drains	8/2/02	Cigarette Butts Litter
3BA Radio Interview on butt litter	5/2/02	Link to Clean Up Australia Day 3/3
Begonia Festival	1-11/3/02 Display	Week Long Manned Promotional Ballarat
The Courier - Smokers a Target of World Environment Day	5/6/02	Butts Out Portable Ashtray Campaign for WED. Internet publicity; thecourier.com & www.BUTTsOUT.net
Environment Officers Meeting Torquay	12/7/02	Attendance at Regional meeting, verbal promotion of Project
VSAP Grant Funding Workshop Colac	12/8/02	Presentation and display
VSAC tour of Ballarat	5/9/02	Presentation and display
Voice FM local radio	8/10/02	30min chat on project and upcoming release of report
Travelling Frog Show, Sebastopol Primary School	5/11/02	Presentation and display

Smokers a target of World Environment L

By ADAM PEARCE

WORLD Environment Day is a time for the community to focus on how people can protect the environment so it can be enjoyed by future generations. The City of Ballarat is supporting the cause with a range of exciting initiatives.

While tree planting, water conservation and alternative energy activities will be conducted during the week until Tuesday, June 11, smokers are also the target of an education campaign.

Environmental health officers will be on site in Central Square, Bridge Mall and Wendouree Village to distribute portable, personal ashtrays to smokers.

The council was approached by the makers of the ashtray after they became aware of the council's attempts to clean up stormwater systems.

Cigarette butts are not biodegradable and, besides looking bad sitting on the ground, they enter Ballarat's waterways through the storm water system, where they can harm or kill aquatic life.

Environment health officer, Felicity Glover reminded people that the disposal of cigarette butts on the ground was an offence under the Litter Act.

"Cigarette butts are a huge component of street litter, and there is a lack of awareness about the negative effects they have on our local waterways," she said.

The reusable blue ashtrays are fire resistant and seal to lock away cigarette odours until they can be emptied in the nearest bin.

World Environment Day feature — Pages 21-24

AT A GLANCE

WHAT: World Environment Day

WHEN: Today
ACTIVITIES: City of Ballarat activities include tree planting, information sessions on alternative energy and efficient building practices, environmental films and interactive art display and discussions on climate change.

WHO: Mayor David Vandy will open World Environment Week activities at the Yarwoose Flora Reserve today at 10am and City of Ballarat activities will continue until June 11.



Butt in: Environmental health officer Felicity Glover with a portable ashtray that council hopes will see use to reduce litter entering waterways. Picture: HOLLY CURTIS

Smokers told to stop putting storm drains

Discarded butts are a threat to Ballarat waterways

By FLEUR MORRISON

BUSINESS operators have been encouraged to take simple steps to prevent cigarette butts from polluting Ballarat's stormwater system.

A new project aims to highlight the damage that butts cause in the waterways, and suggest ways that business owners and the public can minimise the problem.

Stormwater project officer Felicity Glover said cigarettes entered the stormwater system when they were swept from footpaths into drains.

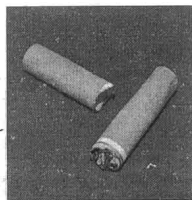
She said many business operators were unaware that staff and customers were discarding butts at the front of their premises, causing significant stormwater pollution.

"The installation of cigarette butt bins at premises doors, or in rear areas for staff use, is a simple initiative," she said.

"It makes it easy for people to do the right thing, dispose of their butts properly and prevent littering of our environment."

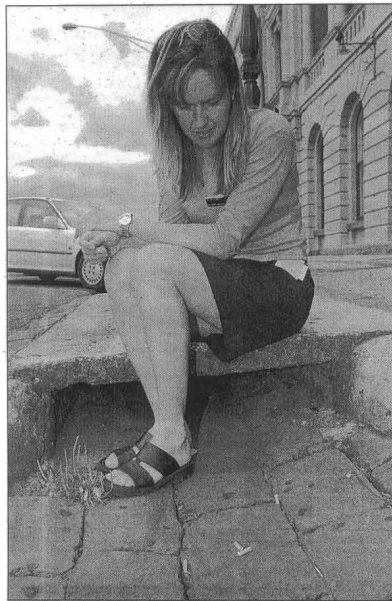
The problem of stormwater pollution has been noted around Victoria, with the Environment Protection Authority Beach Report finding that cigarette butts were the most common litter at 12 Port Phillip Bay beaches.

"A litter survey of Ballarat footpaths, drains, or the gross pollutant traps which council has installed such as the one at the eastern end of Bridge Mall, draws similar conclusions to the EPA report in identifying cigarette



ABOVE: Discarded butts such as these can harm or kill aquatic life and damage water supplies and waterway environments.

RIGHT: Awareness officer Felicity Glover is asking smokers to be more considerate about where they discard their butts.



butts as a huge component of street litter," Ms Glover said. When butts enter waterways, they can harm or kill aquatic life and damage water supplies and waterway environments.

As part of the project, the City of Ballarat, Central Highlands Water, Corangamite and Glenelg-Hopkins catchment management authorities and the Environment Protection Authority will appeal to smokers to change their habits.

They are asked to become considerate smokers who do not litter.

The Courier Tuesday December 18th 2001
pg. 7

Companies threatened with fines

Waste water run-off contaminates Ballarat lake and creeks

By KAREN DAVIS

COMPANIES that fail to treat run-off water risk prosecution, Ballarat City Council has warned.

The warning applies to waste water from activities such as washing cars and industrial machinery.

Direct discharge of waste water to the storm water system could lead to fines and prosecution under the Environment Protection Act of 1970 and the Litter Act of 1987.

City of Ballarat stormwater awareness officer Felicity Glover, who has been collecting data on waste water levels, said washing cars, trucks and heavy machinery contributed substantially to contamination of local waters.

Lake Wendouree, Canadian Creek and the Yarrowee River were just some of the waters at risk, she said.

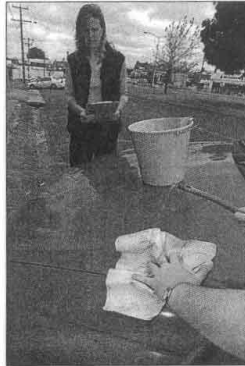
"Vehicle washing should always be done in a constructed wash bay which drains to a sewer through a pre-treatment device," she said.

"Or on grassed areas where water soaks in and does not run off site."

Ms Glover said many premises undertook washing with no collection or treatment of the waste water.

"Waste water can lead to algal growth, and fuels, oils, paints and heavy metals are toxic and can accumulate in river sediment," she said.

"Vehicle washing contributes a long list of substances to runoff including oils, detergents, pet-



Water worry: City of Ballarat environment health officer Felicity Glover is collecting information on waste water levels.

roleum products and vegetation debris and plant seeds. These substances make their way into receiving waters and alter habitat, degrade water quality and alter biodiversity of the ecosystem."

Ms Glover said council was hoping to improve poor practices through an awareness program.

She said directing waste water to a sewer via a device like a silt pit, triple interceptor trap or vertical gravity separator will ensure no raw waste is discharged into the environment.

Stormwater Awareness Project

INSPECTION REPORT – STORMWATER AND SEWER DISCHARGES



Property address:
Occupier:
Contact name and phone number:

Discharge to stormwater

Stormwater only

Awareness/attitude re stormwater issues

Paved areas clean/dirty

Overland flow
clean/dirty

Comments

Wash down area
Detergent
Hydrocarbons
Excessive dirt
Other

Chemical/waste storage
area
Bunded
Covered
Other

Pre-treatment system/s

Discharge to sewer

Trade waste agreement

Pre-treatment system
Silt trap
Settling pit
Grease trap
TIT
Cooling pit
pH correction
Other

Type of discharge
Stormwater
Silt/dirt
Grease/oil (food)
Hydrocarbons
Chemicals
Other

Recommendations:

Date:
Inspected by:

Waste transporters with EPA permits and other companies providing relevant waste services in the Ballarat area

Name	Phone	Triple interceptors / oil	Engine & hydraulic oil	Oil filters	Solvents (kero, etc)	Paints/ thinners	Caustic/ alkaline	Coolants and brake fluids	Empty drums	Grease traps	Vegetable / animal oil	Supply of spill absorbents
Whitford Liquid Waste	5331 1829	Yes								Yes		
SITA Environmental Solutions (previously Pacific Waste Mgt)	5336 2733	Yes	Yes		Yes			Yes	Yes	Yes		
Cleanaway	5335 8805	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Ververis Tallow	9366 7700										Yes	
Nationwide Oil	9318 4400		Yes									
Triple R Waste Management	9748 4060	Yes	Yes	Yes	Yes	Yes		Yes	Yes			
ERS Australia (previously Safetyclean)	9791 5388	Yes	Yes	Yes	Yes	Yes	Yes	Yes				Yes
Hines Waste Technology	9357 9333	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
Chemsal	9369 4222	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
Collex Waste Management	9555 9366	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Envirochem	9357 0424		Yes		Yes	Yes	Yes	Yes	Yes		Yes	
ACE Scrap Metal & Steel	5339 1753								Yes ***			
SafeWaste Pollution Control	9243 9202											Yes

Note:

1. This list is not exhaustive. Other waste transporters may service the Ballarat area.
A full list can be obtained from EPA in Geelong on 5226 4825 or in Melbourne on 9695 2722.
2. The City of Ballarat does not endorse any of these companies. This list is provided for information only.
3. The information in this table may change. Please contact individual companies to confirm whether they pick up your particular wastes.
4. *** Drums which have contained chemicals or prescribed wastes can only be taken by ACE Scrap Metal if they have been triple rinsed and punctured

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ADD IN WHATS THE PROBLEM?? AND BROCHURE??