**Waste 2017 Abstract Submission**

**The Future of Waste Collection Is On – Or Should I Say Under – Your Doorstep**

*My presentation is relevant to the following topic area(s).*

🞎 Circular economy 🗹 Overseas experiences

🗹 Collection (inc MUD’s, transient population areas) 🞎 Problem/Hazardous waste (inc asbestos, clinical &

🞎 Container Deposit Schemes medical, ocean plastics, paint, tyres etc)

🗹 Economics (inc business cases, data gathering, 🞎 Product Stewardship

monitoring performance) 🞎 Regional issues

🞎 Education (inc community engagement) 🞎 Recycling (inc CRC’s, collection)

🞎 E-Waste 🞎 Regulations and levies

🞎 Grants (outcomes and processes) 🞎 Social enterprise

🞎 Infrastructure (inc major waste grants, EfW, organics) 🞎 State based issues (eg. Fit for the Future NSW)

🗹 Innovative projects (case studies preferred) 🗹 Technology

🞎 Landfill (inc operations, regulations) 🞎 Tenders and contracts

🞎 Litter and/or illegal dumping (inc litter initiatives) 🞎 Other 🞎 Organics (inc collection, processing)

**Co-Presenter information**

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| **Co-Presenter name:** Chani Lokuge**Presenter position:** Associate Director – Waste Management**Presenter organisation:** AECOM Australia**Presenter email address:** chani.lokuge@aecom.com**Presenter phone number:** (02) 8934.0521 **Presenter mobile number:** 0418 462 600 | **Co-Presenter name:** Joshua Romeo**Presenter position:** Innovation Officer**Presenter organisation:** Penrith City Council**Presenter email address:** joshua.romeo@penrith.city**Presenter phone number:** (02) 4732 7634**Presenter mobile number:** 0466 327 027 |

**Biography 150 words**

**Joshua Romeo Co-Presenter**

Joshua is a recent graduate from the University of Sydney. He completed a Bachelor of Science with dual majors in Human and Physical Environmental Geography in 2014.

Following interests in sustainability in the built environment he accepted the newly created position of Innovation Officer at Penrith Council. In this role he pursued the adoption/implementation of informed contemporary waste planning policy consistent with Penrith’s development vision. Joshua supports the DA review process ensuring correct weight is given to resource recovery within new developments. To reinforce waste policy Joshua pursued further studies at UTS on the Building Code of Australia.

Joshua works closely with Councils Strategic, Planning and Development Teams, reviewing and drafting Council’s DCP and Guideline Documents whilst providing informed submissions to EPA, WSROC, and NSW Planning reviews and document preparation. Throughout these commitments Joshua has undertaken a Masters of Urban and Regional Planning and will graduate in 2017.

**Chani Lokuge Co-Presenter**

Chani is an Associate Director - Waste Management with AECOM in Sydney and over the past 22 years has been working in the waste management sector both within local government and as a consultant. With qualifications in both engineering and business management, Chani is passionate about developing innovative ways to manage waste within Australia in particular drawing upon technical expertise and lessons learnt from overseas

**Abstract Summary**

The sight and roar of a garbage truck lumbering up your street is destined to become a relic of the past, as an innovative solution offers an alternative to traditional collection methods.

Multi-Unit Dwellings (MUDs) are fast absorbing innovative strategies for utilities including water, electricity and gas, yet waste continues to be ignored. Collection of residual waste/recyclables from MUDs has remained unchanged despite the problems traditional collection poses.

The presentation outlines key findings from Penrith Council’s work with AECOM. The study examines alternative collection methods including Automated Waste Collection Systems (AWCS), design to address the shift towards higher density living.

**Abstract**

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| Kerbside collection for general waste and recyclables from large Multi-Unit Dwellings (MUDs) have not changed in Australia for several decades. Potential problems associated with the traditional kerbside collection includes: * Increased heavy vehicle movement on local suburban roads;
* Basement height restrictions to account for truck access when servicing communal bin areas;
* Unsafe operation of vehicles in narrow streets navigating parked cars and traffic
* Insufficient waste storage within MUDs resulting in increased spillages, vermin and odours.

So what is the solution? If water and wastewater can be handled and transported through a network of underground pipes, then why can’t waste?Penrith City Council is a proven industry leader in sustainable waste management and diversion of waste from landfill. This is most notably demonstrated through the garden and food waste organics program launched in 2009, with a diversion rate of 40% from landfill.Given the projected growth in MUDs throughout Penrith, Council recognises the importance of waste planning and the need to reduce truck movements throughout higher density developments. As a result Council engaged AECOM to identify the costs and benefits associated with alternative collection options for MUDs. The collection options were reviewed for their potential to achieve better financial, environmental and social outcomes for the community compared to the traditional Business As Usual (BAU) methods. The installation of an Automated Waste Collection System (AWCS) can lead to significant reductions in the on-road transportation of waste, improved hygiene and increased amenity. The findings revealed Green Field sites were the preferred site to install an AWCS, however these systems can be retrofitted into existing brown field developments if required. AWCS are typically underground pipe networks used for the transportation of municipal and commercial solid waste, from the source of generation to a central collection station utalising vacuum pressure. There are currently no residential AWCS operating in Australia; however that may soon change with the recent announcement by Sunshine Coast Council. They have recently awarded a contract to Envac for the construction of an underground vacuum system for the new Maroochydore CBD. There are currently stationary and mobile AWCS installed internationally for residential buildings and large mixed use precincts. International examples of systems to be explored include Yas Island, Abu Dhabi and Wembley City, London.While there are a number of potential advantages and key risks associated with an AWCS include:* Higher upfront capital costs associated with set-up of the AWCS; however this can be potentially offset due to savings in basement construction costs and lower operational costs.
* Difficulties collecting glass due to erosion and broken glass fragments.
* Collection of bulky household waste must still be undertaken using a traditional garbage trucks.
* Cost and disruptions due to the blockage of pipes through incorrect usage.
* Difficulties around ownership and operations of the pipe infrastructure within the property boundary.

This presentation will outline the results of a cost – benefit analysis undertaken with AECOM. The report compares traditional waste collection methods versus the installation and operation of an AWCS for a proposed 2,000 unit MUD development in Penrith. The presentation will cover potential impacts on unit construction prices and strata fees. Key findings from the study include:* Where basement access is required under the business as usual (BAU) scenario, the implementation of the AWCS could result in a construction cost saving of around $30,000 per unit or $55 million in total.
* Where basement access for trucks is not required, implementation of the AWCS could result in a higher construction cost for the development of around $850 per unit
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