A.6 Waste Management Strategy

As part of the 2012 Campus Master Plan goals regarding environmentally sustainable development, the University of the Sunshine Coast seeks to minimise the generation of waste on campus. While acknowledging that the University is an institution for teaching and research, and in some areas of education waste is inevitable, the waste management strategies detailed in this Appendix are intended to ensure that wherever wastage occurs on-campus, it is stored, treated, recycled or disposed of responsibly.

The Waste Management Strategy (WMS) provides a framework for the development of waste management practices. In order to do this effectively, the WMS seeks to promote a decision making framework that minimises the amount of waste generated from all sources, manages waste in a way that is consistent with ecologically sustainable development principles, reduces the impact of waste on both the environment and as it affects human health, promotes efficiency in the use of resources, including wherever possible the maximum use of waste products as a resource, and achieves continuous improvement in standards of waste management activities.

The University is committed to the development of an integrated on-campus waste management program, based on the application of 'avoid, reduce, re-use, recycle, and dispose' principles.

The development of waste management activities will depend on their cost impact relative to the benefits accrued. These benefits may be economic, but also may be social, communal or environmental.

Current waste management practices include paper and cardboard recycling, purchasing of Australian made plantation and post consumer waste printing paper for use in Reprographics and University (but not Library) printers and photocopiers, the use of contractors for removal of confidential material, including for the disposal of biohazard wastes from science buildings, air conditioning system maintenance, and the removal of waste for landfill. Additionally, the University currently reuses green waste from grounds' maintenance as mulch, recycles components from computers, sells or gives away computers and books no longer required by the University, removes waste oil from machinery to shire council recycling facilities and grease and paint traps situated at suitable locations intercept these products and hold them until they can be removed by external contractors.

Key Waste Management Strategies

Involve the entire university community through increasing awareness, meeting specific information needs, and fostering a sense of community commitment.

This strategy should involve the University developing waste information services and practices appropriate to the participant groups within the University community in order to increase awareness of waste management issues, recognising individuals and groups who support campus waste management and the particular waste management needs of different participant groups. This should involve communication links between participant groups in order to foster a cooperative and effective approach to waste management activities. It is essential that all those involved in specific waste activities (such as purchasing, collection, storage, and disposal) know what others are doing. This will avoid both gaps and overlaps.

Develop waste management practices appropriate to the diverse activities that occur on the campus.

This strategy should be undertaken in consultation with participant groups and include communication links so that people can inform each other when their waste generating activities change, as these will impact on the management of waste. The formation of a Waste Management Working Group could assist in enabling the coordination of the development of specific area Waste Management Plans.

Management should encourage the adoption of waste management strategies by setting examples, such as printing double-sided or supporting purchasing policies that favour waste responsible products. They should support particular groups within the University in their initiatives to avoid and reduce waste, where to do so incurs a greater up-front cost to that group. The University as a whole pays for waste services and the economic, social and environmental benefits resulting from costs borne by particular groups should be recognised.

Administration should utilise recycled paper (or similar such as 80:20 paper) for brochures and advertising material. Inclusion of the recycled paper logo or information on paper used in all University publications is a way of advertising the University's waste management commitment. Administration should further continue a high-security approach to the disposal of confidential material, while the destruction of archive material, once withholding periods have been met, should allow for the recovery of resources (for example, pulping and recycling of paper). Storage guidelines should be such that end-of-life recycling is possible without significant extra handling.

Research should provide information about the University's purchasing policy (when available), highlight the opportunity to identify waste responsible products, include in proposed program assessment guidelines a review of the social and environmental impacts of each program, allow postgraduate theses to be printed double-sided, develop electronic submissions for internal research grants and work with funding bodies to develop similar procedures for external research funds.

Teaching groups should utilise teaching techniques that reduce resources. Good examples are the use of micro-scale techniques for teaching chemistry, virtual dissection laboratories, and on-line tutorials. They should provide students with a waste management briefing at orientation. Specialised briefings should be given once students are working in specific areas where waste can be an issue, for example, in laboratories and art studios. Teaching staff should further develop waste management guidelines for field trips, especially when chemicals are being transported or used. Teachers can also encourage student projects that investigate waste management issues or initiatives such as analysis of the general waste stream, the viability of recycling businesses in the region, analysis of life-cycle costing, microbial techniques for waste breakdown, or the restoration and monitoring of swales as a stormwater management strategy.

Science faculties should ensure appropriate measures are taken for the storage of radioactive and chemical wastes, either on-site or in conjunction with other regional generators such as hospitals. A waste management plan is required under the *Environmental Protection (Waste Management) Regulation 2000*. Further measures should include development of guidelines for waste management during field trips, especially those where chemicals are being transported and used and the evaluation of research and teaching programs in order to determine if and how the use of materials generating problematic waste might be reduced. Additionally, future work with animals should incorporate a purpose built work area that enables the animals to be housed, utilised, and disposed of appropriately. Waste from this area should be channelled into categories and as far as possible should be contained within the site area (with the exception of radioactive and chemical wastes, as discussed above). The impact of additional volume in each category on current waste management procedures should be considered at the design stage.

Arts and Social Sciences faculties should ensure appropriate measures are taken regarding waste generation, in accordance with the general University waste management principles outlined above.

Library and Information Technology faculties should examine options for recycling monitors, the re-use, on-selling or giving away of useable computers or computer parts should continue to be supported. Computers being disposed of should be written on, placed in an industrial bin in a secure area and campus security notified. Guidelines for the provision of the provision of student copying should be required. These should include reference to the type of paper purchased (80:20 Australian made paper or better), the re-use, refurbishment or recycling of photocopiers, and the capacity for reduced and double-sided printing. Companies that are practicing extended producer responsibility should

be favoured as suppliers. A storage area for used and new gas cylinders is required, enabling truck access, limitations on personnel access, measures to address fire and explosion hazards, and ease of transport from storage site to areas of use.

Catering and food services should review purchasing and food services regulations (such as "Safeserve") for opportunities to avoid or minimise waste. Options such as products that fulfil the Safeserve requirements, but have less impact on the waste stream should be considered even if they incur cost, for example, the use of cloths that are sterilised in an autoclave. The use contractors to remove organic waste from kitchens should also be considered. Several vermiculture operations have indicated that such a contract would be possible.

Venue hiring policy should incorporate waste management criteria into venue hire contracts, including sports venues. These might include such things as the total removal of all waste from the site, provision of cups and saucers for extra cost, provision of a recycling bin for plastic, glass, and aluminium cans (provided at cost of removal), and provision of a paper recycling bin.

Landscaping and grounds should continue the use of native species for landscaping, and the conversion of open areas to bushland to minimise maintenance; situate industrial bins inside locked areas to discourage illegal dumping of waste in university bins; develop a wash-down area with a grease pit and catchment pit for cleaning vehicles and equipment and actively re-vegetate swales as per the 2012 Campus Master Plan to assist with the capture and removal of organic material from stormwater.

Facilities Management should incorporate waste management principles into building design specifications. Strategies for passive heating and cooling, environmental airflow and natural lighting already used in existing buildings on campus can be expanded to include solar or fuel cell energy generation, fittings that reduce out-gassing, life-cycle costing and gray-water recycling. Further, facilities management should form a waste management group and pursue regional alliances with other waste generators, particularly those who produce problematic waste (bio-hazardous, chemical, radioactive), in order to develop cooperative strategies.

Develop purchasing and tendering policies that reflect the university's commitment to waste management principles.

The university's commitment to waste management strategies should be used as a lobbying point when pursuing funding for capital works. Design tender specifications should be written in such a way that tender submissions address waste management issues. Further, by supporting a policy of reducing the “front end” of the waste stream, the University can control the entry of wasteful products into the campus and incur less cost through reducing the need for containment, management, and disposal.

Foster regional alliances that will facilitate collective purchasing and demand for products with extended producer responsibility and responsible packaging, and that will consolidate the region's waste management efforts.

The University should develop alliances with regional bodies to maximise purchasing power, including the ability to encourage waste avoidance through specifications of low waste generating products. Work with regional organisations can help to minimise duplication of resources and facilities. For example, local hospitals and science faculties on campus could share in a joint biohazard waste management program.

The avoidance and reduction of waste has priority over recycling and re-use.

The University should review waste going to disposal and examine whether there are alternatives that would either avoid the product entering the waste stream or reduce it. New developments, including building, landscaping, research

programs, teaching initiatives, and administrative procedures should be assessed in terms of their waste generation potential.

Ensure that waste storage, handling, collection, treatment (where required), and disposal methods are safe and effective.

Waste management strategies must comply with the *Environmental Protection (Waste Management) Regulation 2000* and the *Environmental Protection (Waste Management) Policy 2000*. Responsibility should be assigned to groups or individuals for the regular review of the available technologies for waste storage and disposal. Operational staff need to have the required training to comply with relevant guidelines or legislation, and the support of the institution if and when they report negative events or failures of the waste management system.

The segregation, containment, storage, collection, and disposal mechanisms for each category of waste should be documented and this information be made available to the whole campus community via the University web-site. Particular emphasis should be paid to harmful waste categories. Guidelines should be developed for waste management initiatives, in consultation with relevant cost centre managers and operational staff. These guidelines should document levels of financial commitment, as well as the commitment of personnel, necessary training, and infrastructure requirements. Accident response strategies should be developed for harmful categories of wastes and training provided for those who will be responsible for carrying them out. Radiation safety officers should be trained, registered and appointed.

The development of specific waste management plans should fully cost fiscal, social, and environmental impacts, foster initiatives to take into account currently externalised costs, develop corporate responsibility, and support a commitment to fund a meaningful overall program for waste management.

Qualitative benefits, such as community perceptions of the University, should be acknowledged. The impact of Waste Management Plans on different areas of the University should be recognised, including impacts on the University budget distribution, different participant groups on campus, the broader community, regional alliances, the campus environment, Mooloola River National Park and the University's ecological footprint.

Integrate, wherever possible, teaching exercises and look for opportunities to involve the students in waste management initiatives.

Support local small business and contractors when designing waste management initiatives.

Support for local businesses and contractors may involve choosing locally based suppliers and contractors wherever possible, and developing communication links with local suppliers to discuss the University's commitment to waste-responsible products and services.

Become a regional leader in supporting those industries and businesses seeking to develop environmentally sustainable business practices.

The University should develop regional alliances with industries and businesses pursuing waste management initiatives as part of their development strategies, and support regional waste management initiatives. The University's waste management initiatives could be further advertised, though this should not be over-stated, and should include discussion of the waste management limitations faced by the campus.

Waste Management Plan

The University's waste management planning should include both an overall Waste Management Plan (WMP) and Waste Management Plans for each activity area, or waste generator. The overall WMP should include a method for coordinating the waste management practices of the various activity areas and groups on campus. A Waste Management Working Group could fulfil this requirement. Their terms of reference should include ensuring overall adoption of the principles of waste management planning. These are (in the preferred order of adoption):[1] waste avoidance; waste re-use; waste recycling; energy recovery from waste and waste disposal. The Waste Management Working Group should consult with cost centre managers and the campus community to identify waste generator areas, and the people responsible for developing the WMP for that area or group. They should further coordinate the development of area WMPs; conduct regular reviews of waste management activities; coordinate activities that involve more than one area or group; ensure legislative compliance and ensure communication links between operational staff.

Each waste generator (as an activity area or group) should develop its own WMP to take into account their particular waste stream. Consistency in the development of waste management plans can be maintained by addressing issues such as developing a purchasing policy that incorporates measures to minimise waste generated through the use of product substitution, product changes, procedural changes, and the replacement of disposable items with reusable items; developing procedures for segregating, recycling, reusing and storing waste; developing measures for treating and disposing of waste and for staff training programs about effective waste management. They should develop risk management strategies that document contingency plans and emergency procedures in relation to waste generated, including, for example in relation to the spillage of waste; goals to reduce waste generated to be achieved within stated timeframes; measures that could be taken to investigate and initiate ways of achieving the goals; strategies for promoting the Waste Management Plan; mechanisms for staff to provide feedback about the plan as well as for its regular update and measures to collect and review, on an annual basis, statistics about the waste generated, such as the type, weight, and volume of waste; the ways in which, and the frequency with which, the waste is removed; and what are the strategies for waste management during renovation or changes in building function.

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[1] From the *Environmental Protection (Waste Management) Policy 2000*, Division 2, Section 10.