



Riverview Projects (ACT) Pty Ltd
West Belconnen Waste Management Strategy
Volume 1 - Strategic Construction Waste Management Plan

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Table of contents

Acronyms.....	3
1. Introduction.....	4
1.1 West Belconnen Development.....	4
1.2 West Belconnen Waste Management Strategy	4
1.3 Scope and limitations	5
1.4 Reference Documents.....	6
2. Targets	8
3. Organisational Structure.....	9
4. C&D Recovery Facility	10
4.1 Introduction	10
4.2 Development and Location	10
4.3 Operations	11
5. Construction Waste Reduction Plans.....	15
5.1 Who is covered by the CWRPs?.....	15
5.2 What about smaller contractors?	15
5.3 What is to be included in each CWRP?.....	15
5.4 Are there different types of CWRPs?	16
5.5 Is there any data reporting?	16
5.6 How are CWRPs submitted, reviewed and approved?	16
5.7 Communications.....	17
5.8 SCWRP review schedule.....	17
6. Waste Contractor	18
6.1 Bin Locations.....	18
6.2 Separation of materials on-site	18
7. Waste Project Manager	20
7.1 Appointment.....	20
7.2 Role and Responsibilities	20
7.3 Communications.....	21
7.4 Systems Manager	21
7.5 Site Supervisors	22
7.6 Methods and Materials for Recovery.....	22

Figure index

Figure 1 - Materials flows and responsibilities.....	9
Figure 2 – West Belconnen Landfill Site Showing Location of C&DRF	11

Appendices

Appendix A – Draft Construction Waste Management Plan Template

Acronyms

ACT	The Australian Capital Territory
C&D	Construction and demolition
C&DRF	Construction and Demolition Recovery Facility – see Section 4
CWRP	Construction Waste Reduction Plan – see Section 5
DCC	Development Control Code for Best Practice Waste Management in the ACT – see Section 1.4.2
NSW	New South Wales
SCWRP	Strategic Construction Waste Reduction Plan which is this document and applies only during the progressive construction phases
WBD	West Belconnen Development
WMAA	The Waste Management Association of Australia
WMRRMP	Waste Management and Resource Recovery Master Plan a separate document that applies to the whole site during its on-going occupation

1. Introduction

1.1 West Belconnen Development

1.1.1 Development

The West Belconnen Development (WBD) involves the construction of 11,500 dwellings straddling the NSW-ACT border at West Belconnen. Of these, 6,500 dwellings will be in the ACT and 5,000 in NSW. Riverview Projects (ACT) Pty Ltd is the project manager for the planning of West Belconnen, acting on behalf of the ACT Government for the ACT land and on behalf of the land owners for the NSW land.

Development blocks will be sold or leased¹ to third-party builders who will have a limited time in which to develop the blocks they have bought or leased. Some builders may acquire a number of blocks or even all or a majority of blocks in a particular stage. This takes away from Riverview Projects a degree of control over the activities of the builders. Some control may be maintained by the inclusion of covenants in contracts and requirements for bonds to be lodged. A combination of these methods, and a convenient and easy to use waste system that saves builders time and money, is likely to be the most effective approach.

This Strategic Construction Waste Management Plan will be used to inform a more detailed business study to 'prove-up' the viability of the proposed waste management plan, noting that the participation and co-operation of third-party building is an integral part of effective implementation.

1.1.2 Vision

The vision for the development is a model sustainable community. The vision will inspire sustainable living, development practice and awareness. The community will be an example of best practice design, construction and long-term liveability. Riverview Projects is aiming for 6 Green Star certification and is employing practices, processes and systems that embody innovation and design excellence.

1.1.3 Composition

The development consists of residential, commercial and community elements. The residential areas will be a mixture of low density and mixed use properties and will accommodate a final population of about 30,000 people or more. The commercial elements will include retail, office, services and light industrial operations. There will also be community facilities including schools.

1.2 West Belconnen Waste Management Strategy

1.2.1 Strategy Aim

The West Belconnen Waste Management Strategy (WBWMS) focuses on improved resource recovery outcomes, minimising impact on urban amenity and reducing climate change impacts.

¹ The Commonwealth *Seat of Government (Administration) Act 1910* established a land tenure system in the ACT where the Commonwealth owns all the land and, instead of freehold ownership, allows land 'owners' to enter into long-term fixed leases, usually 99 years.

1.2.2 Two Part Strategy

The WBMWS covers the whole development including the parts in NSW and the ACT. There are two sub-plan elements to this strategy. The first (Volume 1) is this document, the Strategic Construction Waste Reduction Plan (SCWRP) which will apply only during the progressive construction phases. The second (Volume 2) is a separate document, the Waste Management and Resource Recovery Master Plan (WMRRMP) which will apply to the whole site during its on-going occupation.

Only the first 15 stages of the development are dealt with in detail in these strategies. The details of the later stages are likely to change over the course of the development and accurate figures can only be developed and provided as the development proceeds.

The WBMWS, including the SCWRP and WMRRMP, has been developed in conjunction with the Site Master Plan and will be integrated into it. Because of the time over which construction will take place, some parts of the development will be occupied while others are under construction. As the site is developed progressively, both the SCWRP and the WMRRMP will be enacted concurrently, although at different stages as construction would precede occupation.

1.2.3 Strategic Construction Waste Reduction Plan

Due to the scope of the development, the time over which it will be constructed and the likelihood that a significant number of builders and contractors will be involved in the project, the SCWRP is an overarching document that provides general directions for the management of waste during the construction stages. Under the SCWRP, building contractors will be required to prepare and submit their own more detailed waste management plans.

1.3 Scope and limitations

This report has been prepared by GHD for Riverview Projects (ACT) Pty Ltd and may only be used and relied on by Riverview Projects (ACT) Pty Ltd for the purpose agreed between GHD and the Riverview Projects (ACT) Pty Ltd as set out in this report.

GHD otherwise disclaims responsibility to any person other than Riverview Projects (ACT) Pty Ltd arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by Riverview Projects (ACT) Pty Ltd and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

GHD has not been involved in the preparation of any of the documents listed in this document and has had no contribution to, or review of them. GHD shall not be liable to any person for any

error in, omission from, or false or misleading statement in, any other part of the documents listed in this document.

The assessment of waste volumes in this report are intended to represent 'order of magnitude volumes' and should not be relied upon to inform business case or feasibility studies. GHD recommends that the study be revised following the receipt of developed design including indicative building sizes and residential dwelling mix.

1.4 Reference Documents

1.4.1 Development Control Code for Best Practice Waste Management in the ACT

The Development Control Code (DCC) is the key ACT Government guideline for managing waste during construction and ongoing use at the West Belconnen Development. It provides both directions and advice on how to incorporate waste management into new development design construction and operation. It applies to every development in the ACT.

Demolition, Excavation and Construction Phase

Section 3 of the DCC (Demolition, Excavation and Construction) sets minimum proportions by weight for the reuse and recycling of materials generated from these activities. These minimum requirements are:

- Demolition – 90%
- Excavation – 90%
- Construction – 75%

There are also more specific requirements, including:

- All waste from these activities must be stored separately on-site;
- Materials in each recyclable stream must be stored separately on-site;
- If there is limited space, recyclables can be taken off-site for separation;
- Materials that can't be reused or recycled must be disposed of at a licenced landfill;
- Waste storage areas must have vehicular access;
- Disposal and recycling documentation must be kept throughout the project and for 12 months afterwards; and
- Hazardous materials must be handled safely.

A Waste and Recycling Management Plan is required in relation to demolition and excavation where more than 20 m³ of excavation waste is likely to be generated from the development. In this case, Sections 1 and 3 of the Code apply. Section 1 restates this requirement and directs readers to Appendixes 2, 11 and 12.

Appendix 11 provides some general advice on the separation of construction and demolition (C&D) waste and states that:

- Separation must be maximised;
- On-site use must be maximised;
- Soils should be re-used off site if permitted; and
- Surplus materials should be minimised and separated and stockpiled for off-site recycling.

Further advice is provided using the waste hierarchy as a guide;

- Avoidance
 - Excessive materials should not be purchased;
 - Excessive packaging should be avoided; and
 - Building designs should minimise waste using pre-cut and modular methods.
- Reduce
 - Use returnable, stackable and reusable packaging systems such as pallets and containers;
- Reuse
 - Reuse materials especially with recycled content;
- Recycle
 - Separate materials on-site for recycling or reuse;
 - Remove from site for separation off-site.

The DCC applies to the WBD and its provisions need to be addressed. This SCWMP has been developed to comply with the DDC's requirements

1.4.2 WMAA Code of Best Practice for Waste Processing in the Construction and Demolition Industries

This document addresses many of the risks and impacts of C&D waste processing and proposes methods for managing and mitigating them. It covers four main stages in C&D waste generation and management:

1. The development application phase;
2. The demolition and construction phases;
3. Transport from the development or project site to a resource recovery facility; and
4. Processing at a resource recovery facility.

The document provides a comprehensive and useful guide to C&D waste handling and processing. Information from this guide has been incorporated into the proposed operation of the Construction and Demolition Recovery Facility (C&DRF) in Section 4.

2. Targets

Riverview Projects is aiming for Six Green Star certification. To obtain the points for waste management, between 60% and 80% of waste must be diverted from landfill.

Calculations based on estimates of the quantities of waste generated during construction² show that if a limited range of the most easily recovered materials is targeted for diversion (aluminium, brick, asphalt, concrete, organics, plastic coated copper, PVC, rock and gravel, soil, steel and timber) an overall diversion of 65% is possible. This assumes that:

- 70% of each of these materials is recovered;
- A net depth of 100 mm of soil is excavated from residential areas in each developed stage during construction; and
- A net depth of 200 mm of soil is excavated for roads in each developed stage during construction

It is certainly possible that the required diversion targets of between 60% and 80% are achievable.

² These can be found in Volume 3 - Background Documentation

3. Organisational Structure

The rest of this SCWRP discusses the facilities, positions, roles and responsibilities of those involved in the waste management system during the construction phases of the West Belconnen Development. The Figure 1 below shows the relationships between entities and how materials flow between them.

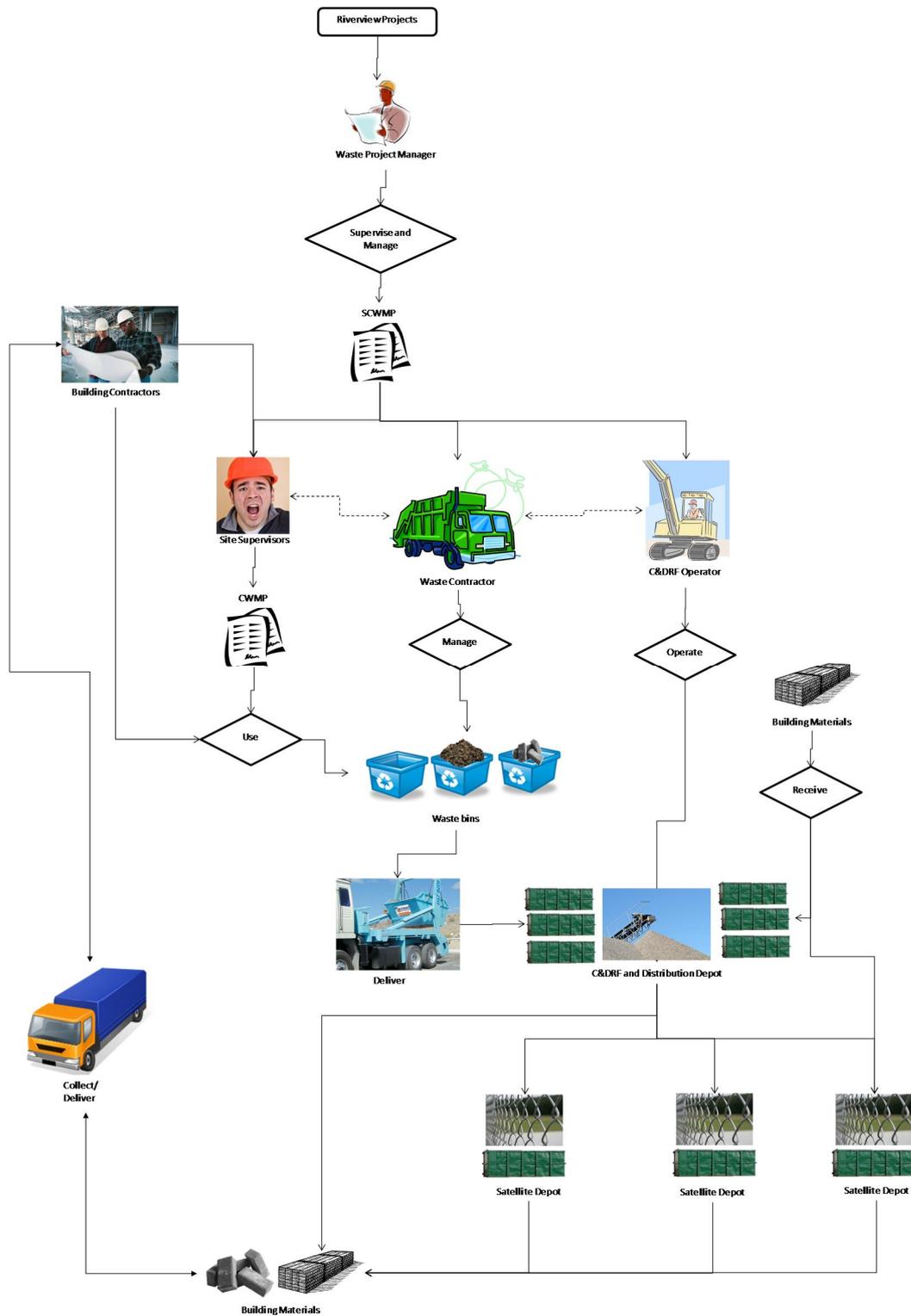


Figure 1 - Materials flows and responsibilities

4. C&D Recovery Facility

4.1 Introduction

It is extremely difficult to establish new waste facilities in just about any location, and near impossible near urban areas. The presence of the former West Belconnen Landfill site, a licenced site within the WBD area, is therefore a valuable asset and presents significant opportunities for waste transfer and resource recovery during the construction phase of the development.

It provides an ideal location for the C&D Recovery Facility (C&DRF) which would serve two purposes during the construction phase.

One purpose would be as a central delivery and consolidation point for materials to be used across the whole WBD site. The second would be as a location for waste and excess building materials from the clearing and construction operations on-site to be deposited, separated and recovered.

4.2 Development and Location

The C&DRF will be located on the former West Belconnen Landfill site (see Figure 2). Due to the distance between the C&DRF and some of the development stages on the outlying parts of the development, temporary satellite depots may be established in order to avoid unnecessary transport of C&D waste materials to and from the central C&DRF. Where these depots will be located and how they are managed will be up to the C&DRF operator.

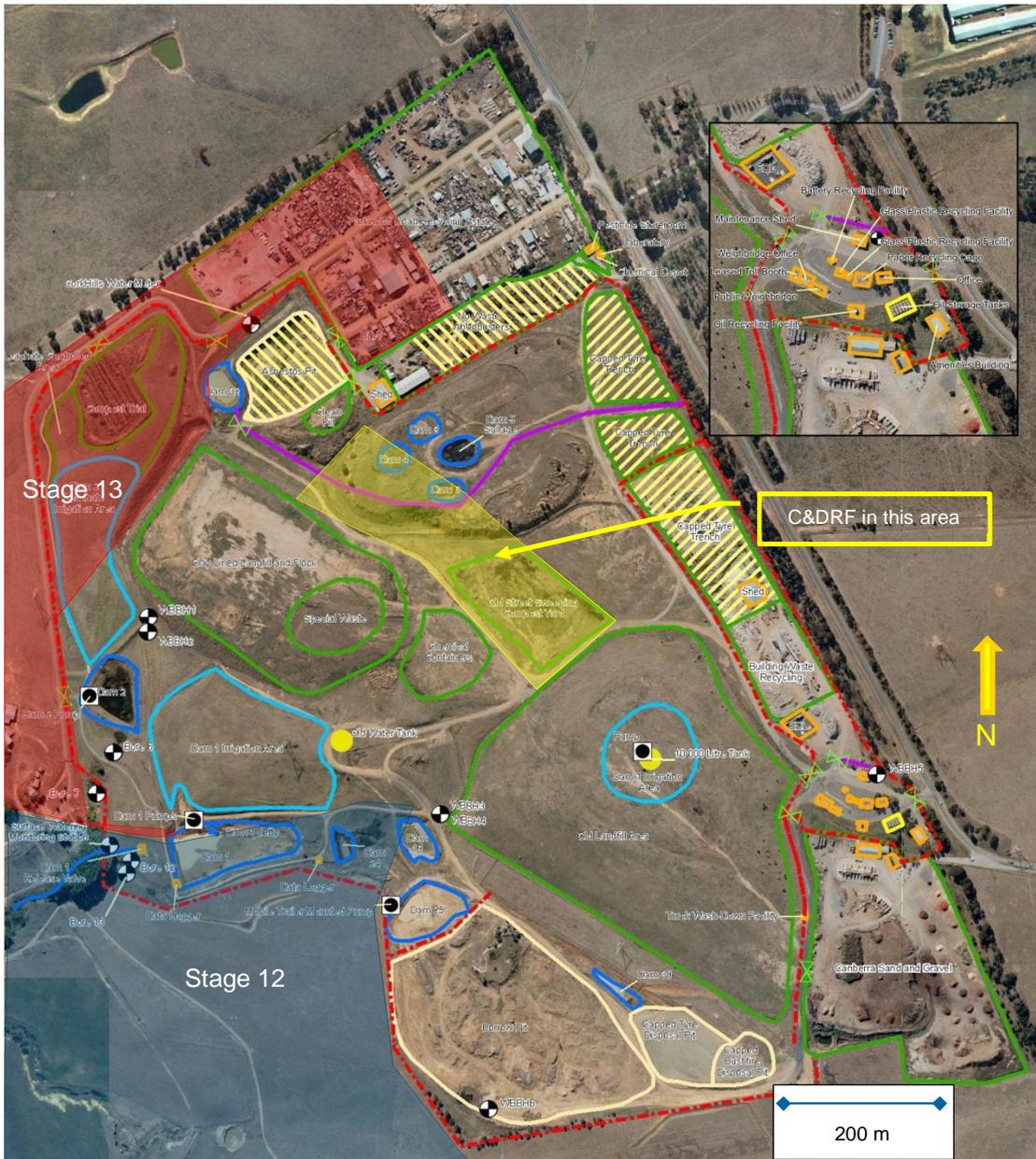


Figure 2 – West Belconnen Landfill Site Showing Location of C&DRF

4.3 Operations

4.3.1 Operators

Riverview Projects will engage an organisation to manage and operate the C&DRF during the construction phase. This organisation will have experience in operating similar facilities and be able to make 'products' for use on site during construction or have access to markets for products that may be generated from the site during the construction phase.

The Operator will manage the site in a cost-effective way, according to the Site Management Plan and the contract between itself and Riverview Projects.

The Operator may establish temporary satellite depots near those stages under development if this is an efficient way to avoid transporting C&D waste to and from the central C&DRF. The satellite depots need not be any more than a fenced and gated yard in which waste materials

can be stockpiled. There may also be secured containers for more valuable materials such as aluminium and other metals.

The waste-related purposes of the C&DRF are to, in priority order:

1. Reuse as much C&D waste as possible on-site;
2. Recycle as much of what cannot be reused; and
3. Dispose of only those materials that cannot be reused and recycled.

Specific key performance indicators will be set and will be required to be met.

The Waste Project Manager will monitor and supervise the operation of the C&DRF.

When construction ceases, the C&DRF will either:

- Be decommissioned;
- Be converted to another waste-related use; or
- Host the expansion of an adjacent transfer station the development and operation of which is covered in Volume 2 and which will continue operating indefinitely.

4.3.2 Distribution Depot

The C&DRF could also be a distribution depot for materials to be used at the WBD. Apart from supplying product materials generated from processing waste materials generated during construction, the C&DRF Operators may;

- Arrange for the efficient supply of construction materials to minimise waste including excess or unnecessary packaging;
- Receive materials from off-site;
- Unpack materials as required;
- Batch materials for collection or delivery to different parts of the site; and
- Separate packaging materials.

Waste from delivery of supplies could be minimised by ordering materials in bulk or specifying returnable, reusable or recyclable packaging. Any waste generated from delivery and unpacking such as cardboard, plastic film, timber and other materials could be collected at this point and would not get any further on-site. These materials could then be separated and stockpiled for recovery or disposal.

As there are a limited number of suppliers in the ACT for bulk materials such as bricks and roofing material, the distribution depot site could be a central location for these, and any other suppliers, to establish distribution bases to which materials could be delivered, unpacked, prepared for use and sourced by builders. These prepared materials could also be delivered to temporary satellite depots near those stages furthest away from the central distribution depot, if this is an efficient way of distributing materials to these outlying stages.

4.3.3 Waste Storage

Materials will be delivered by the Waste Contractor (See Section 6), or by others on-site, either separated, as specified by the Waste Project Manager (see Section 7), or mixed. What materials will be separated and what will be mixed will be specified by the Waste Project Manager and shown in every Construction Waste Reduction Plan (CWRP) (see Section 5).

Because of the physical characteristics of some waste materials and the quantities that may be generated, different materials may be stored using different methods.

The following materials are expected to be stored in bins:

- Aluminium;
- Ceramic;
- Glass Fibre;
- Plasterboard;
- Plastic Coated Copper;
- PVC;
- Steel; and
- Residual Waste

The following materials are expected to be stored in stockpiles.

- Asphalt;
- Bricks and tiles;
- Concrete;
- Organics (vegetation);
- Reinforced concrete;
- Rock and gravel;
- Timber; and
- Soil.

This information is provided as a guide and may change during the course of the project. Other storage systems may also be used. Storage methods will at the discretion of the C&DRF operator, the Waste Contractor, the Waste Project Manager or a combination of all three.

4.3.4 C&D Recovery

The C&DRF will operate cost effectively and according to best practices used at C&D resource recovery facilities where processing of C&D waste materials is undertaken. C&D materials will be separated at source wherever possible, but it is expected that some materials will be delivered to the facility as mixed wastes.

The facility will operate according to all relevant licences and approvals and apply all necessary controls and regulations.

The C&DRF will have a Site Management Plan that will address the following issues:

- Dust management and control including specifications for dust suppression, extraction systems and work practices;
- Noise management and control including methods for ensuring noise does not exceed regulatory limits, noise monitoring, noise control infrastructure and practices;
- Water management including development of a surface water management plan taking into account best practice water management;
- Material storage particularly stockpile management and their impacts and safe use;
- Hazardous materials and waste including development of protocols and procedures, material acceptance and refusal criteria, load inspection methods, recording hazardous materials and storage and removal procedures for hazardous materials;

- Traffic management including development of a traffic management plan that covers methods to minimise the impact of traffic, use of designated routes, clear signposting, traffic queuing areas, use of a weighbridge, wheel wash, designated vehicle and pedestrian areas managing overloading;
- Record keeping including details of volumes incoming and outgoing, rejected loads, stock levels, destination and origin of incoming and outgoing loads and a complaints register;
- Fencing and security including installation of a boundary fence and gates with warning signs, use of locks and gates, fence and gate inspections;
- WH&S management including assessment of risks, development of a Safety Management Plan that complies with regulatory requirements and includes induction, training and/or supervision of personnel and visitors, appropriate personal protective equipment; emergency response procedures; and
- Continuous review and revision.

5. Construction Waste Reduction Plans

5.1 Who is covered by the CWRPs?

Every builder and contractor working on the WBD site over its entire construction life will be covered by a CWRP, which will in turn be developed and managed under this Strategic Construction Waste Reduction Plan.

5.2 What about smaller contractors?

Not every building and contractor working on the WBD site need prepare their own CWRP, as long as their waste generating, reduction, recycling, reuse and disposal activities are covered by one. Small sub-contractors who are engaged for short periods by a larger contractor can be covered by that large contractor's CWRP. If a builder, contractor or sub-contractor is covered by a CWRP, the entity that prepared, and is named as responsible for the CWRP, will be responsible for the activities of other builders, contractors or sub-contractors covered by the plan. In this case, the larger contractor would be responsible for ensuring any smaller sub-contractors comply with the CWRP.

5.3 What is to be included in each CWRP?

CWRPs must provide details for the activities of all builders, contractors or sub-contractors covered by the plan including;

- The types and amounts of waste generated;
- How much waste of different types will be;
 - Reused on-site;
 - Recovered or recycled off-site;
 - Disposed of at the C&D Recovery Facility (C&DRF - see Section 4); or
 - Landfilled;
- How and where waste will be;
 - Stored and transported;
 - Reused on-site;
 - Recovered or recycled off-site; or
 - Landfilled;
- The details of all builders, contractors, sub-contractors and suppliers covered by the plan including;
 - Company name;
 - Address and phone numbers;
 - The name of each contractors' Site Supervisor (See Section 7.5) and their contact details including mobile telephone and e-mail address;
 - Number of personnel on-site;
 - Main activities on-site;
- Methods used to communicate with builders and contractors covered by the CWRP.

5.4 Are there different types of CWRPs?

Different builders and contractors may have different specifications in their individual CWRPs. The details of each CWRP will depend on a variety of factors including:

- The type of construction activities being performed;
- The number and type of sub-contractors;
- The types and quantities of waste being generated;
- External factors; and
- The operation of the C&DRF.

This information will be maintained by the Waste Project Manager (see Section 7) in a register of builders, contractors, sub-contractors.

5.5 Is there any data reporting?

All organisations responsible for CWRPs will be required to submit each week accurate data on the quantities of waste generated, reused, recycled and disposed of during the previous week. This information will be submitted online.

A template for a CWRP can be found in Appendix A.

5.6 How are CWRPs submitted, reviewed and approved?

5.6.1 Submission

Builders, contractors and sub-contractors who are required to prepare a CWRP will do so before commencing work on the project.

5.6.2 Approval by Waste Project Manager

The Waste Project Manager will review each CWRP and either approve it or return it to the submitter for amendment. If the Waste Project Manager returns the CWRP for amendment, he or she will indicate what changes are to be made or what additional information is required.

When a CWRP is approved, the submitting builder, contractor or sub-contractor will be notified that its CWMP has been approved.

5.6.3 Updating CWRPs

Builders, contractors and sub-contractors should update their CWRPs online when:

- Any of their waste generating activities change;
- If there are changes to their main contact personnel;
- If there are changes to the contact details for their main contact personnel;
- If notified by the Waste Project Manager by e-mail, text message or other approved method. This will usually be if there are changes to;
 - Site conditions
 - The requirements to separate materials;
 - Operations at the C&DRF; or
 - Any other requirements for CWRPs.

5.6.4 Auditing of CWRPs

The activities of all builders, contractors and sub-contractors will, from time to time, be checked against the relevant CWRP. Builders, contractors and sub-contractors will be subject to penalty if:

- They do not comply with their CWRP;
- Their CWRP is not up to date; and/or
- Their CWRP does not accurately reflect their waste generating activities.

5.7 Communications

All contractors that have approved CWRPs will maintain regular communication with all builders, contractors, sub-contractors and any other stakeholders covered by their CWRPs. The CWRP will show the methods used for this communications. The communication will inform all those covered by the CWRP of;

- The waste and recovery system on-site;
- The roles and responsibilities of those covered by the CWRP in relation to waste management; and
- The penalties for not adhering to the CWRP.

5.8 SCWRP review schedule

The SCWRP will be subject to an overarching review at the following times:

- Once every six months;
- At the completion of each stage;
- Any other time that circumstances might require.

A detailed review will be undertaken:

- Once a year; and
- Any other time that circumstances might require.

An overarching review will compare provisions of the SCWRP with actual practices and:

- Amend the SCWRP according to any urgent requirements;
- Recommend amendment for any non-urgent requirements during the detailed review.

The detailed review will compare provisions of the SCWRP with actual practices and;

- Amend SCWRP according to any urgent or non-urgent requirements; and
- Amend the SCWRP according to any recommendations of any previous overarching reviews.

The updated SCWRP will then be distributed to all contractors, including the Waste Contractor, builders and sub-contractors operating on site.

6. Waste Contractor

The Waste Project Manager will engage a waste contractor who will:

- Provide bins and containers for waste materials on site;
- Ensure bins and containers are;
 - In good condition;
 - Appropriate for the particular use; and
 - Clearly and appropriately labelled at all times;
- Remove bins and containers when full or when required;
- Deliver mixed or separated contents of bins and containers to the C&DRF, or other location as specified by the Waste Project Manager.

The Waste Contractor will also ensure:

- Recoverable materials are separated;
- Separated materials remain separated;
- Separated materials are not contaminated and rendered unrecyclable;
- Separated materials are delivered to the C&DRF or other locations as required; and
- Waste materials are delivered to landfill.

The Waste Contractor will provide adequate plant and staff on site every day to ensure these tasks are completed.

The Waste Contractor will have a vehicle movement plan (VMP) and risk assessment for safe movement of heavy vehicles into and out of the site. The VMP will include primary and secondary routes taking into account local road load limits and traffic conditions. The Waste Contractor's vehicles will be registered and certified as roadworthy. Drivers will not load vehicles above the legal limit. Loads will be covered to prevent spillage and litter.

The Waste Contractor and its vehicles will comply with the site environment management plan and the VMP.

6.1 Bin Locations

As there are likely to be a number of third-party builders operating during construction of any given stage, the Waste Contractor will be required to place bins in the numbers and locations that are the most efficient for use and collection.

This may mean that sets of bins for the collection of certain materials will be placed in locations to serve a number of building sites. This could be on yet undeveloped blocks, road verges or other vacant ground. The locations should be those that are most convenient for builders so that it is easier to use the bins than to transport waste off the site to another location.

6.2 Separation of materials on-site

After consultation with the Waste Contractor and the operator of the C&DRF, the Waste Project Manager will specify what materials are to be separated on-site.

What materials are to be separated will most likely change during the course of the construction phase due a variety of reasons including:

- Changes in the markets for recyclable C&D waste;

- The capacity and/or operation of the C&DRF;
- The types of buildings being constructed;
- The types of waste being generated;
- The location of construction activities;
- The stage of construction at the site; and
- The cost of disposing of certain materials.

The Waste Project Manager will supervise and monitor the Waste Contractor and ensure tasks are being completed satisfactorily.

7. Waste Project Manager

7.1 Appointment

This part of the SCWRP sets out the role and responsibilities of the Waste Project Manager. The Waste Project Manager may be appointed and employed by Riverview Projects directly or as a contractor. Regardless of the Project Manager's employment arrangements, there should be only one Waste Project Manager for the whole development to ensure a consistent approach to all waste management issues and to avoid different waste and data collection methods being used at different parts of the development.

The Waste Project Manager's role is to ensure that this SCWRP is properly enforced. It may be that the role of the Waste Project Manager under this SCWRP will be incorporated into a supervisory or management position which also has wider responsibilities. The responsibilities of the Waste Project Manager however, are significant and will require a sizeable proportion of the incumbent's time.

Broadly, the Waste Project Manager's responsibilities will include:

- Safety;
- Quality;
- Environmental performance;
- Records management;
- Time management;
- Cost management;
- Overseeing site staff and contractors; and
- Reporting to management.

Anyone occupying this position should have:

- experience in the building industry;
- previously had all or most of these responsibilities, particularly environmental operations; and
- have the authority and personality to deal with potential many builders, contractors and sub-contractors.

7.2 Role and Responsibilities

A number of general waste management procedures will be administered by the Waste Project Manager. As examples, these may include:

- Implementing the SCWRP;
- Liaising with and directing contractors' Site Supervisors;
- Receiving and checking reports and data provided by Site Supervisors;
- Ensuring all contractors, sub-contractors and suppliers are aware of their obligations and requirements under the SCWRP;
- Receiving and verifying contractor CWRPs and accrediting contractors accordingly;
- Monitoring contractors' waste generation and waste handling activities and enforcing remedial actions and penalties in cases of non-compliance;

- Engaging, supervising and monitor the Waste Contractor;
- Checking the Waste Contractor's waste disposal licenses and records as required;
- Engaging specialist and licensed sub-contractors to remove suspected hazardous waste to comply with legal requirements and keep appropriate records;
- Determining what changes may need to be made to the SCWRP;
- Determining what materials are to be separated and recycled under the provisions of the SCWRP;
- Ensuring the waste collection contractor(s), waste processing facilities and landfill are licensed to receive the waste expected to be generated on-site, including any hazardous waste; and
- Ensuring soil and rock is, where required, tested and classified as suitable to be reused or delivered to the relevant landfill.

7.3 Communications

The Waste Project Manager will be the primary point of contact for all builders, contractors and sub-contractors for all waste management issues and will be the conduit through which information about waste management flows from the Principal Contractor and Riverview Projects to all builders, contractors and sub-contractors and their staff.

The Waste Project Manager will communicate with builders, contractors, sub-contractors and any other stakeholders involved in the construction process using a variety of methods according to what information needs to be communicated

- Contractors will submit drafts of their CWRPs through the development's web site;
- All contractors' registered to work on the site will provide the name and details for their main designated contact person to whom information is to be provided;
- Urgent messages of relevance to all on site will be sent by text message and may direct contractors to the development's web site;
- Routine messages of relevance to all on site will be sent by e-mail to a recipients list and may direct contractors to the development's web site;
- Updated CWRPs will be available on the development's web site and contractors will be notified by text or e-mail when this occurs;
- Contractors found to be non-compliant will be called by telephone to a face to face meeting with the Waste Project Manager where written notice of the non-compliance will be provided;
- All face to face information exchange will be followed up by confirmation by e-mail.

7.4 Systems Manager

The role of Systems Manager will be undertaken either by someone employed by Riverview Projects for this task, solely or among others, or by someone with other existing responsibilities. The Systems Manager will be responsible for, among other things:

- Communicating relevant safety alerts and changes to regulations, legislation and guidelines to management and contractors' Site Supervisors through the Waste Project Manager;
- Helping to identify training needs, ensure training is being carried out where required and keeping training records;

- Ensuring contract compliance and compliance with quality systems;
- Carrying out internal audits and report on performance; and
- Aiding in accident investigation.

7.5 Site Supervisors

Site Supervisors will be working for building contractors and will be responsible for on-site supervision during the course of the project. Site Supervisors will be the main point of contact between the Waste Project Manager and the different contractors and sub-contractors.

A list of specific responsibilities will be developed as part of each individual CWRP but it is expected they will include control of site labour and plant and communicating all necessary information to site personnel.

As examples, specific responsibilities may include:

- Working with the Waste Contractor to obtain, position, identify and label recycling and waste bins in accordance with the SCWRP and each contractor's CWRP;
- Ensuring all employees and sub-contractors are aware of the SCWRP, their contractor's CWRP and their obligations to separate waste on-site;
- Liaising with and taking directions from the Waste Project Manager;
- Recording the generation, separation and removal of waste types and quantities and supplying these records to the Waste Project Manager as specified in the SCWRP and the contractors' CWRP; and
- Recording the use of any recycled materials and supplying these records to the Waste Project Manager as specified in the SCWRP and the contractors' CWRP;

7.6 Methods and Materials for Recovery

GHD expects that during construction some materials will be separated at source while others may be delivered to the C&DRF mixed for separation there³. More about how materials may be stored can be found in Section 4.3.

What materials may be separated for recovery will be decided by the Waste Project Manager, but could include the following.

7.6.1 Soil

Soil refers to fill and soil from surface clearing, excavation and site re-profiling. This could be stockpiled at temporary satellite depots or delivered to the C&DRF during excavation where different types would be stockpiled. Suitable soil types could then be available from the satellite or central stockpiles for use during the course of construction or for public sale. Calculations⁴ show that there is likely to be a large quantity of soil and the demand for it is not known.

7.6.2 Metals

Ferrous and non-ferrous metals would be generated during the course of construction and could be one of the materials separated at source. Different metal types could be placed in identified bins and collected for recycling.

³ More about the quantities of materials can be found in Volume 3 – Background Documentation

⁴ These can be found in Volume 3 – Background Documentation

7.6.3 Bricks and tiles

Brick and tile waste would consist of broken and split bricks and tiles as well as any small quantities of whole bricks and tiles that are leftover or not used on a particular building. These could be separated and placed in labelled bins. In cases where sufficient quantities of different types of bricks remain these could be stored at satellite depots or at the C&DRF for reuse.

7.6.4 Concrete and Masonry

Concrete waste would be generated from concrete pumps and pours. It would be placed in bins and may be mixed with other waste. Concrete and masonry may contain reinforced steel rods and may need to be crushed before being separated. Once crushed and separated the resulting material could be used for temporary roads or in drain construction, while any metals would be recovered for recycling.

7.6.5 Glass fibre

This material is waste insulation and would consist of offcuts and small quantities of unused batts. Where possible, remaining material could be stored at the C&DRF and reused. Unused materials may be recycled if possible.

7.6.6 Rock and gravel

This material would consist of aggregate separated from soil or remaining after construction and filling activities. It may be stockpiled at satellite depots or stored at the C&DRF and, if required, could be separated into different grades for reuse.

7.6.7 Asphalt

Asphalt would be generated during the course of road construction. Identified bins for this waste could be positioned so that it could be separated at source.

7.6.8 Timber

Quantities of small timber off-cuts would be generated from the construction of concreting form work and from frame and truss construction and installation. Some material may be contaminated with concrete and nails. Larger pieces could be stored at satellite depots or at the central C&DRF for reuse while smaller sized items could be chipped for use in landscaping and wet weather road and walk ways.

7.6.9 Organic

Organic material in the form of green waste would be generated during site clearance and landscaping. It may consist of grass or vegetation of any size up to large trees. It may be mixed with soil and dirt and may require separation at the C&DRF using mechanical plant. Once separated it could be chipped or mulched for use during construction and landscaping.

7.6.10 Plasterboard

Several different types of waste plasterboard may be generated including impact resistant, fibre cement, fibre cement soffit lining and fire rated plasterboard. This waste could be offcuts, damaged sheets and small quantities of unused material. Unused undamaged sheets could be stored at satellite depots or at the central C&DRF for reuse on site.

7.6.11 Plastic coated copper

This waste would be small quantities of wire offcuts generated during electrical installation. Although only small quantities are likely to be generated, the value of copper makes this

material likely worth recovering. It could be stored securely at satellite depots or at the central C&DRF.

7.6.12 PVC

PVC waste would consist of off-cuts of conduit and pipe generated during plumbing installation. Mostly pieces would be too small or damaged for reuse but if longer pieces are left over these would be stored at satellite depots or at the central C&DRF for reuse.

7.6.13 General builders waste

General builders waste would be generated over the whole period of construction. This material is expected to consist of a mixture of:

- Unrecyclable and composite materials such as insulation, carpet off cuts and broken windows;
- Small quantities of food and drink;
- The packaging in which food and drink is sold or stored;
- Packaging in which building material is delivered or stored; and
- Small quantities of miscellaneous waste generated during the construction process.

Bins would be positioned for the separation of this waste from other materials although it is likely that where small quantities of recoverable materials are generated, these materials will be placed in these bins as well. Contractors, sub-contractors and suppliers may be required to minimise some of this waste by using reusable and returnable containers, possibly supplied from the C&DRF distribution depot.

Cardboard, paper, other packaging and glass are likely to be included in this stream and these materials are easily separated for recycling.

Any general waste remaining, whether generated on-site or at the C&DRF, would be disposed of at a licensed facility.

Appendices

Appendix A – Draft Construction Waste Management Plan Template

Company name

Company address

Representative name

Representative mobile phone number

Representative e-mail address

Project stage

Company's main tasks on-site

Waste materials, quantities, storage and disposal methods

Material Type	Tonnes/Cubic Metres Generated per Week	Activity from Which Generated	How Stored at Construction Area	Quantity Reused On-site	How Reused	Quantity Delivered to C&DRF
Soil						
Steel						
Aluminium						
Bricks and tiles						
Concrete and masonry						
Glass fibre						
Rock and gravel						
Asphalt						

Timber						
Organic						
Plasterboard						
Plastic coated copper						
PVC						
Residual waste						
Other materials						

Details of all builders, contractors, sub-contractors and suppliers covered by this plan.

Company name	Address	Name of principal or main contact person	Contact Mobile Phone Number	Contact E-mail Address	Main Activities	Number of People On-site

Methods used to communicate with builders and contractors covered by the CWRP.

	Y/N
Telephone	
Text message	
E-mail	
Face to face conversation	
Written instructions	
Meetings	
Tool box talks	
Other	

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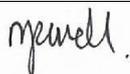
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