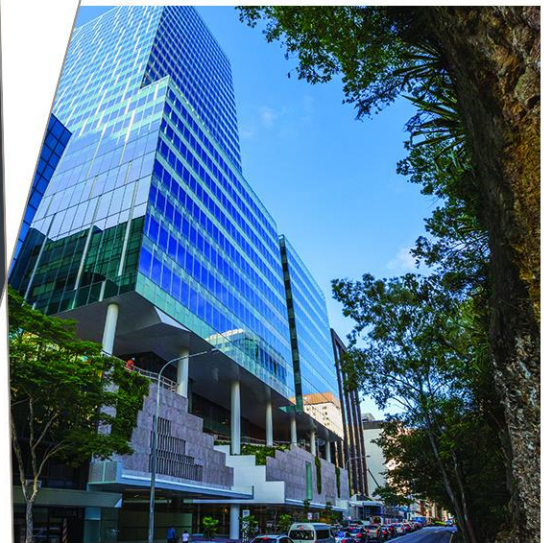


Feasibility Study – Mitchell RMC and Identification of Future Waste Sites in North Canberra

Design Options Study

Prepared for
Infrastructure Delivery Partners Group

7 October 2022



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Executive Summary

In January of 2021, Cardno, in partnership with Purdon Planning were engaged to undertake a feasibility study into upgrades to the Mitchell Resource Management Centre (MRMC) and identification of future waste sites in north Canberra. This analysis sought to build on a previous body of work to identify any and all opportunities for augmentation or potential relocation of the MRMC facility and identify sites with potential to accommodate waste infrastructure. Robust and ongoing consultation across government was a key principle of the engagement, which was staged as follows to allow sufficient input from relevant departmental stakeholders:

1. Site Shortlisting;
2. Site Investigation Reporting;
3. Detailed Site Analysis.
4. Recommendations

The following sections detail the investigations completed, the stakeholder engagement activities undertaken and the summary of findings from each stage.

Site Shortlisting

The first cut of site shortlisting utilised a multi criteria analysis to filter all blocks in Canberra northern suburbs (any blocks north of Lake Burley Griffin) based on the following 15 parameters:

- | | |
|--|--|
| 1. Blocks within 300m buffer of sensitive users removed | 9. Blocks with ownership constraints and high opportunity cost removed |
| 2. Blocks smaller than 16Ha removed | 10. Blocks with high ecological value removed |
| 3. Block adjoining main approaches removed | 11. Proximity to a B-Double route considered |
| 4. Future urban areas removed | 12. Average site gradient considered |
| 5. Blocks within waterways removed | 13. Access to water infrastructure considered |
| 6. Blocks with excessive travel times, existing development or heritage values removed | 14. Access to sewer infrastructure considered |
| 7. Blocks lacking access to road network removed | 15. Access to electrical infrastructure considered |
| 8. Identify and analyse blocks recommended in previous reporting (all too small) | |

Following consultation sessions with the EPSDD, SLA, TCCS, NCA, ACT Heritage, The Conservator and ACT Fire and Rescue, the following sites were identified for further investigation:

- | | |
|----------------------------------|----------------------------------|
| - Block 583 Section 0 Gungahlin | - Block 1582 Section 0 Belconnen |
| - Block 833 Section 0 Gungahlin | - Block 1600 Section 0 Belconnen |
| - Block 1634 Section 0 Belconnen | - Block 1616 Section 0 Belconnen |

Site Investigation Reporting

Following adoption of the shortlisted sites by the project and stakeholder teams, site investigation reporting was undertaken on each of the sites. This included significant consultation with stakeholders including the NCA, who expressed concerns relating to the proximity of the two Gungahlin sites to the Barton Highway main approach route, heritage constraints and the landscape setting of the sites. Additionally, the conservator expressed their concerns around Block 1616 and its environmental significance and proximity to the Karma Nature Reserve. Following internal discussion, these three sites were removed from the list.

The site investigation reporting on each of the four remaining sites sought to further interrogate constraints including traffic, bushfire, infrastructure, planning controls, visual impact and amenity, ecology, contamination and opportunity risk, among others. Based on these assessments, only two sites were recommended for further analysis, these being Block 1582 and Block 1634 in Belconnen.

These results were again issued to the stakeholder group and were ultimately endorsed. Three additional sites were identified during further engagement with the government stakeholders, as such, Blocks 1599, 1591 and 1602 in Belconnen were added to the list of sites recommended for detailed site analysis.

Detailed Site Analysis

The detailed site analysis reviewed each of the sites from a functional perspective and sought to identify opportunities and constraints for development of a Resource Management Facility. The spatial requirements for the facility and buffer zones were considered to set building envelopes on each of the sites. These envelopes were also informed by detailed site investigations including topographic survey, visual impact analysis, tree assessments, leasing constraints, ecological and heritage assessments.

In depth consultation with key stakeholders was also undertaken to understand the full range of potential uses on the sites; a range of government priority infrastructure aspirations; ecological and heritage considerations and leasing considerations to inform a detailed understanding of alternate opportunities for the sites.

The primary constraints impacting each of the sites analysed in this phase of the report have been summarised below:

1. **Block 1582** – This block has the lowest risk in terms of ecological, heritage and environmental risk, however its prominent location within the surrounding landscape would have a significant impact on local visual amenity. It is noted that this site is being considered as a future green waste facility to replace the existing Parkwood Road facility. Opportunities to collocate these facilities should be strongly considered. It is however noted that this Block is likely to have better development prospects in the medium to long term as the adjacent residential development in Ginninderry continues. The commitment of the site for an RMC facility needs to be considered within this context.
2. **Block 1634** – This block contains a readily developable site to the east of the Stockdill Drive Substation. The block is currently under a long-term lease which limits opportunities in the short term. The cost of road upgrades to facilitate safe access to the site will need to be considered. However, given the existing uses on the site, the opportunity for higher order uses of the site is limited.
3. **Block 1599** – Block 1599 is landlocked and access to the site would need to be sought through a block currently identified as having significant environmental values including being listed as an EPBC area. A facility on this site would also need to be smaller than is considered practical to comply with required buffers to surrounding land users. It is also privately leased and due to its late addition to the list of options no consultation has occurred with the lessee however it is anticipated that the leasing arrangements would present a significant hurdle.
4. **Block 1591** – The northern portion of this block is considered to be high quality habitat for the Superb Parrot, whilst the southern section has public amenity constraints, heritage as well as access challenges which are likely to prove prohibitively expensive. It is unlikely given the significant environmental values of the site that a proposal of this nature would be viable.
5. **Block 1602** and part Block 1634 – This block is excessively steep and would require significant upgrades to Stockdill Drive to provide safe and appropriate access which are likely to prove cost prohibitive. It is also proximal to nature reserves and the Molonglo River suggesting high likelihood of heritage constraints.

Recommendations

Based on the outcomes of all investigations, it has been confirmed that there is no one site in the Northern Suburbs of Canberra which stands out as the perfect site for this development. Each of the sites investigated have some form of constraint which limits the feasibility of development of a facility of this scale and nature. As such, the following recommendations are presented for consideration:

1. **Mitchell RMC Upgrades:** Remain in current location and undertake detailed investigations to review how the MRMC could be augmented and upgraded to meet the growing demands of the community with regard to its highly urbanised setting and minimising impacts on surrounding land uses. It is expected that an upgraded MRMC will not have sufficient space to manage green waste in the medium to long term.

2. **Block 1582:** Review the use and constraints of Block 1582 in the context of the proposed green waste facility. Maximising green waste disposal on this site may alleviate the need for such a facility on the Mitchell site, allowing for implementation of a two-site model or potential medium-term colocation.
3. **Block 1634:** This site should be identified as a long-term opportunity to house a new facility prior to through acquisition or once the existing lease on the block expires. The site has ample space for a single facility which could manage all waste streams and would be consistent with surrounding land uses including the Stockdill Drive Substation and the Lower Molonglo Valley Water Quality Control Centre. If the existing MRMC and proposed Block 1582 green waste facility can be designed to cope with the immediate needs of the community, this site represents a real opportunity in the medium to long term to consolidate all functions of a state-of-the-art waste management facility into a single, well located site. The strategic acquisition of such a large site also provides the potential to be utilised for other future government uses that are compatible with the infrastructure precinct. The future use of Block 1634 as the full service RMC catering to the northern suburbs must be considered as a strategic objective and should be considered through the Western Edge Plan.

The summary of the benefits and challenges of these recommendations has been provided in the table below.

Table 1-1 Summary of recommendations

Recommendation	Benefits	Challenges	Timeframe
Upgrade Existing MRMC site	<ul style="list-style-type: none"> - Reduces need to find a replacement site immediately. - The existing site is centrally located in the northern suburbs and is well connected to the major road network. - The site is well serviced by the existing public transport network, which is particularly relevant for the Greenshed which services the disadvantaged and aged populations. - Allows for a staged approach to government investment, spreading the budgetary commitments over several years. - Delays or prevents the need to buy back leased land ahead of time. - Provides certainty and continuity of service to the community. - Allows for the ultimate facility (alternatively located) to be appropriately designed and built whilst the existing remains operational. 	<ul style="list-style-type: none"> - Investment in the existing facility will not eliminate the need for a replacement facility in the long term. - Relies on a second north side site being available for treatment of green waste. - Existing and proposed land uses surrounding the site including the East Gungahlin High School and adjacent park and ride facility are putting pressure on the operability of the site, this is likely to continue. - Areas where the operation can expand are heavily treed and additional investigations will be required. - An alternative plan for services will need to be developed whilst the current facility is being upgraded 	<p>Short to medium term.</p> <p>This option will likely extend the life of the existing facility by 10-15 years.</p>

Recommendation	Benefits	Challenges	Timeframe
<p>Increase green waste capacity on Block 1582</p>	<ul style="list-style-type: none"> - Existing plans to develop a green waste facility on the site are well progressed and have been publicised to the community. - collocating would provide an integrated service to the community and utilises the investment in the common infrastructure needed to make the site work for green waste service i.e. road works and intersection. 	<ul style="list-style-type: none"> - The site is steep and will require significant earthworks, existing proposed footprint utilises flatter portions of the site. - Opportunity cost of the land for other uses needs to be considered for the site given its proximity to the Ginninderry development. 	<p>Short to medium term.</p> <p>It is expected that this facility would likely provide sufficient capacity for the next 10-15 years, in alignment with extensions to the MRMC site. The capacities of this and the MRMC sites will need to be sufficient enough to allow development of Block 1634</p>
<p>Preserve Block 1634 as a long-term solution for a single site RMC facility.</p>	<ul style="list-style-type: none"> - Delays or prevents the need to buy back leased land ahead of time - Allows time to engage with current lessee and manage expectations and provide a level of certainty - Provides an opportunity to integrate the planning of the site into the Western Edge plan - Allows sufficient time for appropriate planning of infrastructure and access. - Provides sufficient time for all land use studies and land acquisition process to be completed - Site size allows for future proofing and potentially government owned land for future compatible land uses maximising the investment on common infrastructure such as access. 	<ul style="list-style-type: none"> - Relies on a two-site system for the next 10-15 years. - Negotiations with exiting lessee will be required to determine the terms of long-term preservation - Interface of the proposed development with the Western Edge Plan. - Cost of road upgrades to service the site - Heritage and ecological investigations will be required. <p>Further detailed investigations, feasibility and design.</p>	<p>Long term.</p> <p>This is a long-term option, likely to be actioned in the next 15-20 years. This timeline will need to be reviewed in the context of the capacity which can be gained in the proposed expansion of the MRMC site as well as the proposed green waste facility on Block 1582.</p>

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SITE SHORTLISTING

1 Site Shortlisting

1.1 Introduction

Cardno has been engaged by Infrastructure Delivery Partners Group (IDPG) on behalf of Transport Canberra and City Services (TCCS) to undertake a feasibility study for a new Resource Management Centre for Canberra’s North and investigate potential sites to accommodate waste infrastructure. The facility will need to be designed to incorporate emerging technologies, have potential for further expansion and provide additional services in line with demographic growth in the region to enable continuous improvement and adaptability. The future facility should respond to the changing demands of the community and be situated and designed in a manner which promotes the boarder outcomes of ACT Government waste reduction initiatives.

The purpose of this engagement is to assess all available options for the relocation or augmentation of the Mitchell Resource Management Centre (RMC) and identify sites with potential to accommodate waste infrastructure to service Canberra’s Northside. The project team has completed an analysis of Canberra’s northern suburbs to identify all sites where a new facility could be feasibly developed. The site investigation process will inform more broadly of potential future waste sites for infrastructure, including potential upgrades or relocation options for the Mitchell RMC.

1.2 Background

The Mitchell Resource Management Centre (MRMC) provides essential waste management services to the North of Canberra. Considering the closure of the West Belconnen Resource Management Centre in 2020/2021, the MRMC will be under pressure to provide additional waste management services, such as green waste drop-off for communities in the city’s North. This project will assist in informing future infrastructure investment so that it is contemporary and provides a diverse range of services to meet current and future needs of the community. The aim is to provide an RMC that can incorporate emerging technologies, has potential for further expansion and provide services in line with demographic growth and change in the region to enable continuous improvement and adaptability. Block 847 Gungahlin is zoned IZ1: General Industry and currently occupies 60% of the existing site. The RMC is required to service north Canberra (inner north, Belconnen and Gungahlin districts) and achieve resource recovery targets and contribute to wider Government sustainability objectives.

Figure 1-1 Current MRMC Location (aerial image taken from Nearmaps)



1.3 Literature Review

Through the early planning phases of the project, a literature review of all previous reporting on the project was undertaken. A full copy of the Literature Review has been included in Appendix C of this document. The outcomes and recommendations for further assessments from the literature review will be addressed within this document.

1.4 Minimum Site Area Requirements

U-Rent Pty Ltd developed the Mitchell RMC Preliminary Area Requirements Assessment (U-Rent Pty Ltd, Jan 2019) to inform the planning process on behalf of ACT No Waste. The assessment reviewed the minimum site area which would be required to develop facilities with varying levels of service. The recommendations of the report have been included below:

1. That an area of land between **16 to 20 Hectares** be considered sufficient for the development of a new North Canberra RMC to replace the existing operations only of the Mitchell RMC where the bulky materials area is used for temporary storage only.
2. That an area of land between **20 to 28 Hectares** be considered sufficient for the development of a new North Canberra RMC where some additional minor processing operations are conducted on site.
3. That an area of land **exceeding 28 Hectares** is likely to be required where colocation and higher level processing is conducted for some bulky materials is conducted.

Based on the recommendations of the U-Rent Pty Ltd report and consultation with the Project Control Group, a site area of 16Ha was determined to be the minimum feasible lot size. This determination was based on the requirement for future growth, adaptability for new technologies and the provision sufficient buffers from future encroachment. Generally, the analysis sought to identify sites that are appropriate for current waste infrastructure requirements and have longevity built in to expand and change as innovation in the sector occurs.

1.5 Planning Shortlist – 11 Step Assessment

The site shortlisting utilised a multi criteria analysis to filter all blocks in Canberra northern suburbs based on the following 11 step assessment

1. Northern suburbs only, 300m sensitive user buffer applied.
2. Blocks under 16Ha removed.
3. Blocks adjoining main avenues, approach routes and within light rail 200m buffer zone removed.
4. Future urban area blocks removed, blocks with overlap to sensitive area removed.
5. Blocks within waterways removed, buffers consolidated.
6. Blocks with >30% existing development, ecological or heritage value removed. Blocks requiring long travel times (greater than 30 minutes from any one of the northern town centres) removed.
7. Blocks with low proximity to Distributor or Arterial roads removed.
8. Identify final blocks shortlisted in CTP report, all of which were under 16Ha and within buffer zones; ultimately removed.
9. Blocks with ownership constraints or high opportunity cost removed.
10. Overlay of ecological values (information only, not considered a fundamental constraint at this stage).
11. Engineering constraints assessment.

1.5.1 Final Planning Shortlist

Table 1-1 Final blocks included within the planning shortlist.

SITE	FID	DISTRICT	Size (m²)	Size (Ha)	BLOCK	SECTION	LISENCE	LAND USE
1	6	MAJURA	4,248,352	425	151	0	REGISTERED	NUZ1: BROADACRE
2	46	GUNGAHLIN	489,000	49	583	0	REGISTERED	NUZ3: HILLS, RIDGES AND BUFFER AREAS; PRZ1: URBAN OPEN SPACE
3	33	GUNGAHLIN	1,862,862	186	843	0	REGISTERED	NUZ3: HILLS, RIDGES AND BUFFER AREAS; RZ1: SUBURBAN
4	30	GUNGAHLIN	1,353,994	135	862	0	APPROVED	NUZ3: HILLS, RIDGES AND BUFFER AREAS
5	48	GUNGAHLIN	1,354,805	135	832	0	REGISTERED	NUZ3: HILLS, RIDGES AND BUFFER AREAS
6	50	GUNGAHLIN	2,366,912	237	833	0	REGISTERED	NUZ3: HILLS, RIDGES AND BUFFER AREAS
7	40	BELCONNEN	2,960,141	296	5	37	APPROVED	RZ3: URBAN RESIDENTIAL; NUZ3: HILLS, RIDGES AND BUFFER AREAS; PRZ1: URBAN OPEN SPACE; RZ1: SUBURBAN; CF: COMMUNITY FACILITIES; NUZ4: RIVER CORRIDOR; CZ4: LOCAL CENTRE
8	37	BELCONNEN	3,021,220	302	1634	0	REGISTERED	NUZ3: HILLS, RIDGES AND BUFFER AREAS; NUZ4: RIVER CORRIDOR
9	4	BELCONNEN	621,045	62	1582	0	REGISTERED	NUZ1: BROADACRE
10	17	BELCONNEN	1,642,709	164	1600	0	REGISTERED	NUZ3: HILLS, RIDGES AND BUFFER AREAS
11	27	BELCONNEN	1,750,501	175	1382	0	REGISTERED	NUZ3: HILLS, RIDGES AND BUFFER AREAS
12	26	BELCONNEN	642,180	64	1599	0	REGISTERED	NUZ1: BROADACRE
13	18	BELCONNEN	552,607	55	1597	0	REGISTERED	NUZ3: HILLS, RIDGES AND BUFFER AREAS
14	20	BELCONNEN	1,051,862	105	1596	0	REGISTERED	NUZ3: HILLS, RIDGES AND BUFFER AREAS
15	19	BELCONNEN	430,084	43	1593	0	REGISTERED	NUZ3: HILLS, RIDGES AND BUFFER AREAS
16	31	BELCONNEN	1,232,708	123	1591	0	REGISTERED	NUZ3: HILLS, RIDGES AND BUFFER AREAS
17	15	BELCONNEN	1,545,556	155	1419	0	REGISTERED	NUZ3: HILLS, RIDGES AND BUFFER AREAS
18	21	BELCONNEN	662,272	66	1616	0	REGISTERED	DES: DESIGNATED; NUZ3: HILLS, RIDGES AND BUFFER AREAS
19	23	BELCONNEN	213,059	21	1628	0	APPROVED	DES: DESIGNATED
20	13	BELCONNEN	729,118	73	1492	0	REGISTERED	DES: DESIGNATED
21	10	BELCONNEN	247,740	25	1587	0	REGISTERED	DES: DESIGNATED
22	28	BELCONNEN	595,598	60	1629	0	APPROVED	DES: DESIGNATED
23	5	BELCONNEN	408,821	41	1438	0	APPROVED	DES: DESIGNATED

1.6 Engineering Constraints Assessment

The 23 sites identified in the planning shortlist were workshopped and accepted by the Project Control Group. The next phase of the assessment was a 'first pass' for key engineering constraints of the sites. The key considerations for this assessment were:

1. Proximity to a B-Double route – Direct access to the B-Double route network is required for the long term serviceability of the proposed facility
2. Average site gradient – Sites with higher average grade require additional earthworks during construction. Ideal site grade is 1-8%
3. Access to water infrastructure – Operation of the facility will require significant water supplies.
4. Access to sewer infrastructure - Operation of the facility will require a trade waste licence and sewer connection.
5. Access to electrical infrastructure - Operation of the facility will require generate significant electrical demand.

The constraints chosen as part of this phase of assessment typically represent the highest cost site constraints on project of similar scale. It is noted from the engineering assessments that some of the sites are located in closer proximity to existing services than others. As such, the assessment does recommend some sites for further assessment which are not currently wholly serviced. The recommendations for such sites have been based on preliminary estimates of 'cost to service' as a function of proximity to existing. The outcomes of the engineering constraints assessment have been summarised in Table 2-2 3 on the following page.

The selected 23 sites identified in the matrix shows the responses to compatible uses, government tenure, heritage, ecology and if the sites require consultation. It is also noted that the Block 1582 is surrounded by heritage overlay/small sections of ecology. Block 1599 is surrounded by small sections of ecology and Block 1597 is surrounded by heritage. The outcomes of the selected sites matrix shown in the Table 2-3 on the following page.

Table 1-2 Engineering constraints assessment

SITE	DISTRICT	SIZE (Ha)	BLOCK	B-Double Access (Y/N)	Site Grade (%)	Water Service (Y/N)	Sewer Service (Y/N)	Electrical Service (Y/N)	Recommend (Y/N)	Primary Reason
1	MAJURA	425	151	Y	5.1%	N	N	N	N	Servicing
2	GUNGAHLIN	49	583	Y	1.4%	N	N	Y	Y	-
3	GUNGAHLIN	186	843	N	2.3%	N	N	N	N	Access
4	GUNGAHLIN	135	862	N	2.2%	N	N	N	N	Access
5	GUNGAHLIN	135	832	N	6.1%	N	N	N	N	Access
6	GUNGAHLIN	237	833	Y	6.7%	N	N	Y	Y	-
7	BELCONNEN	296	5	Y	5.2%	Y	N	Y	N	Buffers
8	BELCONNEN	302	1634	Y	5.9%	Y	Y	N	Y	-
9	BELCONNEN	62	1582	Y	3.8%	Y	N	Y	Y	-
10	BELCONNEN	164	1600	Y	3.4%	Y	N	Y	Y	-
11	BELCONNEN	175	1382	N	3.7%	N	N	N	N	Access
12	BELCONNEN	64	1599	Y	3.3%	Y	N	Y	N	Ownership
13	BELCONNEN	55	1597	N	4.4%	N	N	N	N	Access
14	BELCONNEN	105	1596	Y	5.1%	N	N	N	N	Servicing
15	BELCONNEN	43	1593	Y	6.2%	N	N	N	N	Servicing
16	BELCONNEN	123	1591	N	3.3%	N	N	N	N	Access
17	BELCONNEN	155	1419	Y	6.5%	N	N	N	N	Servicing
18	BELCONNEN	66	1616	Y	6.9%	N	N	N	Y	-
19	BELCONNEN	21	1628	Y	7.0%	Y	N	N	N	Servicing
20	BELCONNEN	73	1492	Y	7.6%	N	N	N	N	Servicing
21	BELCONNEN	25	1587	Y	11.1%	Y	N	N	N	Size
22	BELCONNEN	60	1629	Y	20.8%	N	N	Y	N	Servicing
23	BELCONNEN	41	1438	Y	5.1%	Y	N	N	N	Servicing

Table 1-3 Selected Sites Matrix

SITE	DISTRICT	BLOCK	SECTION	TERRITORY	ZONING	OVERLAY	GOV TENURE	HERITAGE	ECOLOGY	COMPATIBLE USES	VACANT	CONSULTATION
1	MAJURA	151	0	Y	N	N	N	Y	Y	Y	N	N
2	GUNGAHLIN	583	0	Y	N	Y	N	Y	Y	Y	N	Y
3	GUNGAHLIN	843	0	Y	N	Y	N	Y	Y	N	Y	Y
4	GUNGAHLIN	862	0	Y	N	Y	N	Y	Y	N	Y	Y
5	GUNGAHLIN	832	0	Y	N	Y	N	Y	Y	N	Y	Y
6	GUNGAHLIN	833	0	Y	N	N	N	Y	Y	Y	Y	Y
7	STRATHNAIRN	5	37	Y	N	Y	Y	Y	Y	Y	Y	N
8	BELCONNEN	1634	0	Y	N	Y	N	Y	Y	Y	Y	N
9	BELCONNEN	1582	0	Y	N	N	N	N	Y	Y	N	Y
10	BELCONNEN	1600	0	Y	N	N	N	Y	Y	Y	N	Y
11	BELCONNEN	1382	0	Y	N	Y	N	Y	Y	Y	Y	N
12	BELCONNEN	1599	0	Y	N	N	N	Y	Y	Y	N	Y
13	BELCONNEN	1597	0	Y	N	N	N	N	Y	Y	Y	N
14	BELCONNEN	1596	0	Y	N	N	N	N	Y	Y	Y	N
15	BELCONNEN	1593	0	Y	N	N	N	Y	Y	N	Y	Y
16	BELCONNEN	1591	0	Y	N	N	N	Y	Y	Y	Y	Y
17	BELCONNEN	1419	0	Y	N	Y	Y	Y	Y	N	Y	Y
18	BELCONNEN	1616	0	N	N	Y	Y	N	Y	Y	N	Y
19	BELCONNEN	1628	0	N	N	Y	Y	Y	Y	N	Y	Y
20	BELCONNEN	1492	0	N	N	N	N	Y	Y	N	Y	Y
21	BELCONNEN	1587	0	N	N	N	N	Y	Y	N	Y	Y
22	BELCONNEN	1629	0	N	N	Y	Y	Y	Y	N	Y	Y
23	BELCONNEN	1438	0	N	N	Y	Y	Y	Y	N	Y	Y

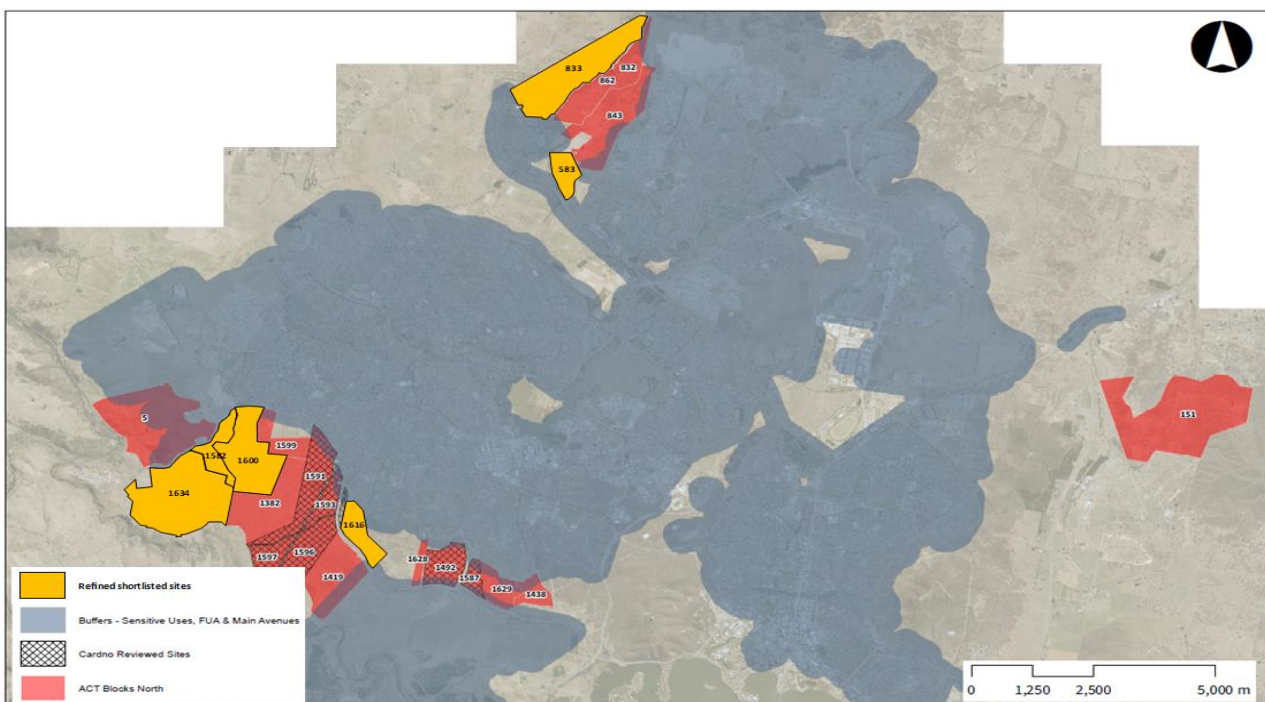
1.7 Refined Shortlist and Recommendations

Based on the assessments undertaken to date, the project team recommends the following sites be considered for further investigation in subsequent stages:

- Block 583 Section 0 Gungahlin
- Block 833 Section 0 Gungahlin
- Block 1634 Section 0 Belconnen
- Block 1582 Section 0 Belconnen
- Block 1600 Section 0 Belconnen
- Block 1616 Section 0 Belconnen

The final shortlisted sites have also been identified in **Figure 1-1** below.

Figure 1-1 Final shortlisted sites.



1.8 Stakeholder Consultation

Following the completion of chapter 1 of the Design Option Study, an extensive stakeholder consultation process was undertaken. As a result of this process, it was recommended that Block 1616 not be considered for further investigation as it contains areas of high ecological value. This recommendation has been accepted by the Project Control Group.

02

SITE INVESTIGATION REPORTING

2 Site Investigation Reporting

2.1 Review

Following the completion of Chapter 1 investigations, an extensive stakeholder engagement process was completed. As part of this engagement, the following government stakeholders were invited to provide feedback on the preliminary findings:

- Environment, Planning and Sustainable Development Directorate
- Suburban Land Agency
- Environmental Protection Agency
- National Capital Authority
- ACT Heritage
- The ACT Conservator
- ACT Fire and Rescue

Based on the feedback received through stakeholder engagement, it was recommended, and ultimately agreed that Block 1616 Section 0 Belconnen be removed from the shortlist. This decision was based on the existing environmental significance of the block. As such, the following sites have been included in Chapter 2 of the Design Options Study for further consideration:

- Block 583 Section 0 Gungahlin
- Block 833 Section 0 Gungahlin
- Block 1634 Section 0 Belconnen
- Block 1582 Section 0 Belconnen
- Block 1600 Section 0 Belconnen

The following provides an overview of the detailed site (desktop) assessments completed on the shortlisted sites. The purpose of this chapter of the report is to further refine the short list and make recommendations for sites which warrant further consideration.

2.2 Site Overview

The key attributes of the investigation sites have been included within Table 4-1 below:

Table 2-1 Block shortlist

SITE	FID	DISTRICT	Size (m ²)	Size (Ha)	BLOCK	SECTION	LISENCE	LAND USE
1	46	GUNGAHLIN	489,000	49	583	0	REGISTERED	NUZ3: HILLS, RIDGES AND BUFFER AREAS; PRZ1: URBAN OPEN SPACE
2	50	GUNGAHLIN	2,366,912	237	833	0	REGISTERED	NUZ3: HILLS, RIDGES AND BUFFER AREAS
3	37	BELCONNEN	3,021,220	302	1634	0	REGISTERED	NUZ3: HILLS, RIDGES AND BUFFER AREAS; NUZ4: RIVER CORRIDOR
4	4	BELCONNEN	621,045	62	1582	0	REGISTERED	NUZ1: BROADACRE
5	17	BELCONNEN	1,642,709	164	1600	0	REGISTERED	NUZ3: HILLS, RIDGES AND BUFFER AREAS

2.3 Site Investigations

Following the stakeholder consultation and recommendation in chapter 1. A summary of the existing services information for all five (5) sites has been compiled. The due diligence analysis includes Dial Before You Dig (DBYD) enquiries, work as executed data (where available) and correspondence with service authorities.

The summary of the existing services included in this report should be treated as indicative only and the accuracy of the information cannot be warranted. The location, size and capacity of all existing services will be confirmed during detailed design of the facility.

During the site Investigations the following assessments were undertaken for all five (5) sites:

- Traffic Conditions
- Flood Risk
- Bush Fire
- Potable Water
- Sewerage
- Stormwater Infrastructure
- Electrical Supply
- Telecommunications
- Gas
- Landform and Visual Amenity Analysis
- Existing Easements
- Ecological Value Review
- Heritage Value Review
- Contaminated Land Assessment
- Planning Pathway Review
- Opportunity Cost Analysis

2.4 Assessment Outcomes

As part of the site investigations, the project team have completed extensive reviews of the shortlisted sites agreed upon through stakeholder consultation on Chapter 1 of this report. As part of these assessments, we have used a risk-based approach to determine the complexity of developing a resource management centre on each of the investigation sites. Table 6-1 below summarises all investigations completed within Chapter 2 of this report by attributing a rating (1-5) for the risks identified during the assessments (Negligible, Low, Moderate, High, Very High).

Table 2-2 Summary of Chapter 2 investigations

Analysis	Investigation Sites				
	583	833	1582	1600	1634
Traffic	High	High	Low	Low	Low
Flood	Negligible	Negligible	Negligible	Negligible	Negligible
Bushfire	Moderate	Moderate	Moderate	Moderate	Moderate
Water	Low	High	Low	Low	Low
Sewer	Low	High	Moderate	Low	Moderate
Stormwater	Moderate	Moderate	Low	Low	Low
Electrical	Negligible	Negligible	Negligible	Negligible	Negligible
Telecommunications	Negligible	Negligible	Negligible	Negligible	Negligible
Gas	Negligible	Negligible	Negligible	Negligible	Negligible
Existing Landform	Low	High	Moderate	Low	Low
Visual Amenity	High	Very high	High	Very High	Negligible
Easements	Low	Low	Low	Low	Low
Ecology	Moderate	High	Low	Moderate	Moderate
Heritage	High	High	Low	Low	Moderate
Contamination	Low	Low	Low	Low	Low
Planning	Very High	High	Moderate	High	High
Opportunity	Very High	High	Very High	Very High	Negligible
Risk Rating	45	51	39	40	34

Based on the assessments completed as part of Chapter 2 of this report, the project team recommends Blocks 1582 and 1634 for further detailed assessment including the following site investigations:

- Site Survey;
- Preliminary Geotechnical Investigations;
- Preliminary Contamination Investigations;
- Detailed Heritage Investigations;
- Detailed Ecology Investigations;
- Site Service Masterplanning;
- Visualisations and Functionality Brief;
- Opinion of Probable Cost;
- Final Site Recommendation.

It is anticipated that the outputs of these assessments will allow the project team to compare and contrast the development of Blocks 1582 and 1634 with the option of remaining at the existing site in Mitchell, noting that functionality issues have already been identified in the Mitchell site.

03

DETAILED SITE ASSESSMENT

3 Detailed Site Assessment

3.1 Review

Following the completion of Chapter 1 and Chapter 2 investigations, an extensive stakeholder engagement process was completed. Based on the feedback received through stakeholder engagement, and further discussions, it was recommended that Blocks 1582, 1591, 1599, 1602 and 1634 in Belconnen be investigated further to determine adequacy for the proposed development.

After initial lessee consultation on Block 1634, the preferred site described in Chapter 2 of this report was not supported, and the site further west on Block 1602 was identified. For the purposes of fully analysing available land, both Blocks 1602 and 1634 have been included within Chapter 3 of this report. It is noted that the site referred to as 1602 does utilise some land from the eastern portion of Block 1634. It is also noted that given the requirement for existing uses on Block 1599 to be retained, only the southern portion of the site was assessed. The proposed development blocks have been identified on Figure 3-1 below.

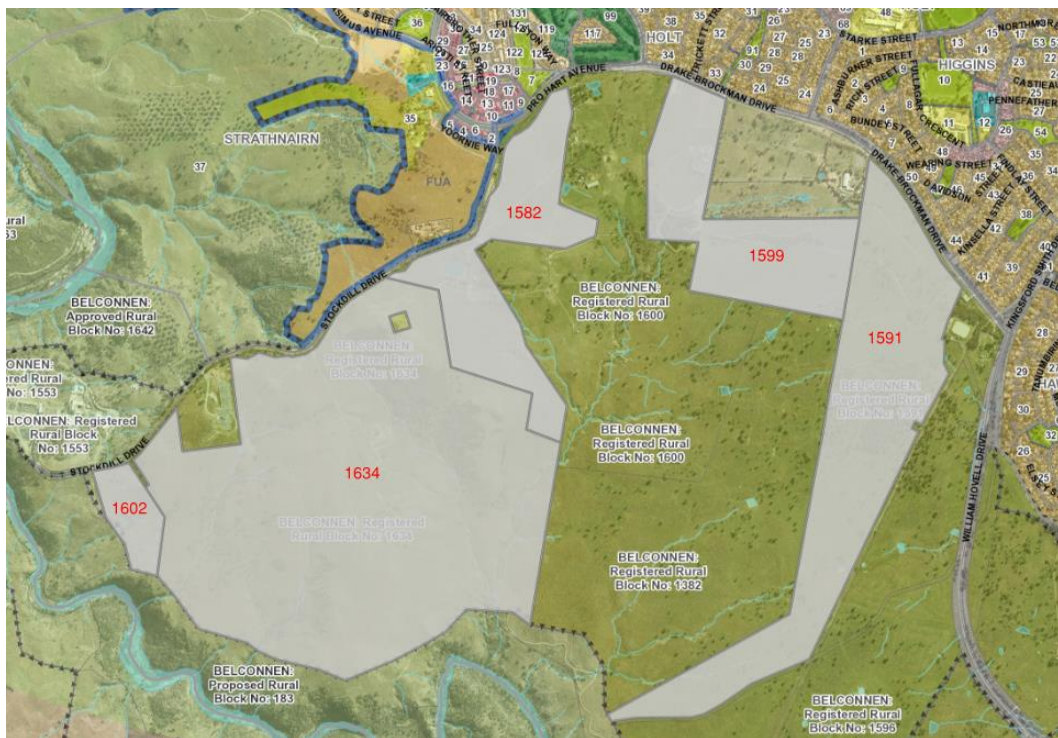


Figure 3-1 West Belconnen Sites Investigated for Chapter 3

Within this chapter of the report, the final shortlisted sites have been assessed, looking primarily at the following parameters:

- Topographic Review;
- Preliminary Contamination Investigations;
- Detailed Heritage Investigations;
- Detailed Ecology Investigations;
- Service Masterplanning;
- Layout and Functionality;
- Proximity and Ease of Service to the Community;
- Opinion of Probable Cost;
- Final Site Recommendation.

Revised planning strategy statement acknowledges that the location and sustainability of existing waste facilities will require reassessment due to expansion of Canberra’s metropolitan area with greenfield development.

3.2 Site Overview

The key attributes of the shortlisted sites are included within Table 9-1 below. The existing Mitchell site has also been included within this analysis to compare opportunities and constraints across all available sites. Each of the parameters identified in **Section 1** above have been analysed for these sites in the sections that follow.

Table 3-1 Blocks for detailed analysis

SITE	DISTRICT	Size (m ²)	Size (Ha)	BLOCK	SECTION	LISENCE	LAND USE
1	BELCONNEN	621,146	62	1582	0	REGISTERED	NUZ1: BROADACRE
2	BELCONNEN	1,232,888	123	1591	0	REGISTERED	NUZ3: HILLS, RIDGES AND BUFFER AREAS
3	BELCONNEN	642,277	64	1599	0	REGISTERED	NUZ1: BROADACRE
4*	BELCONNEN	129,867	12	1602	0	REGISTERED	NUZ4: RIVER CORRIDOR
5	BELCONNEN	3,021,733	302	1634	0	REGISTERED	NUZ3: HILLS, RIDGES AND BUFFER AREAS; NUZ4: RIVER CORRIDOR
6	GUNGAHLIN (Mitchell Site)	101,414	10	847	0	REGISTERED	IZ1: GENERAL INDUSTRY

*Block 1602 has been investigated in combination with part of block 1634 to achieve a developable footprint of 30Ha

3.3 Site Investigations

Specialist investigations were undertaken by Cardno and subconsultants for each site as follows:

3.3.1 Topographic Review

In October 2021, Cardno engaged ACT Survey to conduct surveys of the proposed developmental areas within Block 1602/1634, 1582 and 1634. The purpose of the survey was to investigate the topography of the sites to inform grade constraints which may impact development potential. Topographic information available on ACTmapi was used for the initial investigations for site 1591.

3.3.2 Preliminary Site investigations

Cardno engaged Lanterra to conduct preliminary site investigations on Blocks 1582 and 1634 to investigate any historic, current and potential sources of contamination that may impact the proposed development. As additional blocks were added to the list following chapter 2 consultation, full contamination testing was not completed on all sites. However, desktop analysis of these sites has not identified any lead indicators of serious contamination on these sites. Further analysis will be required should the warrant further review.

3.3.3 Heritage investigations

The preliminary desktop review discussed in Chapter 2 identified on and off-site heritage constraints for both Block 1634 and Block 1582 and determined the constraints to be moderate and low risk for each block respectively. As such, Cardno re-engaged Lanterra to conduct a detailed heritage assessment of these blocks.

3.3.4 Environmental Investigations

3.3.4.1 Ecological

The preliminary desktop review discussed in Chapter 2 identified on and off-site ecological constraints for both Block 1634 and Block 1582 and determined the constraints to be moderate and low risk for each block respectively. As such, Cardno re-engaged Lanterra to conduct a detailed ecological assessment of the blocks.

3.3.4.2 Tree Assessments

Cardno engaged Enviro Links Design (ELD) to conduct a detailed tree assessment of significant trees within the development areas of Block 1602/1634 and Block 1582 to determine their value and inform any constraints that the trees may impose on the proposed development. The value ranking for the trees is

based on the works being on leased land and therefore under the jurisdiction of the TCCS Urban Treescapes Unit (UTU) which means the Regulated Tree definitions have been used. The tree value definitions and constraints are summarised in Table 9-2 below.

Table 3-2 Tree Value Descriptions

Rank	Description	Constraints
Exceptional (E)	Trees that are outstanding examples of their species and have significant visual impact. Also includes rare species and trees with cultural heritage importance.	Significant value within the landscape context of the site and should be preserved. Must gain ACT Government approval prior to any tree removal
High (H)	Trees that are good examples of their species and have significant visual impact.	Good value within the landscape context of the site and should be preserved. Must gain ACT Government approval prior to any tree removal
Medium (M)	Trees that have reasonable form/size and good health.	Does not justify special attention of construction expenditure but justifies a minor design adjustment to save or could be removed if necessary. Must gain ACT Government approval prior to any tree removal
Poor (P)	Trees that have low growth or poor form and possible health problems	Expendable, remove if necessary – retain if appropriate to land use and future management costs and risks. Must gain ACT Government approval prior to any tree removal
Low (L)	Non-significant trees which don't meet the size requirements under the 2005 Tree Protection Act to be classified as a regular tree. These ranges from well-established quality trees to poor health trees of no significance.	Expendable, remove if necessary – retain if appropriate to land use and future management costs and risks. No government approval is applicable prior to any tree removal.

3.3.5 Service Masterplanning

Each block was assessed for the indicative service connection locations between the proposed layouts within the two sites and the nearby water, sewer and electrical infrastructure. Layout and Functionality Review

Each block was reviewed for developmental constraints concerning the visualisations from residential areas and the anticipated functionality of the proposed facility within the site.

3.3.6 Proximity and Ease of Service

Blocks have been assessed for their proximity to existing development and sensitive receptors. Each block has also been assessed for ease of access for the intended users.

3.4 Block Analysis

3.4.1 Block 1582

Block 1582 is located on Stockdill Drive, approximately 800m from the existing Ginninderry Urban Development Area. The site has recently been identified by TCCS as the proposed location of the relocated Parkwood Road Green Waste Facility. The preliminary information available suggests that the southern portion of this block may be dedicated to this green waste facility. Development of such a facility would limit the available land for this proposed land use but presents opportunities for interim use which are explored further below. The proposed development footprint has been included on Figure 3-2 below.

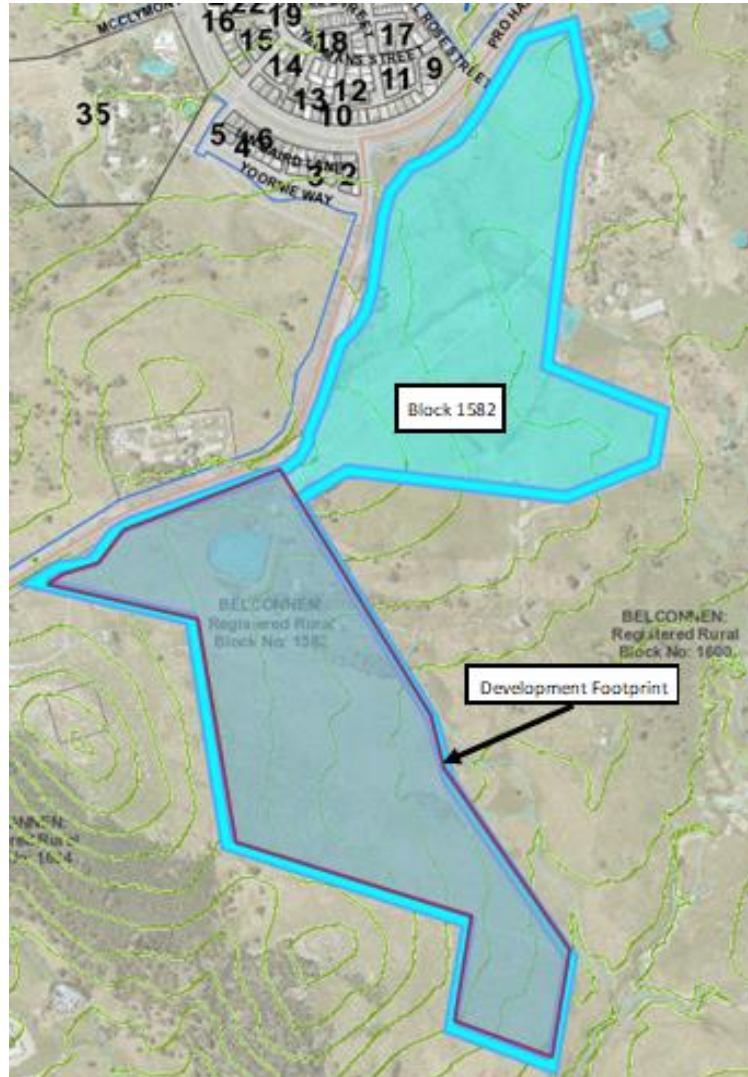
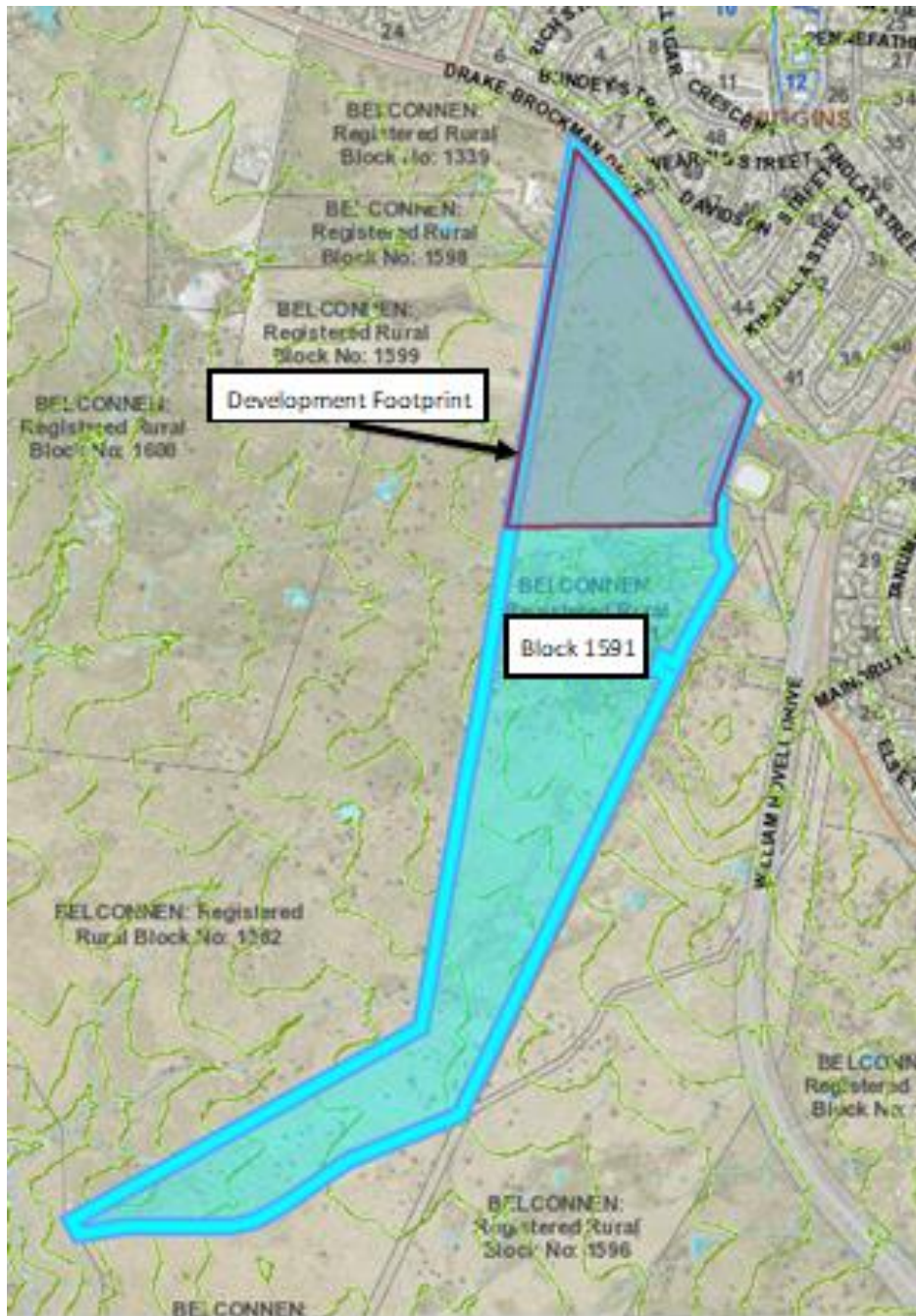


Figure 3-2 Block 1582 Aerial View and Development footprint of the subject Site (Source: ACTmapi 2020 Aerial Photography)

3.4.2 Block 1591

Block 1591 was identified as a site for consideration following consultation at the completion of chapter 2 of this report. The site was shortlisted due to its proximity to existing services and transport infrastructure. The site is in closer proximity to existing residential development and other sensitive land uses. The proposed



development footprint has been included on Figure 3-3 below.

Figure 3-3 Block 1591 Aerial View, Zoning and Development footprint of the subject Site (Source: ACTmap1 2020 Aerial Photography)

3.4.3 Block 1599

Block 1599 was identified as a site for consideration following consultation at the completion of chapter 2 of this report. The site was shortlisted due to its proximity to existing services and transport infrastructure. The site is in closer proximity to existing residential development and other sensitive land uses. The proposed development footprint would utilise the southern leg of the site as it has historically been used for viticulture. The proposed development footprint has been included on Figure 3-4 below.



Figure 3-4 Block 1599 Aerial View, Zoning and Development footprint of the subject site (Source: ACTmapi 2020 Aerial Photography)

3.4.4 Block 1602

Block 1602 was identified through consultation of the lessee of Block 1634 as a site which they would prefer be investigated as a potential site to house the proposed facility. A development footprint of 30Ha was identified across the common boundaries of 1602 and 1634 (subsequently referred to as 1602). The proposed development footprint is bound to the north east by the Molonglo Valley Interceptor Sewer (MVIS) and to the south west by steep landforms adjacent to the Molonglo River. The proposed development footprint has been included on Figure 3-5 below.

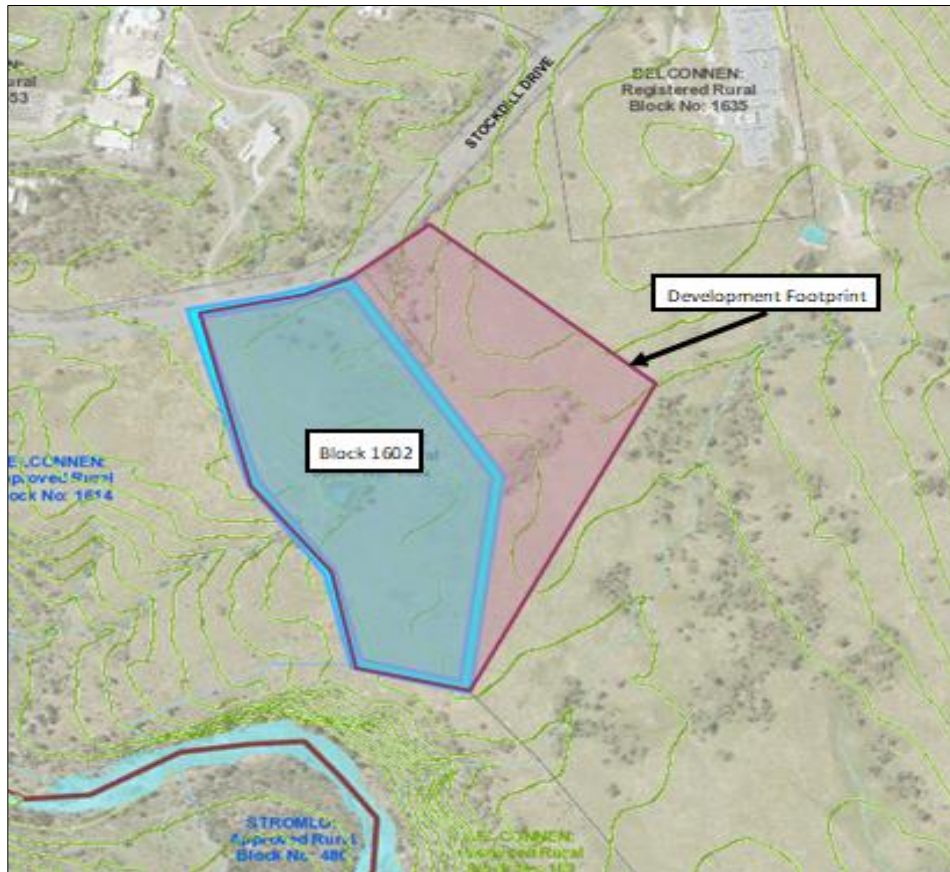


Figure 3-5 Block 1602 Aerial View and Development Footprint of the subject Site (Source: ACTmapi 2020 Aerial Photography)

3.4.5 Block 1634

Block 1634 is the single largest block of all considered through this phase of the assessment. It is currently encumbered by existing high voltage power lines and the Stockdill Drive substations, as well as the MVIS in the south. The flattest portion of the block has been identified as the potential development footprint as it also corresponds with the area of lowest ecological value, and lowest visual impact. The proposed development footprint is identified in Figure 3-6 below.

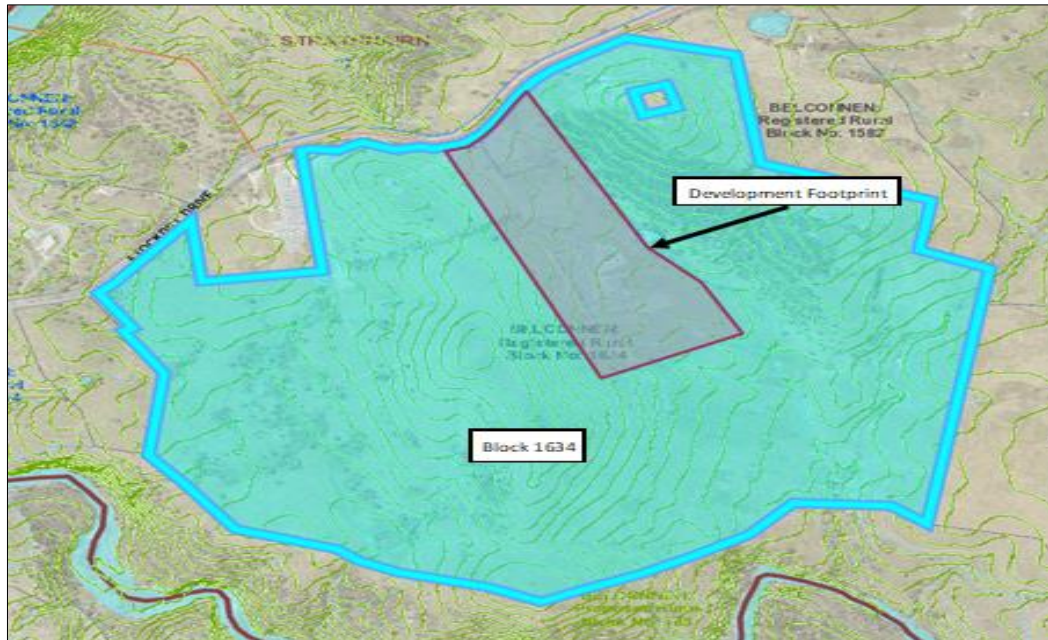


Figure 3-6 Block 1634 Aerial View and Development footprint of the subject Site (Source: ACTmap 2020 Aerial Photography)

3.4.6 Mitchell

As part of the review of all available sites for the proposed upgrades, the existing site has also been analysed for opportunities and constraints impacting the delivery of service to the community. Whilst the site has long been identified as being too small to meet the growing needs of the community, this section of the report focuses on the constraints impacting improvements to the existing facility.

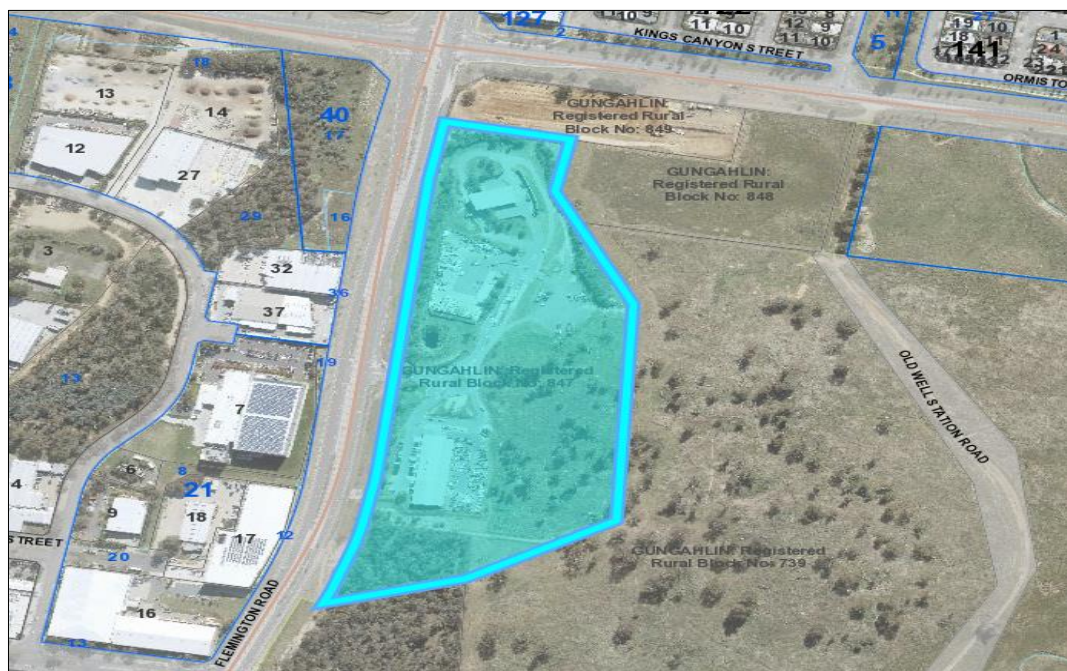


Figure 3-7 Block 847 Gungahlin, the existing RMC facility.

3.5 Outcomes

The detailed site analysis reviewed each of the sites from a functional perspective and sought to identify opportunities and constraints for development of a Resource Management Facility. The spatial requirements for the facility and buffer zones were considered to set building envelopes on each of the sites. These envelopes were also informed by detailed site investigations including topographic survey, tree assessments, leasing constraints, ecological and heritage assessments.

In depth consultation with key stakeholders was also undertaken to understand the full range of potential uses on the sites; a range of government priority infrastructure aspirations; ecological and heritage considerations and leasing considerations to inform a detailed understanding of alternate opportunities for the sites.

The primary constraints impacting each of the sites analysed in this phase of the report have been summarised below:

1. **Block 1582** – This block has the lowest risk in terms of ecological, heritage and environmental risk, however its prominent location within the surrounding landscape would have a significant impact on local visual amenity. It is noted that this site is being considered as a future green waste facility to replace the existing Parkwood Road facility. Opportunities to collocate these facilities should be strongly considered. It is however noted that this Block is likely to have better development prospects in the medium to long term as the adjacent residential development in Ginninderry continues. The commitment of the site for an RMC facility needs to be considered within this context.
2. **Block 1634** – This block contains a readily developable site to the east of the Stockdill Drive Substation. The block is currently under a long-term lease which limits opportunities in the short term. The cost of road upgrades to facilitate safe access to the site will need to be considered. However, given the existing uses on the site, the opportunity for higher order uses of the site is limited.
3. **Block 1599** – Block 1599 is landlocked and access to the site would need to be sought through a block currently identified as having significant environmental values including being listed as an EPBC area. A facility on this site would also need to be smaller than is considered practical to comply with required buffers to surrounding land users.
4. **Block 1591** – The northern portion of this block is mapped as high-quality habitat for the Superb Parrot, whilst the southern section has public amenity constraints, heritage as well as access challenges which are likely to prove prohibitively expensive.
5. **Block 1602** and part Block 1634 – This block is excessively steep and would require significant upgrades to Stockdill Drive to provide safe and appropriate access. It is also proximal to nature reserves and the Molonglo River suggesting high likelihood of heritage constraints.

The table on the following page summarises all the constraints identified and assesses the relative risks for each of the sites

Table 3-3 Constraints summary table

Block	Topography	Contamination	Heritage	Ecology	Trees	Servicing	Function	Proximity	Opportunity Cost	Site Preparation Cost	Overall Constraint Assessment
1582	Moderate	Low	Low	Moderate	Low	Low	Moderate	Low	High	High	Moderate (1.7/4)
1591	Moderate	Moderate	High	Very High	Very High	Low	High	Very High	Moderate	Moderate	High (2.7/4)
1599	Moderate	Moderate	High	Very High	Very High	High	High	Very High	Low	Moderate	High (2.8/4)
1602	Very High	Moderate	Moderate	Very High	High	Very High	Very High	Very High	Low	High	Very High (3.1/4)
1634	Moderate	Low	Low	Moderate	Moderate	Low	Moderate	Low	Low	Moderate	Moderate (1.5/4)
Mitchell	Low	High	Low	Moderate	Moderate	Low	High	High	High	Low	Moderate (2/4)

The risks attributed above have been summarised from the investigations undertaken through this chapter of the analysis. They were scored 1 to 4 (low to very high) and the overall constraint assessment provides the average constraint rating impacting each of the sites investigated. The analysis suggests that Block 1582, 1634 and the existing Mitchell RMC sites are the least constrained in the context of the analyses completed. Recommendations for each of these sites have been provided in the following section.

3.6 Recommendations

Based on the outcomes of all investigations, it has been confirmed that there is no one site in the Northern Suburbs of Canberra which stands out as the perfect site for this development. Each of the sites investigated have some form of constraint which limits the feasibility of development of a facility of this scale and nature. As such, the following recommendations should be considered:

1. **Mitchell RMC Upgrades:** Remain in current location and undertake detailed investigations to review how the MRMC could be augmented and upgraded to meet the growing demands of the community with regard to its highly urbanised setting and minimising impacts on surrounding land uses. It is expected that an upgraded MRMC will not have sufficient space to manage green waste in the medium to long term.
2. **Block 1582:** Review the use and constraints of Block 1582 in the context of the proposed green waste facility. Maximising green waste disposal on this site may alleviate the need for such a facility on the Mitchell site, allowing for implementation of a two-site model or potential medium-term colocation.
3. **Block 1634:** This site should be identified as a long-term opportunity to house a new facility once the existing lease on the block expires. The site has ample space for a single facility which could manage all waste streams and would be consistent with surrounding land uses including the Stockdill Drive Substation and the Lower Molonglo Valley Water Quality Control Centre. If the existing MRMC and proposed Block 1582 green waste facility can be designed to cope with the immediate needs of the community, this site represents a real opportunity in the medium to long term to consolidate all functions of a state-of-the-art waste management facility into a single, well-located site. The strategic acquisition of such a large site also provides the potential to be utilised for other future government uses that are compatible with the infrastructure precinct. The future use of Block 1634 as the full service RMC catering to the northern suburbs must be considered as a strategic objective and should be considered through the Western Edge Plan.

The summary of the benefits and challenges of these recommendations has been provided in the table below.

Table 3-4 Summary of recommendations

Recommendation	Benefits	Challenges	Timeframe
Upgrade Existing MRMC site	<ul style="list-style-type: none"> - Reduces need to find a replacement site immediately -The existing site is centrally located in the northern suburbs and is well connected to the major road network. - The site is well serviced by the existing public transport network, which is particularly relevant for the Greenshed which services the disadvantaged and aged populations. - Allows for a staged approach to government investment, spreading the budgetary commitments over several years. - Delays or prevents the need to buy back leased land ahead of time - Provides certainty and continuity of service to the community. - Allows for the ultimate facility (alternatively 	<ul style="list-style-type: none"> - Investment in the existing facility will not eliminate the need for a replacement facility in the long term. - Relies on a second north side site being available for treatment of green waste. - Existing and proposed land uses surrounding the site are putting pressure on the operability of the site, this is likely to continue. - Areas where the operation can expand are heavily treed and additional investigations will be required. - An alternative plan for services will need to be developed whilst the current facility is being upgraded 	<p>Short to medium term.</p> <p>This option will likely extend the life of the existing facility by 10-15 years.</p>

Recommendation	Benefits	Challenges	Timeframe
	located) to be appropriately designed and built whilst the existing remains operational.		
Increase green waste capacity on Block 1582	<ul style="list-style-type: none"> - Existing plans to develop a green waste facility on the site are well progressed and have been publicised to the community. - collocating would provide an integrated service to the community and utilises the investment in the common infrastructure needed to make the site work for green waste service i.e. road works and intersection. 	<ul style="list-style-type: none"> - The site is steep and will require significant earthworks, existing proposed footprint utilises flatter portions of the site. - Opportunity cost of the land for other uses needs to be considered for the site given it's proximity to the Ginninderry development. 	<p>Short to medium term.</p> <p>It is expected that this facility would likely provide sufficient capacity for the next 10-15 years, in alignment with extensions to the MRMC site. The capacities of this and the MRMC sites will need to be sufficient enough to allow development of Block 1634</p>
Preserve Block 1634 as a long term solution for a single site RMC facility.	<ul style="list-style-type: none"> - Delays or prevents the need to buy back leased land ahead of time - Allows time to engage with current lessee and manage expectations and provide a level of certainty - Provides an opportunity to integrate the planning of the site into the Western Edge plan - Allows sufficient time for appropriate planning of infrastructure and access. - Provides sufficient time for all land use studies and land acquisition process to be completed - Site size allows for future proofing and potentially government owned land for future compatible land uses maximising the investment on common infrastructure such as access. 	<ul style="list-style-type: none"> - Relies on a two site system for the next 10-15 years. - Negotiations with exiting lessee will be required to determine the terms of long term preservation - Interface of the proposed development with the Western Edge Plan. - Cost of road upgrades to service the site - Heritage and ecological investigations will be required. <p>Further detailed investigations, feasibility and design.</p>	<p>Long term.</p> <p>This is a long term option, likely to be actioned in the next 15-20 years. This timeline will need to be reviewed in the context of the capacity which can be gained in the proposed expansion of the MRMC site as well as the proposed green waste facility on Block 1582.</p>