Hawkesbury City Council

attachment 1
to
item 74

Waste Management Advisory
Committee Agenda
31 March 2010

date of meeting: 13 April 2010
location: council chambers
time: 6:30 p.m.

waste management advisory committee business paper

date of meeting: 31 March 2010
location: council chambers
time: 4:00 p.m.

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WASTE MANAGEMENT ADVISORY COMMITTEE

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Meeting Date: 31 March 2010

SECTION 1 - Confirmation of Minutes

The Minutes of the Waste Management Committee held on 18 March 2009 were submitted for confirmation.

SECTION 3 - Reports for Determination

Item: 1 Alternate Daily Cover

REPORT:

The Waste Management Advisory Committee, at its meeting held on 18 March 2009 resolved:

> *"That the proposed purchase of the Tarpomatic be postponed until a 10 year plan can be completed outlining the proposed strategic direction for the WMF, the funding required, how the proposed strategies are to be funded and the time frames for their completion."*

A ten year plan has now been completed based on the current operation of the facility and including rehabilitation and post closure monitoring of the site. A number of scenarios have been examined (separate report to this meeting), and whilst the financial implications of an alternate waste technology system (AWT) have not been included at this stage, it is considered that the use of an alternate daily cover at the waste management facility is warranted at this stage to extend its life whilst the investigation into an AWT is pursued.

Investigations into alternate daily cover (ADC) materials (used to cover exposed waste) have been undertaken in an effort to reduce the amount of Virgin Excavated Natural Material (VENM) currently used as cover material in the landfill at the Hawkesbury City Waste Management Facility.

It is estimated that approximately 30 – 40% of the landfill space may be consumed by VENM won onsite which is currently used as daily and intermediate cover. The use of an ADC would reduce the amount of VENM utilised during landfilling operations, currently 150mm per day, over an area of exposed waste of approximately 625m^2.

Whilst an ADC does not negate the need for VENM from landfilling operations entirely, it has the capacity to substantially reduce the quantity of VENM used.

Benefits of using ADC – (based on the two ADC's within report).

Based on the current average of 35,000m^3 per year of total void space filled, it is conservatively estimated that the void space consumed by VENM is 30% = 10,500m^3.

Even if only half of the VENM's 30% fraction could be saved using ADC the void space saved would be 15% = 5,250m^3.

The saving in void space could also equate to an additional years worth of available space for waste possibly being gained after approximately 6.5 years. With the expected life of the landfill estimated at 8.5 years this could add approximately another 1.3 years to the life of the landfill.

There are a number of alternative covers on the market including plastic films, spray on materials, and removable tarpaulins.

Plastic films have been tried at some facilities however they are susceptible to the effects of wind, which makes them difficult to apply and keep in place. The plastic films also require VENM to be applied over them to hold them down, partially defeating the purpose. The wind can also present a problem for foam types of spray-on covers as they can be hard to apply and may be blown from the landfill.

There is however two alternative daily covers that have received praise from other landfill operators, have been researched, and demonstrations on their application observed. One is a tarpaulin system called "Tarpomatic" and the other a cellulose based spray on material called "ConCover".

"Tarpomatic" utilises a reusable strong material cover (tarpaulin) that can be laid upon the exposed waste of the landfill working area at the end of each day to act as a temporary night cover and then removed the following morning so that landfilling operations can resume. The "Tarpomatic" system consists of tarpaulins with metal chains sewn into them to provide weight so that it will remain in place should winds be experienced. The tarpaulins are laid in place using an engine powered deployment device, which is simply picked up by the waste compactors front blade and controlled by a remote control unit from the waste compactors cabin. The operator uses the waste compactor to move the deployment device to the desired location and then using the remote control the tarpaulin is unrolled onto the ground as the compactor slowly drives backwards, deploying it over the days compacted waste.

The "Tarpomatic" is currently being used by Gosford City Council at their Woy Woy and Kincumber landfills. The cover is removed at the beginning of the day, which allows the new waste to be placed directly upon the waste from the previous day, thus reducing the amount of airspace being consumed.

The Operations Manager of Woy Woy landfill expressed his satisfaction with the cover and advised that they had been using the system for a few years. They had used plastic film covers in the past however much preferred the "Tarpomatic" system.

"ConCover" is a cellulose based spray on material which sets in a cardboard/paper mache type state. The "ConCover" acts as a thin cover over the waste which holds the waste together and provides a thin layer to act as a night cover. The cover material is sprayed onto the working face at the end of each day using a specially designed spraying unit which can be towed behind an onsite machine. The advantage of using this cover system is that when the operators become proficient at using the spray unit the cover will only take minutes to apply and it does not require removal the following day.

"Concover" is currently used in NZ and the UK and is being trialled at some landfills in Australia including the Horsley Park landfill and the Awaba (Lake Macquarie) landfill.

The Horsley Park landfill has just finished a 6 month trial using the "ConCover" system and was awaiting a decision to be made by the Department of Environment, Climate Change and Water as to whether approval would be given to continue using the "ConCover" system. The Operations Manager was very happy with the cover saying that it held the waste in place and saved a large amount of airspace as they were not using VENM as night cover during the trial. The Operations Manager advised that the site was susceptible to high winds which the cover coped with very well and the cover also held up well during rain events.

The "ConCover" system allows for different mixes to be made according to the length of time the cover is to remain in place or if wet weather is to be experienced.

The "ConCover" representative has submitted a proposal for a 6 month trial at the Hawkesbury City Waste Management Facility of the "ConCover" system at a cost of $79,806.98 excl. GST.

Should the decision be made to continue to use the cover after the 6 month trial, $7,500 of this cost will be reimbursed from the sale price of the new application machine that Council would be required to purchase, as detailed further in the report.

Financial Comparison

Tarpomatic

The cost of the "Tarpomatic" deployment machine is approximately $168,740. The tarpaulin deployment system is lifted by the front blade of the waste compactor, of any make, and is remotely operated by the waste compactor operator, allowing the deployment or retraction of the cover as needed.

The tarpaulins are approximately $12,500 each and are an additional cost to the deployment machine. It is estimated that two tarpaulins would be required to ensure adequate ability to cover waste each night at the Hawkesbury City Waste Management Facility, and it is recommended to purchase an additional tarpaulin to be onsite as a spare. The estimated life of each tarpaulin is approximately 2 years, with the life span depending upon how carefully they are handled by the waste compactor operator.

Cost of deployment machine = $168,740
Cost of tarpaulins = $12,500

First year cost = $168,740 + 3 x $12,500 (2 for use, one as spare)
= $206,240

Additional tarpaulins required every 2 years = 2 x $12,500

Subject to the condition of the tarpaulins it would cost approximately $12,500 per year plus any maintenance.

The "Tarpomatic" has already been given approval by the Department of Environment, Climate Change and Water to be used on other putrescible landfill sites, however a licence variation would be required to use the Tarpomatic, and verification made to the DECCW that it complies with their requirements at the Hawkesbury City Waste Management Facility.

The advantages of the "Tarpomatic" system are that no additional waste levy is payable as no extra waste is used to cover the exposed waste face. The only consumable item is the tarpaulin itself estimated at $12,500 each over a two year period. This would save over $70,000 per year when compared with the "Concover" system.

The cost of the tarpaulin may be further reduced if its life exceeds 2 years due to careful treatment gained through experience over time.

The disadvantage of the system is that the tarpaulin can be damaged from sharp objects and rough handling or dragging of the tarpaulin by the machine operator. This can be avoided with staff training and careful operation of the "Tarpomatic" system.

The "Tarpomatic" system requires staff time to place the tarpaulins each afternoon and remove each morning, however this would be a fraction of the time required to place, spread and compact the 150mm of VENM on the waste face on a daily basis as currently required.

ConCover

The cost of the "ConCover" application machine varies depending upon the size required and the terrain. Prices range from $45,000 to $150,000.

Following discussions with "ConCover" representatives it was determined that a unit for the South Windsor site, which would hold approximately 2 days worth of cover and can be towed by heavy plant, may cost in the vicinity of $105,000 - $110,000 depending on the Australian dollar exchange rate.

The cost of the consumable cover material is estimated at $0.33 - $0.37 per m² once the operators are experienced in applying the cover. This rate represents a cost of $231.25/day and $84,406.25/annum based on a cover area of 625m² @ $0.37/m².

A waste levy will also be payable to DECCW as the consumable cover material "Concover" would be classed as a waste going to landfill.

The waste levy to be paid below is calculated using materials to be supplied for 6 month trial @ 20 tonnes.

Levy = 20 (tonnes per 6 months) x 2 (2 six month periods) x $52.40 (current waste levy)
= $2096/year (Note: material for trial exceeds proficient use).

The advantage of the "ConCover" system is that the cover material does not require removal before commencing filling the following day and would hold the previous days waste in place whilst the new waste is being deposited. This would be particularly advantageous on a windy day as plastic bags are prone to being blown from the tip face.

The quick application of the cover and the fact that the cover is not required to be removed before filling the following day is beneficial in terms of the operator's time.

The "ConCover" system can also be mixed to meet some intermediate cover situations, however VENM will still be required to be used where vehicle access is needed.

The disadvantages of the "ConCover" system is that it does not currently have approval from DECCW to be used as an alternative daily cover, the cover will also attract the waste levy as it is being applied to the landfill, and the cost of consumables are approximately $85,000 per year.

Over a 10 year period, based on today's dollars, the cost of purchase of the "Tarpomatic" including 3 tarpaulins, and replacement of the tarpaulins 5 times is $268,740. Comparatively the best case scenario relating to the purchase and application of "ConCover" (purchase price of $105,000 and consumable cover material cost of $0.33 per m^2) over the same time period is $837,187.

Financially, the "Tarpomatic" system far outweighs the "ConCover" system and will give additional life to the Waste Management Facility.

Funding

Funding required for this proposal would be provided from the Waste Management Facility Reserve.

RECOMMENDATION:

That tenders be called for the provision of an Alternate Daily Cover System for the Hawkesbury City Waste Management Facility.

ATTACHMENTS:

There are no supporting documents for this report.

oooO END OF REPORT Oooo

Item: 2 Recycling Tonnage and Revenue

REPORT:

The Hawkesbury City Waste Management Facility (HCWMF) received approximately 2700 tonnes of green waste and sold approximately 600 tonnes of mulch in the 2008/09 financial year. This has resulted in a surplus of approximately 2100 tonnes (minus evaporation and decomposition) of mulch remaining onsite for the year. Due to a similar trend in previous years there is a surplus of stockpiled mulch of approximately 4000 tonnes on site as surveyed in June 2009.

The green waste, as with all other material that is brought onto the site, attracts the waste levy which is currently $52.40/tonne paid to the Department of Environment, Climate Change and Water each month, as it enters the facility. It can only be subtracted from the levy once it has left the site as green waste or mulch within two years from the year in which it was originally received. It would therefore be beneficial to engage an external company, with its own markets and customer base, to process the green waste and remove the mulch from the facility so that the levy can be claimed back as soon as possible after receipt of the material. This would not only reduce the levy to be paid, but would also reduce the amount of material stockpiled onsite, and subsequent maintenance of those stockpiles.

Five companies were approached with a view to supplying proposals for the processing and removal of green waste from the HCWMF, and of those companies three proposals were received:

Company 1	
Removal of mulch currently onsite	$15/tonne + GST
Process and remove green waste	$36/tonne + GST
Process timber and leave onsite	$6.85/m³ + GST
Company 2	
Removal of mulch currently onsite	$21/tonne + GST
Process and remove green waste	$45/tonne + GST
Process clean timbers, have tested for heavy metal contamination and remove from site if passes appropriate tests.	(may be discussed further)
Company 3	
No prices given	
Onsite processing, stockpiling, blending and sales.	
Propose that additional materials be brought onto the site to blend with the product and value add, such as drill mud from drilling operations, food waste, etc	
** All prices and services quoted by the companies are strictly confidential and must not be disclosed to any third party.*	

The proposals by the first two companies had a similar structure with different prices supplied for the processing and removal of the green waste material from the site. Company 1 provided a price for the processing of the timber and leaving it onsite, whereas Company 2 advised that some processed timber waste could be transported from the site if the processed material passed the appropriate test. This was left open to further discussion.

The proposal supplied by Company 3 did not provide any prices for processing or removal but instead proposed that the company manage the green waste onsite for an agreed fee and credits be returned to Council for entry of agreed organic waste streams for co-composting. The ownership of the composted material would remain with the company under this scenario.

The current costs associated with the green waste mulch includes the mulching of material, relocating the mulched material into stockpiles, turning of the stockpiles, and loading the mulch onto customers vehicles. If a contractor was employed to process and remove the green waste, Council would receive the full levy amount back for the green waste that is transported off the site as well as save on the cost to move and place into windrows (approximately $30,000/year). The current cost to process the material (approximately $70,000/year) would be part of the contractor's costs.

As detailed, the processing costs and the onsite moving costs per year are approximately $100,000. The levy amount, for green waste received for the 2008/09 financial year would be approximately $142,895, based on the current levy amount of $52.40/tonne. If Council were to pay around $36/tonne + GST for the processing and removal of the newly processed green waste from the site there could still be a saving of around $35,000 over the year.

The lowest price to remove the already processed green waste material was that of Company 1 at $15/tonne + GST. This material would include some of the previous years mulch when the waste levy was $40/tonne, plus some material still remaining onsite from the salvinia composting trials for which there was no levy paid. The removal of this older material from the site is advantageous as it allows the site to be better maintained, reduces the risk of mulch fires, and makes the site more aesthetically pleasing.

The brick and concrete waste of approximately 1020 tonnes received in 2008/09 was also mentioned to a number of companies, however only one proposal was received.

The recycling company provided the following prices exclusive of GST for the material types as detailed below.

Clean demo concrete, less than 1200mm	$11.25/tonne	Cart & Tip
Clean Brick /Brick Mix	$14.75/tonne	Cart & Tip
Asphalt Lump / Mix	$14.75/tonne	Cart & Tip
Asphalt Profiles	$13.00/tonne	Cart & Tip
** All prices and services quoted are strictly confidential and must not be disclosed to any third party.*		

Based on last years tonnage of brick and concrete received and the highest rate given by the company ($14.75+GST/tonne) the cost to have the material removed from the HCWMF would be approximately $16,550 per year. The levy amount that would be received back under this scenario would be approximately $53,550. The other amounts that would also need to be taken into consideration are the gate takings of greater than $20,094, the processing costs at approximately $15,300 @ $15/tonne and the minimal cost to load the trucks. Therefore if all the material was of a quality acceptable to the company then Council could possibly save approximately $72,400 for the year.

Funding

No additional funding is required.

RECOMMENDATION:

That:

1. Tenders be called for the removal, and/or the processing and removal, of green waste from the Hawkesbury City Waste Management Facility.

2. Further discussions be undertaken with the recycling company who has provided quotations with regard to their acceptance criteria for brick and concrete materials and if deemed acceptable, arrange for the removal of that material as soon as possible.

ATTACHMENTS:

There are no supporting documents for this report.

oooO END OF REPORT Oooo

Item: 3 Waste Drop-Off Facility and Education/Amenities Building

REPORT:

In 2005, consultants C4ES Pty Ltd were commissioned by Hawkesbury City Council (HCC) to research the many facets of the waste disposal industry and provide options and projected outcomes for extending the life of the landfill operations at the Hawkesbury City Waste Management Facility.

C4ES compiled the report "Future Waste Strategies for Hawkesbury City Council and its Community" dated August 2005, detailing a number of options available and recommending that HCC improve their current systems whilst giving the various new waste technologies time to prove themselves. C4ES suggested improvements to the system including the construction of a Drop-Off Facility and Education Centre, which was estimated at the time, would take approximately 2 years to implement.

Development consent was sought, and granted in November 2008 for DA424/08 – Alterations to an Existing Waste Management Facility, which incorporated a new waste drop-off and retrieval centre, revision of internal roadways and construction of an education/training/amenities building.

It is currently estimated that there is approximately 8.5 years life remaining in the landfill if it continues to fill at the current rate. With the landfill approaching the end of its life, consideration needs to be given to options for processing and disposal of waste for the future. It has been identified that HCC will require the use of some form of Alternate Waste Technology (AWT), whether it be located on the site or at an external facility, to extend the potential life of the Waste Management Facility and achieve targets set by the State Government regulators, DECCW.

The State Government through the Waste Avoidance and Resource Recovery Strategy 2007 have set the following State targets to be achieved by 2014 for the recovery and reuse of secondary materials in each waste stream:

- Municipal waste – from a baseline 26% to 66%
- Commercial and industrial (C&I) waste – from a baseline 28% to 63%
- Construction and demolition (C&D) waste – from a baseline 65% to 76%

HCC should be aiming to achieve these targets in order to assist the State Government to reach their goal. To achieve the 66% municipal target some form of AWT will be required to be utilised to obtain such a high recovery rate. Should the target of diverting 66% of municipal waste from the landfill be reached, the life of the landfill could be extended by a factor of 3 or approximately 25 years.

It was identified within the C4ES report that the Waste Drop-Off Centre had the potential to increase the diversion of recyclables from the landfill by 12% of the total waste to landfill, increasing the life of the landfill by a projected 2 years. The Drop-Off Centre would also improve customer safety negating the need for the majority of the customers to deposit waste at the tip-face.

The Drop-off Facility would increase diversion of recyclables from landfill, provide the opportunity for greater supervision of the waste, as well as providing a facility that could be used as a transfer station once the landfill has been filled to capacity. However, since HCC is at the point of having to decide the future of the landfill and the treatment of its waste it is considered advisable to wait until a decision has been made with regard to the future treatment of the waste to ensure that the construction of the Drop-off centre does not hinder, but enhances the AWT process. It is most likely that an AWT, if implemented would have its own requirements in relation to how waste materials would be deposited on site to enable the efficient use of the facility.

The proposed amenities/education building would provide a space for waste education to be conducted with schools and other visitor groups, and provide a formal place to conduct meetings and inductions with visitors. Further, a formal lunch room and amenities could be provided for the gatehouse staff, within close proximity to the gatehouse resulting in additional space within the gatehouse. Again, it is considered that given the need to assess the future of how the landfill site will operate, and the fact that it is estimated on current trends and identified costs, that the Waste Management Facility reserve will only have sufficient funds to cover future ongoing maintenance and monitoring costs of the site at the end of the current life of the facility, it would be premature to proceed with the construction of the drop-off centre or the amenities/education building. This position may alter with the possible introduction of an AWT as referred to in an separate report to this meeting.

The estimated cost of the drop off facility and amenities/education centre is $800,000.Given that funding for both centres is currently unavailable, it is recommended that the drop off facility and amenities/education centre not proceed until further investigation into an AWT facility can be undertaken and an informed decision can be made.

Funding

The funds of approximately $800,000 required for the construction of amenities/education centre and the drop-off facility, based upon income/expenditure predictions and rehabilitation requirements for both the former waste management facility at East Kurrajong and the current site at South Windsor over the next 12 years are currently not available.

RECOMMENDATION:

That the construction of the proposed amenities/education centre and drop off facility not proceed at this stage pending the determination of the possible suitability and/or implementation of an Alternate Waste Technology strategy at the Hawkesbury City Waste Management Facility.

ATTACHMENTS:

There are no supporting documents for this report.

oooO END OF REPORT Oooo

Item: 4 Waste and Sustainability Payment Program - Projects

REPORT:

Executive Summary

Council has received $237,617 as part of the 2009-2010 Waste and Sustainability Improvement Payment Program. In order to qualify for these funds Council was required to prepare a Waste Action Plan and actions and targets for a Sustainability Action Plan. The received funds must be expended on the actions contained in these Action Plans as agreed to by the Department of Environment, Climate Change and Water.

The actions and targets have been compiled from a list of currently unfunded actions contained in Council's existing Water and Energy Savings Action Plans as well as other actions identified as being required to ensure the sustainability of Council's waste operations.

Consultation

The issues raised in this report concern matters which do not require community consultation under Council's Community Engagement Policy.

Background

In August 2009 Council received advice regarding the Waste and Sustainability Improvement Payments (WaSIP) Program and Standards from the Department of Environment, Climate Change and Water. The WaSIP Program assists Councils in the regulated area to invest in improvements in environmental sustainability. The advice received related to the requirements to be met in order to receive the payments.

The advice required Council to commit to:

- Delivery of the 2006-07 to 2008-09 Waste Service Performance Improvement Standards, and,
- Work to the 2009-2010 Standards which involve;
    - Develop and adopt a Strategic Waste Action Plan that contains performance milestones that will contribute to Council reaching the 2014 waste target of reducing waste to landfill by 66%.
    - Develop a Sustainability Action Plan or Policy.

In return for this commitment Council's WaSIP payment for the 2009-10 financial year is $237,617.37. The funding and retention of the funding, depends on the preparation and implementation of the above Action Plans.

The 2006-07 to 2008-09 Waste Service Performance Improvement Standards involved Council preparing a "Waste Not" DCP and inclusion of development consent conditions that deal with waste disposal into relevant development consents. Council has already complied with these requirements.

The additional 2009-10 Standards require the preparation and implementation of a Waste Action Plan and a Sustainability Action Plan. The exact requirements, as specified by the Department, are shown on the attached "Notes" shown in attachment one to this report.

In relation to Note "1" in attachment one, waste services staff are working towards the preparation of a Waste Action Plan to be input into the DECC Strategic Waste Action Plan Tool as required.

In relation to Note "2" in attachment one, staff have compiled a list of unfunded actions from Council's Water and Energy Savings Action Plans as well as other unfunded actions that relate to the criteria to prepare the actions and targets for the Sustainability Action Plan. Council has recently received endorsement of these actions and targets for the Sustainability Action Plan from the Department and a copy of these actions and targets is contained in attachment two to this report.

Conformance to Community Strategic Plan

The proposal is consistent with the Caring for Our Environment Directions statement;

- Take active steps to encourage lifestyle choices that minimise our ecological footprint

and is also consistent with the nominated strategies in the Community Strategic Plan being:

- Develop and implement waste and recycling strategies,
- Implement actions in the Water and Energy Savings Action Plans.

The proposed actions that are nominated in this report are directly applicable to the Directions, Strategies, Goals and Measures contained in the Community Strategic Plan as adopted by Council in October 2009.

The proposed implementation timeframe for this matter, as specified in the CSP Milestones, is between 2009 and 2012.

Financial Implications

The actions contained in the attachments to this report are directly funded by the Waste and Sustainability Improvement Payment Program undertaken by the Department of Environment, Climate Change and Water. The payments, already received by Council, are to be expended only on the actions contained in attachment two to this report. Should Council not undertake or progress these actions within the agreed timeframe the Department will require a refund of the existing payments and this may also jeopardise any future WaSIP payments.

RECOMMENDATION:

That the report regarding the Waste and Sustainability Improvement Payment Program and the Sustainability Actions attached to this report be received and noted.

ATTACHMENTS:

AT - 1 "Notes" relating to the criteria for compliance with the Waste and Sustainability Improvement Payment Program.

AT - 2 Waste and Sustainability Improvement Payment Program Actions and Targets for Hawkesbury City Council.

AT - 1 "Notes" relating to the criteria for compliance with the Waste and Sustainability Improvement Payment Program

Contact person for Waste Standards

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Contact person for Sustainability Standards

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NOTES

1. Councils may already have a Waste Action Plan in place however councils must input the information into the DECC Strategic Waste Action Plan (SWAP) Tool to convert the plan to the required format. Councils should submit their completed SWAP electronically (CD) to DECC by 30 April 2010 along with a paper copy of the relevant section of the council meeting minutes where the waste actions were adopted for implementation.

2. Councils may already have a Sustainability Action Plan (SAP) or policy that meets the intent of the SAP Standard. These Councils will be able to include unfunded actions and programs from this Plan / Policy into their waste and sustainability action table. Councils that do not have an existing SAP, or are in the process of developing one, can allocate some of the WaSIP funds to the development process and some into other unfunded environmental sustainability actions within the LGA by including them in the waste and sustainability action table for approval by DECC. These actions can be drawn from existing council policies such as State of the Environment Reports, Biodiversity, Water and Energy Saving Action Plans etc.

3. The action table must provide details of the waste and environmental sustainability actions and targets that council is committing to implement and the allocation of the 2009/10 WaSIP funds. DECC will provide a template for this action table. The completed table is to be submitted to DECC for approval by 30 October 2009.

Return the completed Certificate to: DECC PO BOX 644, Parramatta, NSW 2124

AT - 2 Waste and Sustainability Improvement Payment Program Actions and Targets for Hawkesbury City Council.

2009-10 Waste and Sustainability Improvement Payment Program - Action Table Report

Council Name: Hawkesbury City Council

Project number	New or Enhanced	Main priority area the project addresses	Initiative title	Short description	Target / Outcome	Measure(s)	2009-2010 WaSIP $	Number of years further WaSIP payments will be allocated to this project
1	New	Climate Change	Adaptation Plan	Regional Risk Management & Adaptation Strategy- to prepare Hawkesbury City Council for the anticipated impacts of Climate Change. Recent research indicates that this impact is likely to compromise the liveability of urban environments, both the built environment and the natural environments that urban dwellers have access to and which sustain us all. Changes that are anticipated to occur include: Higher average temperatures, increased energy, reduced water catchment yield, increased competition for water, loss of peri urban agricultural production, reduced environmental flows in waterways, changes and intensity of flood events, and increased frequency of extreme weather conditions.	Improve and support human services and delivery of outcomes for the community on the possible impacts of climate change.	Demonstrated accomodation of climate change strategies in policies for risk management and asset management by 2011	$40,000	1
2	Enhanced	Waste	Alternative waste treatment feasability study	Look at different options available for the collection and treatment of municipal waste supported by an appropriate business plan	Appropriate recommendation supported by the Waste Advisory Committee	Resolution adopted by council	$65,000	1
3	New	Waste	Beneficial use of Methane Gas from Hawkesbury City Waste Management Facility	Investigation of the feasability to the beneficial reuse of Methane gas produced by the degradation of waste landfilled. Initial studies into possible actions suggest restrictions on possible reuse due to the small volumne of waste landfilled.	Reduction in green house gas volume and future liability.	Viable option adopted	$19,500	1
4	New	Waste	Waste classification	Further classification of waste received at the Hawkesbury City Waste Management Facility is required to improve further seperation of materials. Without adequate data it is difficult to establish the amount of resources that may be diverted from the received "Other Municipal Waste"/ C& I/C&D waste stream.	Based on this classification investigate further opportunities for recyling additional materials. Reduction of materials going to landfill through improved resource recovery	Waste to landfill classified prior to disposal.	$40,000	1
5	New	Energy	Oasis Aquatic Swimming Centre	Install solar water heating system on available roof space	Reduction in annual electricity and gas consumption	Electricity savings of 100,000kWh Gas savings of 500,000MJ	$49,917	2
6	New	Waste	Recycling at Community Events	Source separation of waste at community events	Develp and implement a policy to increase recycling and source separation of waste at community events on Council land and development approvals for events on private property.	1 Policy adopted 2 Develop action plan for implementation 3. Reduction of waste going to landfill and improve resource recovery	$5,000	1

I certify the above are new or enhanced waste and sustainability initiatives that were not previously planned to be funded from other sources.

General Manager Signature:

Chief Financial Officer Signature (if WaSIP>$500,000):

Date: 18/2/10

7	New	Waste	Pubic Place Recycling Trial	Source separation of waste in public places eg Windsor/Richmond. Run trial of 50 bins in public areas for 12 months. Price includes the purchase of bins and development of policy. Council to resource the installation, educational signage and ongoing pick up and maintenance cost for 12 months. Should trial be viable, program then expanded.	Develop and implement a policy to increase recycling and source separation of waste in public places.	1. Policy adopted 2. Develop action plan for implementation (12 month trial) 3. Reduction of waste going to landfill and improve resource recovery 4. Audit completed for contamination rates.	$14,200	1
8	New	Waste	Corporate Waste Reduction	Reduce, Reuse and recycling of waste generated by all council activities.	Develop a Council wide Policy and Action Plan for implementation.	Reduction in consumption of natural resources	$2,000	1
9	New	Waste	Hawkesbury City Council's Green Purchasing Guide	Environmental, or "green" purchasing guide will help improve environmental performance. The guide will ensure Council employees work with our communities and businesses to use our resources in a sustainable way and employ best practices and technologies that are in harmony with our natural environment and human health.	The guide will aim to reduce greenhouse gas emissions, water and energy consumption. Reduce the use of toxic chemicals, minimise the creation of waste that goes to landfill.	Guide Adopted and implemented	$2,000	1
						Total	$237,617	

I certify the above are new or enhanced waste and sustainability initiatives that were not previously planned to be funded from other sources.

General Manager Signature:

Chief Financial Officer Signature (if WaSIP>$500,000) :

Date:

oooO END OF REPORT Oooo

Item: 5 HCWMF Waste Disposal History

REPORT:

The Hawkesbury City Waste Management Facility landfill is located at the intersection of The Driftway and Blacktown Road, South Windsor. The site originally commenced as a waste depot by the then Windsor Municipal Council. The new landfill was established to replace the waste depot at Racecourse Road, South Windsor, which was nearing capacity.

Records indicate that preliminary investigations were made with regard to the replacement of the South Windsor waste depot in mid 1974 with approval being sought from the Regional Director of Health. At the same time acquisition of the land (now lot 194 DP823986) was sought from the then Hawkesbury Agricultural College.

The waste depot was originally approved on 2 October 1975 to be 2.73 Ha in size and located in the south western corner of Lot 179 DP752032 (now known as Lot 194 DP729625). This area incorporates the location of the current gatehouse, recycling area and some surrounding land. The first waste disposed of at this site was around early 1976. The depot was then approved for extension to 17.97Ha on 24 June 1979, and encompassed the remainder of the parcel of land.

The parcel known as Lot 192 DP 729625 (16.5Ha) was leased to Hawkesbury City Council by the University of Western Sydney, Hawkesbury in 1991 for a 15 year period to allow Council to continue its landfilling operations. Negotiations were undertaken with a view to extending the life of the lease. Subsequently, the existing lease was terminated on 31 December 1995 and a new lease entered into from1 January 1996 for a term of 21 years, which will end on 31 December 2016.

The current lease with the University includes an annual lease payment of $8,555.93 (2009 figure), and an additional payment based on the CPI and m^3 of waste received. This amount was $155,635.00 for 2009. The agreement also allows the University to dispose of waste at the facility free of charge. On average, the amount of waste that attracts fees disposed by the University is 651.41 tonnes equivalent to approximately $86,174 at current disposal prices, such waste also attracting the S.88 levy imposed by the EPA, which Council is liable to pay. The agreement also provides that 50% of the gross amount received from the sale of any material excavated from the leased area is to be paid to the University.

Landfilling of Lot 192 DP729625 commenced at the northern end of the parcel and proceeded in a southerly direction. It is believed from details obtained from records and from employee recollections, that shallow trenches, similar to the previously filled Lot 194, were used at the northern end of Lot 192. It is also believed that some of the waste was placed upon the natural ground level only and covered.

The northern section of Lot 192 and the whole of Lot 194 became known as Area 1 when Rust PPK was employed by Council to design new larger clay lined cells. These new cells would provide a greater capacity than the previous landfilling method used, as well as comply with best practice and the appropriate regulations. The area containing the newly designed landfill cells has since been referred to as Area 2 and consists of approximately 10Ha of the southern section of Lot 192.

There are very few records indicating the depth, or quantity of material that was deposited within the area known as Area 1, however the Minutes of Council's Special Meeting on 10 August 1995 Item 4. South Windsor Waste Depot – Variation to Operational Arrangements – Variation to 1995/96 Budget, states that *"until mid 1994 waste was placed at a maximum depth of 3 metres, as was standard practice at South Windsor, despite the fact that there is good clay to around 13 metres over the site".* Photographs taken by the Health Inspector of the Health Commission of New South Wales Western Metropolitan Health Region in February 1978 and February 1979, attached, show the state of the waste at the time of his inspections. The photographs support the previous statement showing shallow trenches with all types of waste, including metal items, filling them.

It is understood that some cells in Area 1 were occasionally excavated deeper than the estimated 3 metres.

The quantities and types of materials accepted at the landfill during the filling of Area 1 is unknown, however it is reasonable to assume that asbestos and other potentially harmful products may have been disposed of during this period.

The two landfill cells constructed immediately prior to Area 2 are recorded in the Council's Special Meeting minutes of 10 August 1995, Item 4, as having *"their depth increased to 6 metres and 9 metres respectively"*. They are approximately located adjacent to the northern boundary of Area 2. These two cells are the only two cells prior to Area 2 being filled that are recorded as being deeper than the estimated 3 metre average.

Cell 1 - Area 2 excavation was completed in 1995 and began being filled in the same year and since that time Cells 2 to 5 have been progressively constructed and filled with Cell 5 currently in the process of being filled. Cell 6 is the only cell remaining to be constructed as part of the 6 cells designed to be constructed within Area 2.

Cell 6 has a total estimated capacity of 163,000m³. This volume includes the void space located within the constructed area of Cell 6 as well as the void space created between Cell 6 and the adjoining cells.

The Waste Management Facility has an estimated remaining life of approximately 8.5 years based on the current rate of filling and including the planned sixth landfill cell yet to be constructed.

There are properties located within the Penrith City Council Local Government Area on the southern side of The Driftway adjacent to the Waste Management Facility. It was considered prudent that Council offer to acquire those properties within a 250 metre radius of the landfill site to comply with the recommended 250 metre buffer that was detailed in the newly released (at the time) guidelines for solid waste landfills written by the Environmental Protection Authority.

There were 8 lots, seven with dwellings and one vacant that were largely within the recommended 250 metre buffer zone. Council offered to acquire the 8 properties, with 7 of the property owners agreeing to sell their properties to Council. Those properties were acquired.

The following table details the tonnages of the various waste types received at the waste management facility over the past 5 calendar years.

	2005	**2006**	**2007**	**2008**	**2009**
Total through gate	34664	34210	36939	32332	30208
Domestic	18884	18260	19475	19937	19552
Other Domestic	11860	11862	11833	9642	8068
C&I	549	566	2817	1101	778
C&D	3610	3517	2544	1652	1337
Estimated landfill	25523	25124	28996	25961	24704
Greenwaste	3928	3178	2911	2840	2539
Concrete	2277	2761	2011	1075	891
Metal	1564	1434	1315	1080	1065
Wood	850	1068	1058	819	454
Paper/Cardboard	298	460	409	332	286
Mixed Recycling	71	41	50	48	55

The Waste Management Facility generates revenue predominantly through its gate fees, and includes Councils domestic garbage trucks, with a small amount of revenue also generated from the sale of recyclable or reusable materials such as scrap metal, timber, vehicle batteries, bricks, concrete, and mulch.

The income received by the Waste Management Facility is placed into an internally restricted reserve and is directly linked to the facility.

The Waste Management Facility reserve has recently been reviewed to ensure that adequate funds are being placed into it each year for future expenses. It was found that the funds, inclusive of any forecast sale price of residential properties located adjacent to the facility on The Driftway, will only just cover forecast future expenses. The reserve requires substantial funds to pay for ongoing payments such as operational costs, UWS lease payments, remediation works and EPA levy payments. It also requires sufficient funds for future payments such as capping and post closure works, ongoing environmental monitoring and maintenance.

A number of scenarios have been investigated and calculations made with regard to the effect of those scenarios on the reserve. The scenarios included:

1. Sale of The Driftway properties, purchase the leased area and purchase an alternate daily cover system.

2. Sale of The Driftway properties, extend the lease of the currently leased area and purchase an alternate daily cover system.

3. Sale of The Driftway properties and purchase the leased area.

4. Sale of The Driftway properties and extend the lease of the currently leased area.

Consideration of an alternate daily cover system is the subject of a separate report to this meeting.

The total funds remaining in the reserve at the end of landfilling operations using each scenario is detailed below. These estimates include all operating costs, including closure, remediation and post closure monitoring and maintenance costs.

Scenario	$ remaining post closure	Year ending
Sale of properties + Alternate Daily Cover system + Purchase of Lot 192	$1.7M	2021/22
Sale of properties + Alternate Daily Cover system + Lease of Lot 192	$2.6M	2021/22
Sale of properties + Purchase of Lot 192	$1.03M	2019/20
Sale of properties + Lease of Lot 192	$1.34M	2019/20

Whilst the table indicates that there will still be funds within the waste management facility reserve, post closure and remediation of the facility, it must be remembered that the figures supporting this plan have been estimated over a 10 year period (and 15 years in terms of post closure monitoring) and will be subject to fluctuations in external factors such as CPI. It is considered that the amounts shown as remaining within the table are a reasonable buffer to cover any unknown contingencies which may occur over the period.

Council is required under its EPA licence to pay the Section 88 levy to the Department of Environment and Climate Change and Water. The Section 88 levy requires that Councils pay the levy amount for every tonne of waste that enters the landfill. The current 2009/10 waste levy that Council is required to pay is $52.40/tonne and based on the 2009 statistics of 24,704 tonnes entering the landfill equates to $1,294,490. This will increase to $1,788,570 in 2011/2012 for the same amount of material entering the landfill.

The table below details the previous levy amounts through to the predicted levy amount for the next two years that Council is required to pay for every tonne of waste received.

Year	Levy Amount
02/03	$9.60
03/04	$11.40
04/05	$13.20
05/06	$15
06/07	$23.10
07/08	$31.60
08/09	$40.00
09/10	$52.40
10/11	$61.70
11/12	$72.40

The Department of Environment and Climate Change has set NSW waste reduction targets which are detailed within the Waste Avoidance and Resource Recovery Strategy 2007 document, available online at: http://www.environment.nsw.gov.au/resources/warr/07226_WARRreport07.pdf

"By 2014, NSW aims to increase the recovery and use of secondary materials in the three major waste streams as follows:
- *Municipal waste – from a baseline 26% to 66%*
- *Commercial and industrial (C&I) waste – from a baseline 28% to 63%*
- Construction and demolition (C&D) waste – from a baseline 65% to 76%"

(Page 8, Waste Avoidance and Resource Recovery Strategy 2007, Department of Environment and Climate Change, October 2007).

The targets are State targets (at this stage) and although it is not compulsory for individual Councils to achieve the targets that have been set, it is a goal that Councils are being encouraged to aspire to achieve. It is not difficult to imagine that the targets may become legislated in the future.

The Waste and Sustainability Improvement Payments are offered by the Department of Environment and Climate Change to Councils each year to provide additional funds for Councils to improve their waste systems and implement more sustainable practices. To be eligible, Councils are required to commit to meet certain criteria throughout the following year. One of the current criterion for 2009/10 requires that Councils "develop and adopt a Strategic Waste Action Plan that contains performance milestones that will contribute to Council reaching the 2014 municipal waste target".

The work to develop the Waste Action Plan has begun, using a software package supplied by the Department of Environment and Climate Change. The software arranges the Waste Action Plan into the format that the Department of Environment and Climate Change requires Council to comply with.

Whilst the amount of waste being disposed of at the facility is being reduced due to recycling initiatives, the reduction is comparatively small compared to that identified within the waste avoidance and resource recovery strategy. It is considered that the only way that the target could possibly be met would be to implement an Alternate Waste Treatment System (AWTS) on the site.

An AWTS in general terms, separates recyclables from the incoming waste and then treats the remaining organic portion resulting in a reduction of around 65% of the incoming waste being diverted from the landfill. This not only extends the life of the landfill by approximately a factor of 3, but also reduces the payment of the levy by 2/3

To proceed toward the implementation of an AWTS, it would obviously be necessary to investigate the feasibility of these systems and the long term financial and environmental implications of such action. It is proposed to engage the assistance of an appropriate consultant to assist with this process.
As outlined previously, the land which is currently being utilised for landfill purposes is being leased from the University of Western Sydney and this lease will expire on 31 December 2016. As the estimated life of the facility is approximately 8.5 years, there will still be capacity within the site after the expiration of the lease.

Preliminary discussions were held with UWS representatives during 2007 in relation to extending the lease over Lot 192 DP 729625 and following those discussions correspondence was received advising:

1. *Council's current lease is for a 21year term and is due to expire on 31.12.2016.*

2. *Councils request to extend the current lease beyond the current expiry date by 5 years with a 5 year option to potentially 2026 is noted, however, pursuant to Section 26 of the University of Western Sydney Act 1997, the University only has power to grant a lease over the site for a term up to 21 years. The University has external advice in relation to another matter which indicates that attempts to circumvent the operation of the 21 year limitation by consecutive leases, or by a new 21 year term, would not be permitted under this section.*

3. *The University may be in a position to enter into bona fide negotiations in relation to the terms of the lease around 2011.*

As indicated previously, it would appear that there will be capacity remaining within the landfill on the leased land at the expiry of the current lease, and that investigations are proposed relating to an AWT which would further extend the life of the facility. It is felt that discussions should be commenced with the University with a view to negotiating a further lease over the site or perhaps alternatively purchasing the site.

Due to the ongoing monitoring of the site required by DECCW for an unknown period following completion of the filling of the remaining cells, at which time there would be no income being derived from land-filling operations, purchase of the site may be the preferred option.

Funding

It would be appropriate to fund the necessary investigation from the Waste Management Facility Reserve.

RECOMMENDATION:

1. Further investigation as to the viability of an Alternate Waste Treatment System being provided at the Waste Management Facility and the long term implications of such action be undertaken, with funding required for consultants to achieve this objective to be provided from the Waste Management Facility Reserve.

2. Discussions be initiated with the University of Western Sydney with a view to either negotiating a further lease over, or purchasing Lot 192 DP 729625

ATTACHMENTS:

AT - 1 Description and site location of original landfill.

AT - 2 Photographs taken by Health Inspector February 1978.

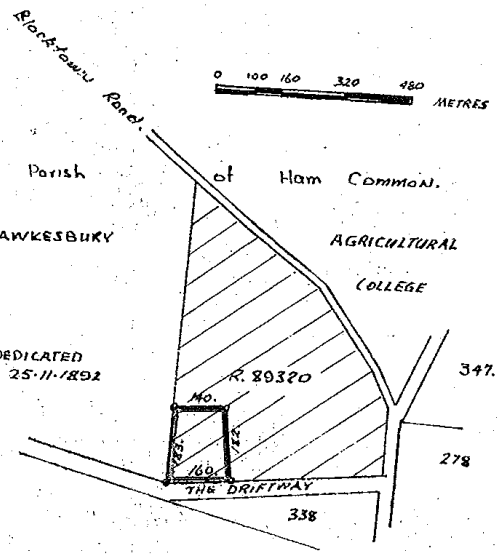
AT - 3 Photographs taken by Health Inspector February 1979.

AT - 1 Description and site location of original landfill

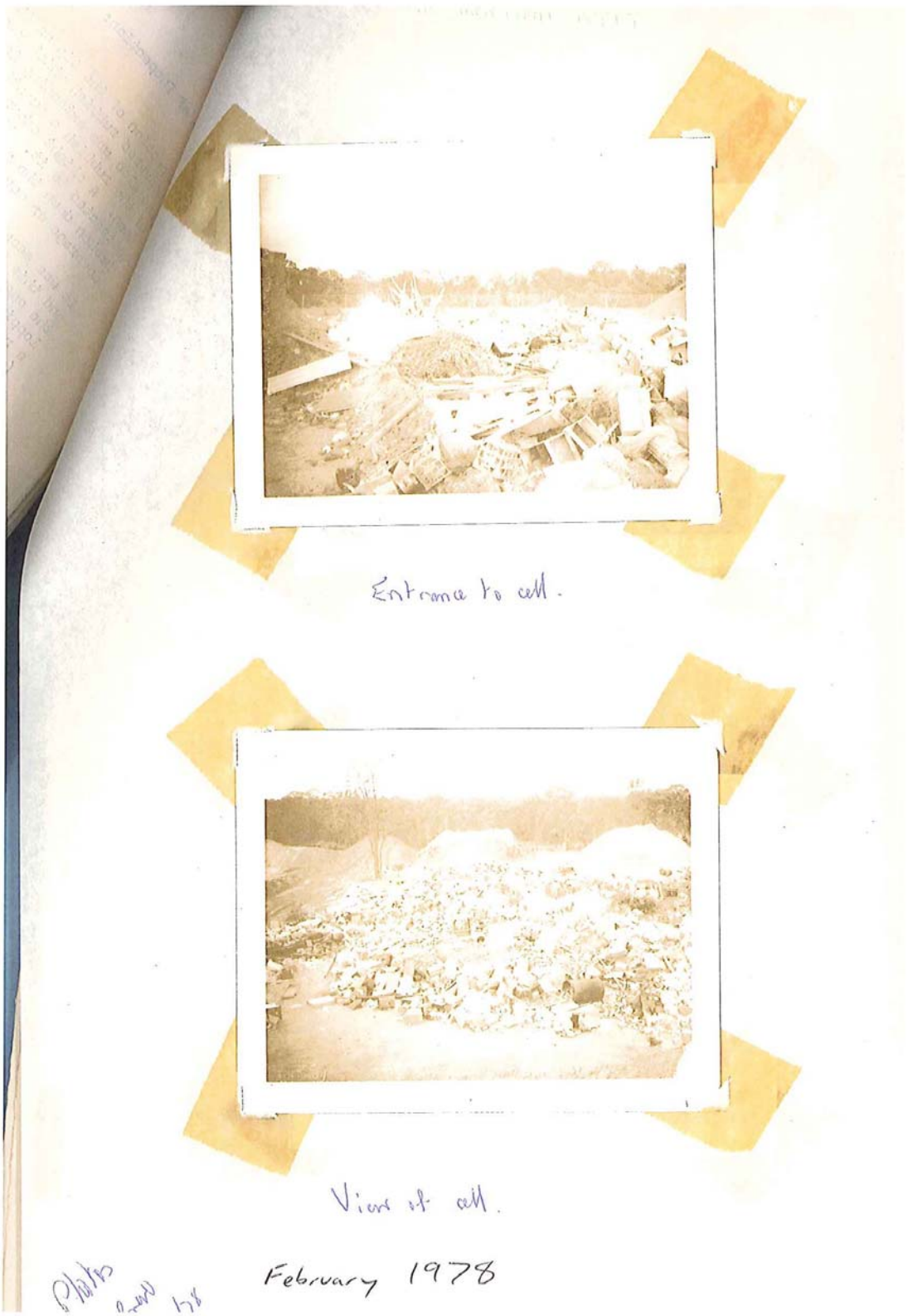
WINDSOR MUNICIPAL COUNCIL

Description of area for Sanitary Depot for Garbage Disposal, having frontage to The Driftway, Windsor

That portion of land having an area of 2.73 hectares in the south western corner of Reserve for rubbish disposal R 89320 at Richmond, Parish of Ham Common, County of Cumberland, having frontage to The Driftway as notified in the Government Gazette No. 137 of 15th November, 1974 and shown in red edging on the attached plan, and described as the land enclosed by a line commencing at a point in the south western corner of Reserve No. R 89320 and proceeding along the western boundary of the Reserve No. R 89320 in a northerly direction, a distance of 183 metres thence in an easterly direction a distance of 140 metres thence in a southerly direction a distance of 182 metres to the southern boundary of the reserve and the northern boundary of The Driftway and thence in a westerly direction along the southern boundary to the point of commencement, a distance of 160 metres.

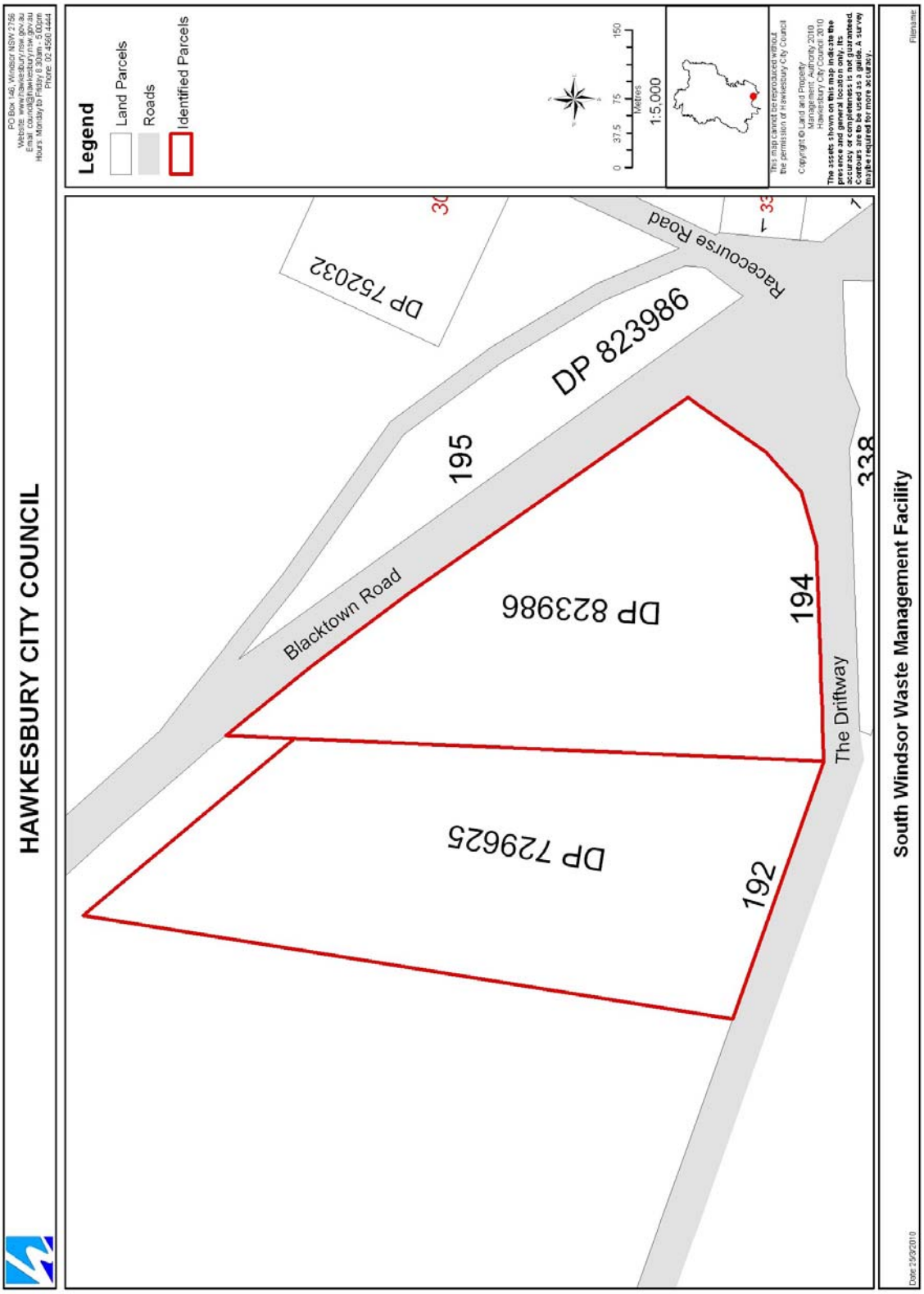


AT - 2 Photographs taken by Health Inspector February 1978

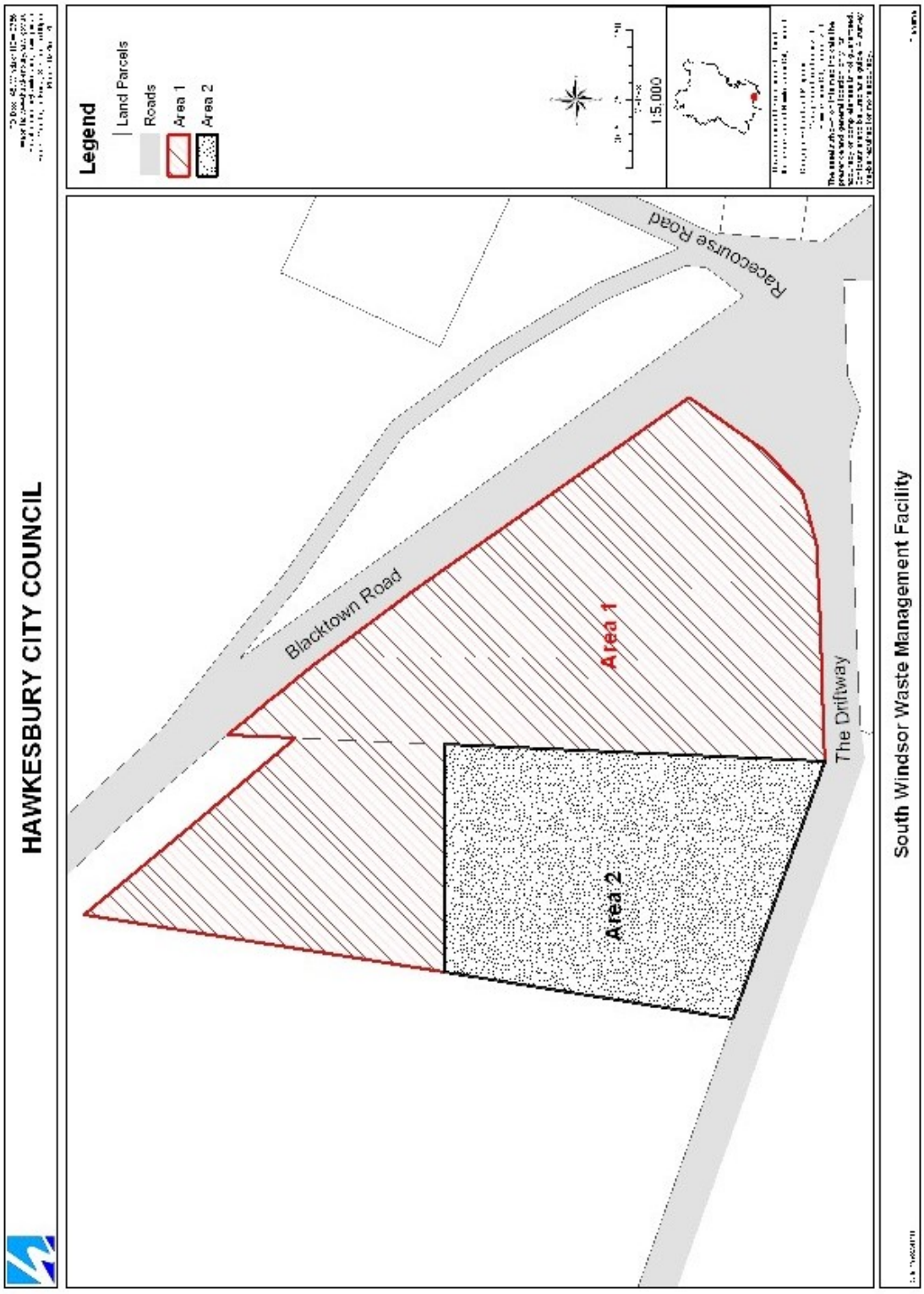


AT - 3 Photographs taken by Health Inspector February 1979

AT - 4 Plan showing Lot 192 DP729625 and Lot 194 DP823986



AT - 5 Plan showing proposed extension to include Lot 192



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waste management advisory committee

section 5

general business

SECTION 5 - General Business

waste management advisory committee

end of business paper

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