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Construction & Operational Waste Management Plan

PROPOSED Wee Waa High School

105-107 Mitchell Street

WEE WAA, NSW 2388

FOR:

The NSW Department of Planning Industry and Environment

October 2021

MANAGE-DESIGN-ENGINEER PTY LTD

Project Management, Construction Management, Civil Design & Surveying Services

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Manage-Design-Engineer DOCUMENT CONTROL

PROJECT: 105-107 Mitchell Street Wee Waa

CLIENT: NSW Department of Education

AUTHOR: Jimmy Costaganna

REVISION HISTORY

REVISION	DATE	CHECKED BY	
		NAME	SIGNATURE
2	23/12/2021	Troy Ryden	

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DATE	REVISION	TO	FORMAT
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1 INTRODUCTION

1.1 BACKGROUND

Manage-Design-Engineer Pty Ltd have been engaged to undertake a Construction & Operational Waste Management Plan (COWMP) for a proposed school development at 105-107 Mitchell Street Wee Waa. The site consists of the following Lots:

Lot 125 DP:757125
Lot 124 DP:757125
Lot 2 DP:550633
Lot 1 DP:577294

The total area of the site is 60,300m^2 with the proposed development involving the construction of a school, sports fields, and livestock paddocks.

1.2 PROJECT DETAILS

APPLICANT DETAILS	
Name	Manage-Design-Engineer
Address	1/64 Ballina Street, LENNOX HEAD NSW
Phone number(s)	0413018831
Email	For general queries please email jimmy@md-engineer.com.au
PROJECT DETAILS	
SSD No.	21854025
Client Details	The NSW Department of Planning, Industry and Environment
Contractor Details	TBA

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Address of development	105-107 Mitchell Street Wee Waa
Existing buildings and other structures currently on the site	Nil
Description of proposed development	Construction of a school buildings , sports fields, car parking & bus bays, upgrades to street kerb and gutter, and livestock paddocks.
Through implementing this COWMP, the development will achieve the waste objectives and intentions for minimising waste relating to this project. All records shall be kept onsite by the nominated construction contractor, demonstrating lawful disposal of waste. Documents will be required to be readily accessible for inspection by regulatory authorities such as council, DECC or WorkCover NSW.	
Contractor/Supervisor	
Signature	
COWMP document control and revision updates	Jimmy Costaganna
Signature	
Date	02/08/2021

1.3 SEARS CHECKLIST

Below is the requirements set out by the Planning Secretary's Environment Assessment Requirements.

Waste Management Plan (Operation and Construction)	• Identify, quantify, and classify the likely waste streams to be generated during construction and operation. • Provide the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. • Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site. • Provide a hazardous materials survey of existing aboveground buildings that are proposed to be demolished or altered.

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2 SITE CHARACTERISTICS

2.1 SITE LOCATION

105-107 Mitchell Street Wee Waa, has a total site area of 60,300m^2 and is bounded by residential lots to the north, Mitchell Street (Kamilaroi Hwy) to the south, Charles Street to the East and George Street to the West.

FIGURE 1 - SITE LOCALITY AERIAL IMAGE (SIXMAPS, 2021)

2.2 NARRABRI COMMUNITY RECYCLING CENTRE LOCATION

FIGURE 2 - TRAVEL TIME TO RECYCLING CENTRE – 73 DUMP ROAD NARRABRI

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3 Excavation and Filling

3.1 Site Excavation and Filling

The entire site generally will be stripped and cut or filling operations will occur. There is a small area in the eastern side of the site that existing site features will be retained.

The intention is to use the 200mm stripped sandy silty material as fill for the proposed swale batters and other landscaped areas.

3.2 Stock Piling Locations

Stockpile locations have been indicated on the Erosion & Sediment Drawings. Consideration into alternate stockpile locations are possible provided sufficient erosion and sediment control devices are implemented, and the stock pile is not in an area that can lead to dirty water runoff into the existing or proposed stormwater channels and swale.

4 Construction

4.1 Types of Waste Disposal Bins

Narrabri waste disposal businesses generally supply up to 10-15m3 steel bins. Collection is undertaken by 7.5m long 30t GVM trucks. Bin sizes are 2.5m x 6.0m

4.2 Separation of Waste

Steel waste is accepted for free at the Narrabri Community Recycling Centre, and thus a separate bin is recommended in order to prevent unnecessary disposal of steel material into land fill. It is noted that other building materials are not separated and recycled, and are pushed into the nearby land fill site. Untreated timber, with no nails or screws is accepted as a separate item, although due to the type of construction, untreated timber is highly unlikely to be used onsite. The bulk of the buildings are built off site, general construction waste should therefore be significantly reduced.

4.3 Signage Required for Skip Bins

To ensure adequate separation of building materials, use large signage to clearly indicate bins for steel waste and general building waste. If steel bins are contaminated with general

waste the load will be charged at the general waste rate. It is recommended that at pre-starts, construction crews are reminded of the correct waste disposal process.

4.4 ACCESS FOR WASTE COLLECTION

Construction vehicle access is to remain at the final design entry location. No temporary access is permitted off Mitchell Street / Kamilaroi Highway.
Depending on staging of works, a temporary access pavement design may be required in order to prevent mud tracking back out onto George Street.
Provide a sufficient turning circle arrangement for the intended location of skip bins, allowing for a 10m turning radius/ for a 8m long truck.

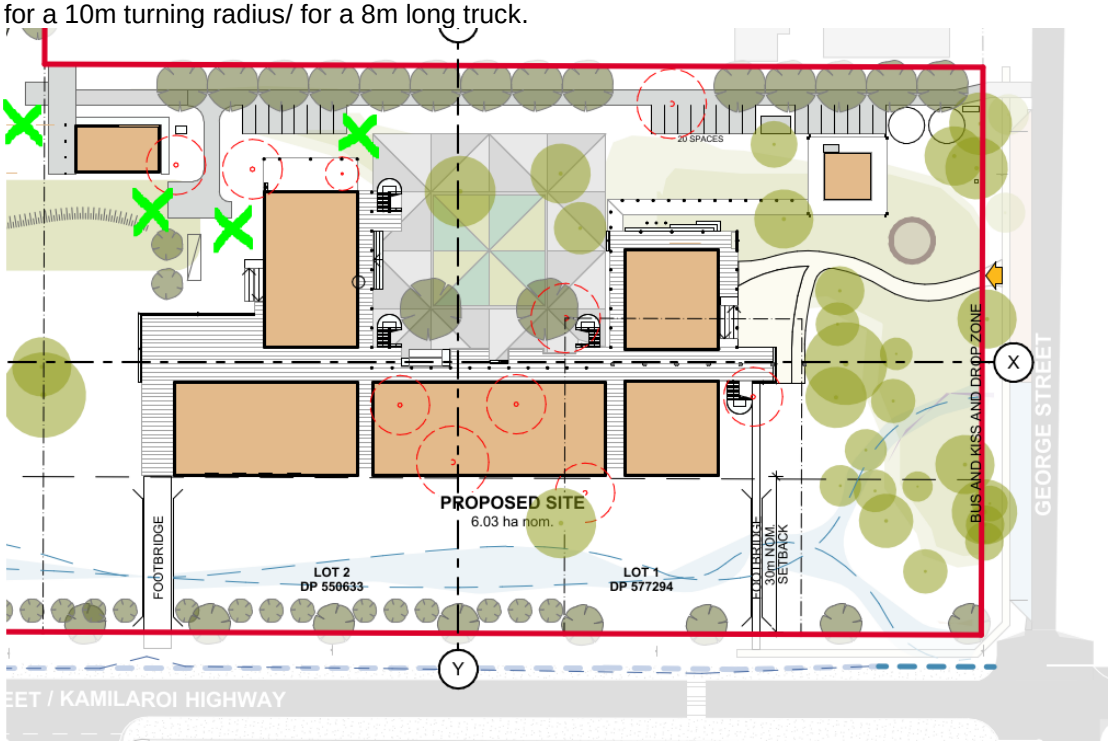

FIGURE 3 - SKIP BIN PICK UP LOCATION

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4.5 WASTE GENERATED

MOST FAVOURABLE ← **LEAST FAVOURABLE**

	REUSE	RECYCLING	DISPOSAL	
Type of waste generated	**Estimate Volume (m3) , (%), Weight (t)**	**Estimate Volume (m3) , (%), Weight (t)**	**Estimate Volume (m3) , (%), Weight (t)**	**Specify method of on site reuse, contractor and recycling outlet and /or waste depot to be used**
Site Stripping (Topsoil)	7154m3	-	-	All Cut to be used as Fill onsite
Cut to Fill for buildings	TBA	-	-	All Cut to be used as Fill onsite
Cut to Fill for stormwater channels	TBA	-	-	All Cut to be used as Fill onsite
Timber (treated pine)	Landscaping Offcuts reused where possible	-	3%	Treated pine is not accepted at the recycling centre. As such will be added to land fill. Re-use where possible
Timber (untreated)	-	1%	-	Untreated timber will be accepted at the recycling centre. Where possible segregate in separate bin
Concrete	3%	-	-	All concrete overpours to be broken up and used in deep fill
Modular panels	>1%	-	-	Anticipated no waste. All panels made to order
Fibro/plaster board	-	-	1%	General waste skip bin
Exposed Rock for earthworks	Approx. 2t	-	-	Reuse in landscaping
Scrap metal	-	Approx. 3t	-	Skip bin operators will pick up clean scrap metal for free, to be processed at the recycling centre
Glass	-	-	0.1%	General waste skip bin

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Cladding metal sheets	-	1%	-	Off cuts to be added to steel bin
Fixtures and fittings	-	-	0.1%	Damaged goods to returned
Floor coverings	-	-	5%	General waste skip bin
Used pallets	-	0.25 t	-	Used pallets are to be made available to local business. Site engineer to contact local manufacturing or distribution to offer bulk pick up of pallets
Garden organics	$2m^3$			Estimated 2m3 turf to be re-used onsite to stabilise batters
Containers (cans, plastic, glass)	-	-	-	General waste skip bin
Cardboard	-	-	Approx.. 4m3	General waste skip bin
Residual waste			2 m3	General waste skip bin
Hazardous/asbestos waste (specify)	-	-		Green build site. If asbestos is uncovered in filling operations. Site supervisor to follow correct procedures to process lawfully
Paving			3%	Offcuts to be taken to the waste station
Stormwater pipe			3%	Offcuts to be taken to the waste station. Where possible concrete pipe reinforcement steel to be separated.
Sediment fencing posts	100%			Pegs reusable. Also accepted at the recycling centre.
Sediment fencing mesh	100%			Ideally reuse sediment cloth/mesh on future jobsites.

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4.6 CHECKLISTS

Explain how the waste management systems have been designed and will be operated to prevent the potential risk or injury or illness associated with collection, storage and disposal of waste. Outline how measures for waste avoidance have been incorporated into the design, material purchasing and construction techniques of the development
Selected Garbage and Recycling systems:
Supplier? (Name & Contact)
Education and Communication: All construction crews will be made aware of waste management practices (Y/N)
Security: Waste management collections services will occur within the development. No bins to be placed in the road reserve.
Access to bins and/or storage areas:
Level access to screened bin area (Y/N)
Storage space and location: (Attach an Illustration)
Proposed locations to be shown on plans/drawings if locations changed (Y/N)
Collection points and presentation of bins: Waste bin locations indicated on the
plans/drawings.
Cleaning, Odour and Noise:
Bins will be cleaned on a regular basis. Collection of bins not before 7am and not after 5pm

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Ongoing Waste Management: Once developed, the school is expected to maintain a
Consistent level of waste generation. New recycling opportunities will be taken advantage of
as they become available to further reduce waste.
Further information regarding better practice in the design, establishment, operation and ongoing management of waste services in residential multi-unit developments (MUDs) can be found in the Better Practice Guide for Waste Management in Multi-Unit Dwellings. Refer to https://www.epa.nsw.gov.au/resources/warrlocal/080042-MUD-waste-mgt.pdf

Plans and drawings (all developments)

The following checklists are designed to help ensure WMPs are accompanied by sufficient information to allow assessment of the application.

Drawings are to be submitted to scale, clearly indicating the location of and provisions for the storage and collection of waste and recyclables during:

- Construction
- Ongoing operation

Do the site plans detail/demonstrate:

Construction	**Yes/No/NA**
Areas to be excavated	Y
Size and location(s) of waste storage area(s)	Y
Access for waste collection vehicles	Y
Types and numbers of storage bins likely to be required	Y
Signage required to facilitate correct use of storage facilities	Y

Further information regarding types of waste, state regulations, illegal dumping, litter prevention tools and resources can be obtained at http://www.epa.nsw.gov.au/waste/

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Plans and drawings (all developments)…..continued

Ongoing operation	**Yes/No/NA**
Space	
Size and location(s) of waste storage areas	
Size and location(s) of waste bins	
Space provided for access to and the manoeuvring of bins/equipment	
Any additional facilities such as lifters, compactors and bulky waste storage	
Access	
Moving bins to and from the storage point to the collection point on collection day	
Direction of traffic flow for internal access driveways and roads sufficient for bin collection	
Design allows for the waste collection vehicle to move in a forward direction with no (or minimal) need to reverse	
Location of final collection point or presentation of bins	
Height clearance and slope, geometric design and strength of internal access driveways and roads	
Amenity	
Aesthetic design of waste storage areas	
Signage – type and location	
Arranging for the prompt removal of dumped rubbish	
All bins and containers used confirm to the Australian Standard for mobile waste containers (AS 4213)	

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5 Operational Waste

5.1 Separation of Waste

The Narrabri Community Recycling Centre has typical yellow bin recycling, green bin organics, and red bin waste.

It is recommended that school rubbish bins are not single bin placement collection, but rather separate recycling, waste, and organics bins (where possible), to promote habits for children inside and outside of school.

The following waste types and potential reuse is provided below.

Waste type	Is it recycled?	What recyclers can take the waste
Office white paper	Yes	Narrabri Community Recycling Centre
Recyclable paper and cardboard	Yes	Narrabri Community Recycling Centre
Organic waste (compostable)	Yes	Narrabri Community Recycling Centre
Garden waste	Yes	Ag plot reuse or Narrabri Community Recycling Centre
Recyclable containers	Yes	Narrabri Community Recycling Centre
E-waste (computers)	Yes	Planet Ark – recycle solutions accept parcel deliveries for old computers
Ink and toner cartridges	Yes	Planet Ark offer a drop locations at Post stores

5.2 Typical Acceptance of Waste in Bins

Recyclables- Includes co-mingled dry recycling collected fortnightly. Includes Paper and Cardboard, Steel and Aerosol Cans, Aluminium Cans, Trays and Clean Foil, Rigid Plastic Containers, including lids, Glass Bottles and Jars, Milk, Juice and Long-Life Cartons. Minimum waste generation rates 40 L/unit/week

Food Organics Garden Organics- collected weekly. Materials include raw and cooked food waste and garden organics.

Residual Waste- collected fortnightly and is for Waste only. This includes items that cannot be diverted, recycled or avoided. Materials include plastic bags, Polystyrene Foam, Crockery, Pyrex and Glassware, Disposable Nappies. Minimum waste generation rates 80L/unit/week.

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5.3 Bin Location for Bin Collection Day

Bins are proposed to be located within the school grounds as per the architectural plan layout, situated near the environment centre. Further detailed design will be required to ensure the turning path for an 8m long garbage truck will be able to manoeuvre within the school grounds at the intended pick-up location.

5.4 Site use of Organics and Waste Audits

Educational programs such as: School waste audit analysis, waste audit recording, low waste lunches, waste road maps, composting and vegetable garden care are tools in which children can find ways to make use of the waste they create.

5.5 E-Waste

No computers are to be processes at the Narrabri Community Recycling Centre. Several suppliers in computer hardware and supplies provide collection of old systems, once new systems are purchased. It is anticipated that every two to four years computer fleets will be replaced at large scale.

5.6 Odours from School Bins

The grounds person is to maintain adequately the odour of all bins on the site. Council bins are to be hosed out in appropriate areas on a fortnightly bases (or sooner as required).
This is to be done in an area set out by an environmental engineer, taking into consideration nearby stormwater channels.

5.7 Identify, quantify, and classify the likely waste streams to be generated during construction and operation

Research into similar projects, it has been identified that typical waste streams generated by the school in operational state is as follows.

Waste Streams	Operational Precinct
Paper & Cardboard	Across all rooms in school, playground waste
Co-mingled recycling	Across all buildings
Secure documents	Admin Area, secondary offices
Electronic waste	Most classrooms, IT rooms
Large waste	Science facility, Ag plot, maintenance area
General waste	Across all of site
Food and garden organics	Across all of site due to lunch areas.

The following waste generation rate assumptions are as follows.

Operation Space	Waste Generation	Recycling Generation Rate
Canteen	150 L per 100m^2 per day	150 L per 100m^2 per day
Other	80 L per 100m^2 per day	80 L per 100m^2 per day
Offices	10 L per 100m^2 per day	10 L per 100m^2 per day
Educational Spaces	5 L per 100m^2 per day	5 L per 100m^2 per day

The following table lists the estimated operational floor space of the development.

Operational Space	Space/area (m^2)
Offices	490
Educations Spaces	3652
Canteen	47
Other	1500

The following table provides an estimation to waste generation for each of the above general spaces.

Operational Space	General Waste (L per day)	Recycling (L per day)
Offices	49	49
Educations Spaces	182	182
Canteen	71	71
Other	75	75
TOTAL	**377**	**377**

The following dimensions of the bin sizes and footprints used for waste storage area requirements are listed below.

Bin Size (L)	Height (mm)	Depth (mm)	Width (mm)	Approximate footprint (m^2)	Source
80	870	530	450	0.24	See below *
240	1080	735	585	0.41-0.43	
660	1250	850	1370	0.86-0.16	
1100	**1470**	**1245**	**1370**	**1.33-1.74**	

*. NSW EPA Better Practice Guide for Resource Recovery in Residential Developments 2019

5.8 IDENTIFY APPROPRIATE SERVICING ARRANGEMENTS FOR THE SITE

It is recommended that the storage area be provided with the following bins, which will be required to be collected weekly:

- 2 x 1100L General waste bins
- 2 x 1100L Recycling bins
- 1 x 1100L Green Organics bin

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6 Conclusion

Based on the architectural plans, the floor areas have been sized based on planned use and the categorised into groups for allocation of waste generation. A total of 377L of general waste and 377L of recyclable waste per day during school operation has been determined. With this quantity it is recommended to use 1100L bins, which are collected once weekly.

There are sufficient recycling services within the Narrabri region to treat and process waste generated by the school. Training and education programs are a large part of the effectiveness of school children separating their waste into correct bins.

Larger bins are available from the Narrabri Community Recycling Centre. Bins are proposed to be located within the school grounds as per the architectural plan layout, situated near the environment centre.