

Youth Justice Redevelopment Project,  
Cherry Creek, Victoria:  
Preliminary Documentation

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# 1. Introduction – Summary of MNES impact assessment

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## 1.1 EPBC referral 2017/8049

Biosis Pty Ltd was commissioned by Department of Justice and Regulation (DJR) to prepare the preliminary documentation for the following referral under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act): *Youth Justice Redevelopment Project, Cherry Creek, Victoria* (EPBC referral number 2017/8049).

The proposed action was referred to the Australian Government Minister for the Environment on 11 October 2017 (referral 2017/8049) to determine if approval was required under the EPBC Act. A decision on whether the action needs approval was received on 5 January 2018 with the proposed action declared a controlled action. The decision on the assessment approach was received on 13 March 2018 requiring the preparation of preliminary documentation (this document). Attachment A, outlining the Matters of National Environmental Significance (MNES) to be addressed in the preliminary documentation was received on 11 April 2018.

## 1.2 Assessment process for MNES

The total area assessed for the presence of MNES for the Youth Justice Redevelopment Program (YJRP) was 138.6 hectares. The investigation area is shown in Figure 1. NB Please see the attachment for Appendix 2 for all figures. The finalised construction area for the YJRP is 49.06 hectares. The finalised construction area is shown in Figure 2. There are four components to the proposed action: the main Youth Justice Centre (YJC) facility, an access road and enabling works intersection, a services easement, and an allowance for future expansion. Figure 3 shows the individual components of the project. The YJC location was determined by existing planning buffers, restricting the location of the site. The planning buffers are shown in Figure 4. An existing EPBC referral (2008/4221) is also considered as part of this assessment (Figure 5). Overall, significant impacts are only proposed for two MNES: Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP) and Golden Sun Moth (GSM) habitat. These impacts are summarised in Figure 6.

### 1.2.1 Initial biodiversity assessment

An initial biodiversity assessment of the site was completed by Ecology and Heritage Partners Pty Ltd on 30 May 2017 (EHP 2017, Appendix 1). This assessment confirmed the presence of one MNES – Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP) – across most of the area investigated although of variable quality. The report also identified potential habitat for Golden Sun Moth *Synemon plana*, Striped Legless Lizard *Delma impar*, and five threatened flora species. The survey area for this assessment was much larger than the area needed to build the facility to allow for options to avoid and minimise impacts (EHP 2017, Appendix 1).

### 1.2.2 Ancillary infrastructure biodiversity assessment

**Enabling works intersection and access road:** Further biodiversity assessment was undertaken for the access road alignment (Biosis 2017, Appendix 1). This assessment also identified the presence of small patches of NTGVVP, and potential habitat for Golden Sun Moth, Striped Legless Lizard, and five threatened flora species. The assessment report is provided in Appendix 1.

Potential habitat for Golden Sun Moth was also identified in the area affected by the driveway to enable access to the site (referred to as the enabling works intersection). This area is mowed regularly to maintain low biomass and supports high threat weeds such as *Galenia pubescens* var. *pubescens* and Serrated Tussock *Nassella trichotoma* and has been disturbed by traffic from the abutting driveway. It is unlikely to

provide habitat for Striped Legless Lizard or threatened flora so no targeted surveys for these species were undertaken. Recent mowing made it difficult to determine the exact cover of native tussock species but it was estimated at 25%, too low to be considered NTGVPP. Despite the sub-optimal survey conditions, the grassland in the driveway area was clearly of lower quality than grassland in the road reserves to the west of the existing driveway. Grassland to the west of the existing driveway clearly meets the definition of NTGVPP, having very low weed cover and >50% native tussock cover. Mapping of NTGVPP and GSM to the west of the driveway was undertaken to inform this preliminary documentation but has not been reported on separately. Results are displayed in Figure 6 with detail provided in Figure 7.

The engineering design plans for the access road and enabling works intersection are provided in Appendix 5.

**Services easement location:** A final biodiversity assessment was undertaken to determine the best of four potential routes for installing pipelines for water and sewer services delivery (Biosis 2018a). The assessment report is provided in Appendix 1. Each potential route was walked or driven to determine the presence of native vegetation, NTGVPP and GSM habitat. One of the routes was clearly the preferred route being shorter and having no impact to NTGVPP and GSM habitat, excepting timestamped data for the Outer Metropolitan Ring Road (Biosis 2018a, Appendix 1).

After considering several options for overhead power lines, it was determined that an underground electricity supply and telecommunications connection (Telstra cable) could also be located within the same easement as the water and sewer pipelines. No additional impact is therefore required for the power and Telstra connection.

There will be no natural gas connection to the facility.

The engineering design plans for the services easement are provided in Appendix 5.

**Intersection final treatment:** The location of NTGVPP and GSM habitat on either side of the access road was mapped to inform the design of the final treatment of the intersection (Figure 7). The current design plans (Appendix 5) show the plans for the enabling works intersection – this is the intersection that is needed to access the site during construction. The enabling works intersection avoids impacts to NTGVPP and GSM habitat except for the area of the driveway (Figure 7). The final treatment for the intersection is still being negotiated with VicRoads and VicRoads will ultimately determine the final design of the intersection. It is anticipated that every effort will be made to avoid impacts to NTGVPP and GSM habitat, however, should impacts be unavoidable, this referral will be amended.

### 1.2.3 Targeted surveys for MNES

Biosis Pty Ltd was commissioned by DJR to undertake targeted surveys for seven MNES between June 2017 and January 2018. These surveys were undertaken within the proposed footprint for the YJC facility and the access road. No potential habitat was identified in the chosen services easement alignment so targeted surveys were not required. Surveys were undertaken for the following species:

- Button Wrinklewort *Rutidosia leptorhynchoidea*;
- Clover Glycine *Glycine latrobeana*;
- Large-headed Fireweed *Senecio macrocarpus*;
- Matted Flax-lily *Dianella amoena*;
- Spiny Rice-flower *Pimelea spinescens* subsp. *spinescens*;
- Golden Sun Moth *Synemon plana*; and
- Striped Legless Lizard *Delma impa*.

From these assessments, Biosis determined the presence of Golden Sun Moth (GSM) only. No other EPBC Act listed species were identified from the targeted surveys. The surveys were restricted to Melbourne Water land. There is an additional 0.079 hectares of potential GSM habitat in the road reserve affected by the enabling works intersection, which was not included in targeted surveys but given it is contiguous with the access road, GSM was assumed to be present.

#### **1.2.4 Assessment of hydrology**

The site is also within the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar site. The initial feature and level survey was undertaken early in the design process to map the site's topography and tree cover. The feature and level survey informed the design of the stormwater management plan. The stormwater management is provided in Appendix 3. The stormwater management plan was developed to comply with Water Sensitive Urban Design (WSUD) principles. The low flows and volumes are expected to show that the existing flow regime into surrounding areas is not compromised including environmental flow requirements as per Department of Environment, Land, Water and Planning (DELWP).

There is no connection of the YJC facility to the reticulated stormwater system, with all stormwater from buildings and within the perimeter wall retained and treated on site (Appendix 3). The stormwater from the perimeter road will discharge to the open grasslands to the north and south of the site. A number of discharge points will be provided to mirror natural flow patterns (Appendix 3).

Stormwater from the access road will be retarded back to pre-development rural levels before discharging to existing surface and to the swamp to the south (Paul & Belfrages Swamp) or drained to the south, to Princes Freeway (Appendix 3). As the access road is built above the existing surface, small remnant catchments will be discharged by culvert to Paul's swamp (Appendix 3). Discharge from the culverts will be to grassed swales with some sections acting as level spreaders to minimize concentration of stormwater (Appendix 3). The balance of the Access Road catchment discharges towards Little River Road and the Princes Freeway. Wyndham City Council and VicRoads are the responsible authorities for this area and their approvals will be sought (Appendix 3).

### **1.3 Summary of development components and associated impacts on MNES**

As detailed in Table 1 and shown in Figure 3, the construction area for all components of the project has now been finalised to 49.06 hectares. This should be interpreted as the maximum area of soil disturbance and not the maximum area of impact to habitat or ecological communities, since these only occupy a subsection of the construction area (Table 1).

NTGVVP occupies 28.23 hectares or 58% of the construction area. GSM habitat occupies 35.66 hectares or 73% of the construction area. Note that GSM habitat is more extensive than NTGVVP because it comprises both NTGVPP and adjacent grassy areas where there is insufficient cover of native grass to meet the definition of NTGVVP but still provides sufficient food plants to support populations of GSM. Details of impacts to MNES are described in Section 3.

Of the total construction area, the construction area on Melbourne Water land north of Princes Freeway is considered greenfield development, while the construction area of the services easement south of the Princes Freeway occurs within existing pipeline easements or within the road reserves for Old Boundary Road and Little River Road so is considered brownfield.

The finalised greenfield soil disturbance is 36.46 hectares. Thus the greenfield construction area has not changed from the EPBC referral, which referred an area of 36.6 hectares. The disturbance within brownfield areas is 12.60 hectares. See Section 2.8 for details.

NOTE: the term “construction area” has been used to replace the term “impact area” used in previous versions to avoid confusion between significant impacts to MNES and the more general impact of the construction.

**Table 1 Proposed impacts to MNES, Cherry Creek, Victoria.**

| Project component                                                            | Component construction area (ha) | NTGVVP impact (ha) | Golden Sun Moth impact (ha) (native + introduced vegetation) |
|------------------------------------------------------------------------------|----------------------------------|--------------------|--------------------------------------------------------------|
| YJC facility – buildings, carpark, & perimeter fence                         | 23.28                            | 19.16              | 23.28                                                        |
| YJC facility – allowance for future expansion                                | 6.37                             | 5.84               | 6.37                                                         |
| Access road and enabling works intersection                                  | 4.90                             | 1.83               | 4.46                                                         |
| Underground services easement for water, sewer, electricity & Telstra cable* | 14.51                            | 1.40               | 1.55                                                         |
| Total                                                                        | 49.06                            | 28.23              | 35.66                                                        |

\*formerly referred to as “ancillary infrastructure” and now incorporating the boundaries of the allowance for future expansion, Figure 3

## 2. Description of the Proposed Action

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### *Directions from Attachment A*

*All construction, operational and (if relevant) decommissioning components of the action should be described in detail, including the precise location of all works to be undertaken (including plans and maps) and elements of the action that may have impacts on relevant MNES. The description of the action must also include details of how the works are to be undertaken (including stages of development and their timing) and design parameters for those aspects of the structures or elements of the action that may have relevant impacts.*

*Please ensure the information you provide includes the following:*

- a) The location, boundaries and size (in hectares) of the disturbance footprint and of any adjoining areas which may be indirectly impacted by the proposal, including nearby habitat; and areas for stockpiles, vehicle access and associated activities.*
- b) The location, boundaries and size (in hectares) of the finalised ancillary infrastructure options for the proposed action, inclusive of any works outside the main impact area, and inclusive of adjoining areas which may be indirectly impacted by the proposal.*
- c) For pre-construction, construction and operation phases, include:
  - i. The proposed activities associated with each phase.*
  - ii. The anticipated timing and duration (including start and completion dates) of each phase.*
  - d) A description of the operational requirements of the action including any anticipated maintenance works, inclusive of ancillary infrastructure maintenance.**
- e) Any feasible alternatives to the action to the extent reasonably practicable, including the alternative of taking no action, a comparative description of the impacts of each alternative on MNES. Sufficient detail must be provided to make clear why any alternative is preferred to another. Short, medium and long-term advantages and disadvantages of the options should be discussed.*

### 2.1 Summary of the action

The proposed action will construct a new YJC facility with 224 beds for remand and sentenced clients, a 12 bed mental health unit and an intensive supervision unit of at least eight beds, and will generate benefits to the local economy through creation of jobs and increased demand for local services. The proposed action also allows for future expansion of the facility within the existing site. The proposed action will also include the construction of an access road (interim treatment and final treatment) to link the proposed YJC to the existing roads network and an enabling works intersection to connect the access road to Little River Road during construction. The final treatment for the intersection will be determined by VicRoads but the final design was yet to be finalised at the time of writing so cannot be referred as yet. The final treatment for the intersection is not anticipated to exceed the impact of the enabling works intersection.

At the time of the referral in 2017, the requirements and route for ancillary services to supply the facility was yet to be determined but has now been finalised (Figure 2, Figure 3, Figure 5, Appendix 5). An underground pipeline will run to the east of the facility to supply potable water from an existing mains and connect a sewer pipe to the existing Western Treatment Plant. Both of these existing connections are south of the Princes Freeway and will require horizontal directional drilling under the freeway (Figure 5). An underground electricity supply cable and an underground Telstra cable will be connected to the facility within the same easement to the east of the site (Appendix 5). The facility will be connected to power and telecommunications connections already existing within the Princes Freeway road reserve (Appendix 5).

The detailed design drawings for the services easement, access road and enabling works intersection are provided in Appendix 5. It is not possible to provide detailed design drawings of the facility itself due to the security implications of having such information on public display.

## 2.2 Why is the facility needed?

The construction of a new youth justice centre is a key initiative of the Victorian Government's program to create fit-for-purpose custodial facilities for children and young people that will improve community safety and play a key role in the rehabilitation of children and young people and children who are offending.

Following a number of reviews into the existing youth justice facilities at Parkville and Malmsbury, the government determined that the best option to respond to the needs of the youth justice system was to establish a new, purpose-built centre.

In February 2017, the Victorian Government announced that it would build a new youth justice centre. The new facility will be built in Cherry Creek and forms part of a significant program of upgrades and improvements to existing youth justice infrastructure to ensure the safety of the wider community, youth justice staff and children and young people in contact with the youth justice system.

Building a new centre:

- allows for the delivery of infrastructure that best supports the required operating model;
- is the fastest option to address the critical issues facing the youth justice system, with an estimated delivery timeframe of just over three years from funding;
- has comparatively less risk than redeveloping Parkville, given the challenges of maintaining operations during construction; and
- is the most cost effective or 'value for money' option.

In considering the case for such a new centre, it was determined that the new centre needed to:

- meet the expected demand for services over time in response to Government reforms;
- address the requirement for enhanced safety and security; and
- deliver rehabilitative services for children and young people.

Findings from the review by Neil Comrie into the Parkville Youth Justice Centre and Professor James Ogloff and Penny Armytage's review on Victoria's youth justice system will be incorporated into the design.

The new youth justice centre at Cherry Creek forms part of the Victorian Government's agenda to modernise and rebuild the youth justice system maintaining community safety. The Youth Justice Precinct Redevelopment Business Case was developed by the Victorian Government to address current infrastructure and capacity issues at the existing Parkville facility (Appendix 1). The business case sought to evaluate options to address this issue and recommended an investment in a new youth justice facility located at the preferred site of Hoppers Lane South, Werribee South. See *Victoria's new youth justice facility: Business Case Overview* was released to the public in 2017 (Appendix 1).

## 2.3 Site selection – how was the Cherry Creek location chosen?

A range of options were carefully assessed as part of the business case process, including redeveloping the existing Parkville facility, building a new facility on a preferred greenfield site and a combination of both these options. After assessment, it was determined that a contemporary standard secure youth justice facility should be built on a greenfield site to replace the existing Parkville facility.

After considering the business case and assessing 16 potential sites, the Victorian Government announced plans in February 2017 to build a youth justice centre near Werribee, to the west of Melbourne. The business case is provided in Appendix 1. After consulting with Wyndham City Council and the community, a site between Werribee and Little River, currently vacant land and owned by Melbourne Water was chosen.

The site was selected following consideration of a number of possible locations which were assessed against key criteria including; the size and shape of the land, its proximity to the CBD including court facilities, its accessibility for staff and families, its distance from residential areas and the ability to purchase the land promptly and get started on construction.

This first site chosen for the new facility had no environmental encumbrances, consisting almost entirely of introduced vegetation within an urban area (Appendix 1). In response to feedback from the Wyndham community, the government committed to examining alternative locations for the new youth justice centre within Wyndham. The government listened to the Wyndham community's concerns about the original preferred location for the new youth justice centre and delivered on a commitment to examine alternative sites within Wyndham.

The Cherry Creek site was identified and assessed as suitable based on the same detailed business case criteria applied to the assessment of the initial Hoppers Lane South site. It was chosen because it is located a considerable distance (10 kilometres) from existing urban development, is secured from potential future planning constraints by existing buffer and was the option preferred by the local community (Figure 4). The current proposed site is the second choice from an environmental impacts perspective; however, all attempts to avoid and minimise impacts have been undertaken.

The size and location of the site was defined by buffer zones associated with nearby quarries (existing and planned) to the north-east and west and a broiler farm to the north (Figure 4). It is further defined by the Public Acquisition Overlay for the future Outer Metropolitan Ring Road (OMR) to the east, the Melbourne-Geelong railway line to the north, and the Melbourne-Geelong section of the Princes Freeway to the south (Figure 4). Within the site, the siting of the facility was determined (Section 2.5).

The proposed site is a greenfield site currently forming part of the landholding for the Western Treatment Plant (WTP). The proposed site is not currently included in any operational requirements for the WTP and is currently managed as a paddock with light grazing and some weed control.

The site is within the locality known as Cherry Creek, approximately 10 km south-west of the Werribee town centre and approximately 40 km south-west of Melbourne, Victoria (Figure 2). The YJC facility will be located on freehold land within the larger WTP landholding, but separated from the operational areas of the WTP by the Princes Freeway, at a distance of 4 kilometres from the main treatment areas (Figure 2). The land will be purchased by DJR from Melbourne Water, the government-owned corporation that controls the land. The title plan for the land purchase is shown in Appendix 2.

## **2.4 Description of the YJC facility**

The new Youth Justice facility is a school, mental health and rehabilitation facility within a highly secure and safe environment. The facility will support and promote youth treatment and rehabilitation in a humane, respectful, culturally appropriate and normative (residential style and scale) environment in a campus setting. The campus will promote pro-social interaction and communication, connectedness to the land, abundant landscaping and greenery, opportunities for active and passive activities and a variety of experiences and events as one traverses through it.

The buildings within the campus will provide abundant natural light, attractive building materials, furnishings and finishes, effective acoustic treatments and a normative and therapeutic overall environment for the youth and staff, as well as the visiting public and neighbouring community.

The Youth Justice Redevelopment Project scope includes the construction of:

- 224 Bed Facility
- 12 Mental Health beds

- 16 Orientation Beds
- 2 Patient Rooms.

The building footprint within the development is approx. 14 hectares provided with the main facilities described in Table 2 below.

**Table 2 Buildings and facilities of the YJC facility.**

| Building Name                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Entry Gatehouse Building &amp; Campus Administration</b> | <p>The Facility Gatehouse Entry will serve as the point of access to the YJRP for all facility staff and visitors.</p> <p>The Gatehouse Entry will be accessible 24 hours a day for staff, during normal business hours for professional visits, and as scheduled for residents' visitation. Ingress and egress is monitored by Security Staff stationed with a direct line of sight to the entry General Lobby. All residents released from the YJRP will exit through the Public Lobby.</p> <p>The Campus Administration facilities will provide the functional spaces needed for the day-to-day operations and management of facility personnel and residents.</p> |
| <b>Facility Support</b>                                     | <p>The Facility Services component functions include the service and maintenance of all YJRP facilities and infrastructure.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Visits Centre</b>                                        | <p>The Visits Centre includes a variety of spaces that are intended to facilitate the regular communication between youth and their families (or other key people in their live), community members and professional visitors.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Staff Centre &amp; Operational Management Centre</b>     | <p>The Staff Centre comprises the recreational and training facilities for use by all staff on campus.</p> <p>The Operational Management Centre is the primary hub accommodating those functions needed to maintain a secure and controlled environment throughout the Campus at all times. As such, it should be centrally located with views to major movement zones if possible.</p>                                                                                                                                                                                                                                                                               |
| <b>Cultural Centre</b>                                      | <p>The Cultural Centre offers a variety of spaces for the provision of spiritually and culturally specific services, programmes and activities to young people from culturally and linguistically diverse backgrounds and a range of faiths, designed to ensure cultural safety and the promotion of awareness and respect.</p>                                                                                                                                                                                                                                                                                                                                       |
| <b>Food Services &amp; Laundry Services</b>                 | <p>The Food Preparation and Dining facility includes meal preparation and distribution for residents as well as a centralised dining area and café for staff.</p> <p>The Laundry Services component is responsible for the storage, cleaning and distribution of linen and bedding to the residents.</p>                                                                                                                                                                                                                                                                                                                                                              |
| <b>Admissions &amp; Orientation</b>                         | <p>The mission of the Admissions, Transports and Release area is to receive, discharge and temporarily release youth remanded and committed to the care of Youth Justice Custodial Services.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Health Centre</b>                                        | <p>The Health Centre offers on-site preventive, routine, and emergency health care to youths. Qualified doctors, nurses and other allied contracted health professionals will provide on-site health care along with mental health nurses, therapists, a part-time psychiatrist, and a part-time psychologist.</p>                                                                                                                                                                                                                                                                                                                                                    |
| <b>Accommodations</b>                                       | <p>The Accommodation facilities serve as the living quarters for the youth. The new YJRP will provide DJR a total of 244 beds, divided into three main communities: Closed Male Community, Open Male Community and a Female Community.</p>                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Recreation &amp; Education Centre (Youth Programs)</b>   | <p>This functional component will provide youth with spaces to participate in a structured day of rehabilitation, life skills programmes, and recreational time that help reduce idleness while maximising the constructive engagement of youth in meaningful activities supporting self-confidence, personal development and growth.</p>                                                                                                                                                                                                                                                                                                                             |

|                                |                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | The Education Centre will accommodate academic and vocational mandated services. Education services will be provided by Parkville College, a registered specialist school, catered for students with disabilities, as well as social, emotional, learning and behavioural difficulties. The educational curriculum will follow a model designed to lead to either a college-bound or employment outcome. |
| <b>Services infrastructure</b> | As a greenfield site, the YJC facility will need an electricity substation, sewer pump, potable water connection, stormwater capture, car parking, access road, and security infrastructure, to enable the operations of the facility.                                                                                                                                                                   |

The size of the development is driven by the wide range of specialised programs and services delivered in the facility, and the age- and classification-based separation of youth cohorts required by legislation.

Young people detained in a Youth Justice facility are entitled to have their developmental needs catered for and to have reasonable efforts made to meet their medical, religious and cultural needs. Young people will be provided with opportunities for success and encouraged to participate in education, programs for self-improvement, welfare, recreational activities and other forms of assistance.

The Children, Youth and Families Act requires that people aged 10-14 years must be separated in custody from those aged 15-17 year olds. Further, it requires the separate accommodation of remandees and sentenced young people.

The Sentencing Act 1991 includes a 'dual track' sentencing option for particularly vulnerable young adults aged 18-21, which allows adult courts to sentence these young adults to custody in Youth Justice facilities as an alternative option to adult prison. Therefore, youth justice facilities must separate 12 cohorts (male and female):

- Young people aged 10-14 years on remand
- Young people aged 10-14 years who have been sentenced
- Young people aged 15-17 years on remand
- Young people aged 15-17 years who have been sentenced
- Young people aged 18+ on remand under dual track
- Young people aged 18+ who have been sentenced under dual track.

These separation requirements require multiple, flexible accommodation units and outside spaces, roads and pathways to facilitate the movement of cohorts about the facility.

## 2.5 Facility location – how was the built environment located on the site?

The land on which the YJC facility will be built will be acquired by DJR from the current landholder Melbourne Water. The size and location of the acquired land parcel were constrained by planning buffers around existing industrial areas, the Princes Freeway and the proposed Outer Metropolitan Ring Road. This constrained the potential location of the YJC facility to an area north of Belfrage's Swamp and east of the alignment for the OMR. A 22 metre strip of land will also be acquired for the access road and the location of this was constrained by Belfrage's Swamp and an existing high pressure gas pipeline easement. The parcel being acquired by DJR is shown on the land title provided in Appendix 2 and the planning constraints are shown in Figure 4.

The size of the facility was determined from the requirements of the YJC facility as described above. The facility was then located in the southern end of the proposed site. The location was informed by the initial ecological assessment that recommended that the grassland in the southern half of the site was of lower

quality than the northern half so that the southern location was preferred (EHP 2017). Native vegetation proposed for removal as a result of the YJC facility development totals 28.46 hectares (as calculated under state guidelines). Native vegetation to be retained in the northern section totals 32.45 hectares, such that 53% of native vegetation within the site is being retained.

Negotiations with Melbourne Water were undertaken to determine the best route for the enabling works access road and final treatment access road. Melbourne Water advised that internal tracks traversing paddocks to the south of the proposed site were not to be used during construction or in the final treatment to prevent impacts to Paul and Belfrages Swamps. Thus the access road was located along an existing gas pipeline easement to the west of the site (Figure 2, Appendix 5).

## 2.6 Services easement siting – comparison of potential alignments

A services easement is required to supply the YJC facility with a sewer and potable water connection to existing services within the Western Treatment plant south of Princes Freeway as well as electricity supply and telecommunications connection in the form of Telstra cable to existing connections within the Princes Freeway. No natural gas is being connected to the site. The width of the easement, including allowance for construction impacts, is 20 metres.

The process for determining the alignment with the lowest environmental impact is described in Biosis (2018a) (Appendix 1). This process compared the impacts of four potential routes. The relative impacts of each route were related to the location and length of the route so that the shortest route and that avoided areas of native vegetation was selected. The entire length of the easement was traversed by Biosis ecologists and assessed for the presence of MNES. All calculations of the final impacts and construction area in this document have been calculated on the finalised route and 20 metre width for the easement.

Once the final alignment was selected, a site walkover was undertaken with Aurecon engineers, Melbourne Water engineers and Biosis to discuss the environmental and engineering constraints of the services easement. These discussions were incorporated into the construction methods for the pipeline.

Impacts of the services easement:

- Figure 3 shows that the services easement starts in the east, within the YJC facility. The power/Telstra cable exists the site along the southern boundary of the YJC facility and the water/sewer pipes exit the site along the north of the YJC facility. This delineates the boundary of the allowance for future expansion so that future works would not impact the services. Thus the services easement within YJC facility area impacts 1.40 hectares of NTGVVP and 1.55 hectares of GSM (Figure 3).
- Between the YJC facility and the Princes Freeway, the services easement traverses an area of weedy grassland that is considered GSM habitat but the weed cover was too high for the vegetation to meet the condition thresholds for NTGVVP (Biosis 2018a). However, this area is within the MSA so impacts to MNES will be covered by the BCS (DEPI 2013b). Any impacts to MNES associated with the services easement in this area are compensated for under the BCS, calculated using the MSA's "timestamped" data (Section 6.6.1, Figure 10, DEPI 2013b). The timestamped data is shown in Figure 10. The services easement crosses a drainage line which is a tributary of Lollypop Creek. This is a low lying area within the paddock that is ephemerally damp but does not support permanent still or running water (Photo 1).
- South of Princes Freeway, the services easement traverses Melbourne Water land within the Western Treatment Plan but does not impact on MNES as described below:

- The services easement is adjacent to an existing large pipeline easement that supports predominantly introduced (i.e. weedy) vegetation.
- The existing large pipeline easement and the alignment traversed by the additional YJRP services easement has been highly modified due to past use for agriculture and supports predominantly introduced vegetation in the form of crops or weedy areas that are of limited ecological value.
- The services easement crosses a drainage line, which is a named waterway, Cherry Creek (Photo 2). This drainage line is already crossed by the existing large pipeline. It can be described as a low lying area within a paddock and ephemerally damp but does not support permanent still or running water (Photo 2).
- The alignment crosses Lollypop Creek where it travels along Old Boundary Road. Old Boundary Road crosses Lollypop Creek by way of a small one lane bridge (Photo 3). Lollypop Creek at the time of survey was also dry and did not contain permanent water at that location and the vegetation was dominated by weeds and planted non-native woody species (Photo 4).
- There is one remnant scattered tree along the alignment, a River Red-gum *Eucalyptus camaldulensis* that is located in Lollypop Creek, next to the bridge crossing (Photo 3). While the pipeline most likely will be directionally drilled under the creek at this location, it is unknown if drilling would encroach on the Tree Protection Zone for this tree, so it was assumed to be lost for the purposes of calculating offsets at the state level.
- Where the services easement runs along Old Boundary Road, the roadside vegetation is predominantly introduced and the tree belts consist of planted non-native eucalypts, largely Sugar gums *Eucalyptus cladocalyx*.

The services easement will cross from north to south of Princes Freeway using directional drilling under the road surface. Permission for works to drill under Princes Freeway has been granted by the statutory authority, VicRoads. Melbourne Water has granted permission for the services easement to traverse Melbourne Water land.

## **2.7 Allowance for future expansion**

The remaining land not incorporated into the building footprint of the YJC facility at this stage of the development has been reserved to allow a 56 bed future expansion of the facility. This would be a 23% increase in capacity compared to the current design, requiring additional land on which to place these buildings. The need for a new EPBC referral will be assessed prior to any future expansion.

## 2.8 Finalised construction area

The total area investigated for environmental values was 138.6 hectares. As detailed in Table 4 and shown in Figure 3, the construction area for all components of the project has now been finalised to 49.06 hectares. This should be interpreted as the maximum area of soil disturbance and not the maximum area of impact to habitat or ecological communities, which only occupy a subsection of the 49.06 hectares. The construction area north of Princes Freeway is considered greenfield development where it is within Melbourne Water land. The construction area south of the Princes Freeway occurring within existing pipeline easements or within the road reserve for Old Boundary Road within a highly modified environment and so can be considered brownfield. The enabling works intersection also occurs within an existing road reserve on Little River Road, abutting an existing driveway. The greenfield soil disturbance within the Ramsar site is 36.46 hectares, and disturbance within brownfield areas is 12.60 hectares. Thus the construction area for greenfield development has not changed from the EPBC referral, which referred an area of 36.6 hectares. The impacts to MNES are described in Section 3.

NOTE: the term “construction area” has been used to replace the term “impact area” used in previous versions to avoid confusion between significant impacts to MNES and the more general impact of the construction.

**Table 3 Proposed construction area for the YJC facility, Cherry Creek, Victoria.**

| Project component                                                                                                                                                                                                        | Component footprint (ha) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| YJC facility – buildings, carpark, & perimeter fence                                                                                                                                                                     | 23.28                    |
| YJC facility – allowance for future expansion                                                                                                                                                                            | 6.37                     |
| Access road and enabling works intersection                                                                                                                                                                              | 4.90                     |
| Underground services easement for water, sewer, electricity & Telstra cable<br>(formerly referred to as “ancillary infrastructure” and now incorporating the boundaries of the allowance for future expansion, Figure 3) | 14.51                    |
| <b>Total construction area (Figure 3)</b>                                                                                                                                                                                | <b>49.06</b>             |

  

| Development type                          | Footprint (ha) |
|-------------------------------------------|----------------|
| Greenfield construction area              | 36.46          |
| Brownfield construction area              | 12.60          |
| <b>Total construction area (Figure 2)</b> | <b>49.06</b>   |

  

| Investigation area                        | Footprint (ha) |
|-------------------------------------------|----------------|
| <b>Total area investigated (Figure 1)</b> | <b>138.6</b>   |

## 2.9 Compliance with EPBC referral 2008/4221

The services easement will traverse Melbourne Water land and land acquired from Melbourne Water. This land is subject to an existing EPBC referral (Referral number 2008/4221). One of the key biodiversity protection measures in the approval conditions for EPBC referral 2008/4221 is the protection and maintenance of 30 metre conservation buffers on all drainage lines and creeks within the Melbourne Water land holding. A summary of any works within the 30 metre buffers are provided in Table 5 below, with all works closely monitored to minimise impacts as described below. Figure 5 shows the locations of each Location listed in the table.

**Table 4 Proposed works and their relation to 30 m conservations buffers, Cherry Creek, Victoria.**

| Location<br>(see<br>Figure 5) | Location description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Proposed works                                                                                                                                                                                   | Mitigation measures                                                                                                                                                                                         |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.                            | <b>Drainage line:</b> this is a low point in a paddock with no permanent water.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>Nil</li> </ul>                                                                                                                                            | <ul style="list-style-type: none"> <li>Avoid – 30 m buffer has been excluded from the footprint for the facility</li> </ul>                                                                                 |
| 2.                            | <b>Drainage line:</b> this is a low point in a paddock with no permanent water and dominated by introduced vegetation. The 30 m buffer area is part of the existing unploughed paddock with scattered occurrences of native grasses but is predominantly introduced pasture and weed species at this location. Photo 1 below.                                                                                                                                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>Open cut trench + fill</li> </ul>                                                                                                                         | <ul style="list-style-type: none"> <li>CSEMP to manage potential sediment and downstream impacts</li> </ul>                                                                                                 |
| 3.                            | <b>Drainage line:</b> this is a low point between two crop paddocks with no permanent water and dominated by introduced vegetation, largely Water Couch <i>Paspalum distichum</i> . The 30 m buffer area is dominated by introduced pasture species Toowoomba Canary-grass <i>Phalaris aquatic</i> and the surrounding paddocks have been cropped up until the edge of the buffer. Photo 2 below.                                                                                                                                                                                                                                                      | <ul style="list-style-type: none"> <li>Open cut trench + fill</li> </ul>                                                                                                                         | <ul style="list-style-type: none"> <li>CSEMP to manage potential sediment and downstream impacts</li> </ul>                                                                                                 |
| 4.                            | <b>Lollypop Creek:</b> the creek is ephemeral at the crossing point and was dry at the time of the assessment. The vegetation in the creekline is predominantly introduced vegetation both herbaceous vegetation and planted introduced tree species. The creekbed has been modified in the past evidenced by concrete in the creekbed and the existing one lane bridge. See Photo 3 and Photo 4 below. Where the crossing of Lollypop Creek is proposed, most of the buffer is occupied by the existing road and culvert. One native River Red-gum <i>Eucalyptus camaldulensis</i> is present in the creekbed, adjacent to the bridge. Photo 3 below. | <ul style="list-style-type: none"> <li>Open cut trench + fill within Old Boundary Road</li> <li>Horizontal directional drilling under Lollypop Creek at the location shown in Photo 3</li> </ul> | <ul style="list-style-type: none"> <li>Avoid impacts to beds and banks of Lollypop Creek with horizontal directional drilling</li> <li>CSEMP to manage sediment and potential downstream impacts</li> </ul> |



**Photo 1** Looking west towards YJC facility from near Princes Freeway. Drainage line in middle ground 265 metres from photo location. (Location 2 on Figure 5).



**Photo 2** Drainage line (Location 3 on Figure 5).



**Photo 3** Lollypop Creek showing existing bridge crossing. Note the creek is currently dry and will be drilled under as a first option (Location 4 on Figure 5).



**Photo 4** Lollypop Creek at existing bridge crossing showing old modifications to creekbed, view south from bridge (Location 4 on Figure 5).

**Table 5 GPS Points of locations along the proposed works, Cherry Creek, Victoria.**

| Point     | Latitude         | Longitude       |
|-----------|------------------|-----------------|
| <b>1</b>  | -37.953954610471 | 144.57511545343 |
| <b>2</b>  | -37.953886932489 | 144.57502962274 |
| <b>3</b>  | -37.953819254446 | 144.57502962274 |
| <b>4</b>  | -37.952059603419 | 144.55923677606 |
| <b>5</b>  | -37.966473964214 | 144.55640436334 |
| <b>6</b>  | -37.966541630597 | 144.5559752099  |
| <b>7</b>  | -37.951518163854 | 144.5588934533  |
| <b>8</b>  | -37.951788884136 | 144.5618975274  |
| <b>9</b>  | -37.948946271425 | 144.56241251153 |
| <b>10</b> | -37.950164547483 | 144.57408548516 |
| <b>11</b> | -37.952398001121 | 144.57511545343 |
| <b>12</b> | -37.953954610471 | 144.57511545343 |

## 2.10 Summary of proposed construction activities

All proposed construction activities will occur within the construction area. The integrity of the construction area will be managed via an Environmental Management Framework (EMF) and Construction Site Environmental Management Plans (CSEMP) to ensure no impacts occur outside the construction area.

The proposed YJC facility has been designed by HDR (the Principal Consultant). The design of the facility works within the environment constraints of the site to avoid and minimise impacts to environmental values.

The internal DJR document *Sustainability Guidelines for Capital Works* is also informing the design of the development (Appendix 6).

The John Holland Group Pty Ltd has recently been appointed as the Managing Contractor for the construction of the facility. The comprehensive construction program is being finalised currently in consultation with all stakeholders and consultants.

The key construction activities will be:

- Construction of a paved road, maximum width of construction impact including machinery movements, drainage and batters is 22 m. The typical cross section of the access road is shown on page 12 of the Stormwater Management Plan (Appendix 3). The integrity of the 22 m width will be ensured by temporary fencing to ensure works stay within the DJR landholding and do not encroach on Melbourne Water land on either side.
- Construction of an enabling works intersection to allow access to the site via the access road. This will also be 22 m wide and be sufficient to allow access to all required machinery. The final treatment of the intersection will be the responsibility of VicRoads.
- Construction of in-ground services using trenching. The maximum width of all construction impacts including excavator access, trenches, supply track and spoil piles will be 20 m. Pipelines for sewer and water will be installed using horizontal directional drilling under the following sensitive areas: Princes Freeway and Lollypop Creek.
- Construction of the main YJC facility within the defined construction area. The construction area will be fenced to ensure no impacts to surrounding areas. Construction of the main YJC facility will involve the following activities:
  - Construction of stormwater management infrastructure according to Stormwater Management Plan (Appendix 3).
  - Construction of carpark, perimeter security fencing, gates and gatehouse.
  - Construction of buildings for accommodation, education, health, administration, kitchens, visits, recreation and a cultural centre.
  - Commissioning of the facility including installing security systems.
  - All stockpiles, spoil piles, plant and equipment, temporary site fencing and hoarding, site offices, hardstand and laydown areas, access and egress paths and roads, and temporary car parking will be retained within the construction area.

Note that the proposed building footprint is smaller than the construction area for the YJC (Figure 3). This is to allow for future expansion of the facility. Thus the proponent has tried as much as possible to forecast all future impacts of the proposed facility.

Detailed design plans of the facility are not provided due to the sensitive nature of the facility and to ensure that security of the facility is not compromised by the public display of such documents.

## 2.11 Construction activities

Draft construction management plans detail the following key construction activities:

### 2.11.1 Pre-design testing (underway)

The following investigations have been completed or are nearing completion to inform design and construction activities:

- Geotechnical testing.
- Feature and Level survey.
- Cultural heritage investigations.

### 2.11.2 Pre-construction preparatory building and works (late-2018)

The following activities will be undertaken prior to construction of the main facility:

- Service location identification.
- Establishment and construction of temporary services to the site.
- Construction of unpaved access road and enabling works intersection from Little River Road to the construction site, including removal of top soil and native and non-native vegetation.
- Site establishment works: temporary site fencing and hoarding, site offices, hardstand and laydown areas, access and egress paths and roads, and temporary car parking.
- Establishment of environment and traffic controls: sediment traps, designation of 'no go' zones, and erection of protective fencing around vegetation and cultural heritage areas to be retained and buffer to tributary to Lollypop Creek.
- Mitigation works required by the Cultural Heritage Management Plan for the construction area.

### 2.11.3 Core works for services easement (late-2018)

- **Areas outside conservation buffers:** For the majority of the services easement, "cut and fill" trenching to a maximum width of impact of 20 m will be used to install the services below ground. The proposed sewer arrangement is for a rising main which remains shallow to the surface. Generally the invert level of the sewer depth is up to 1.1 m. It is proposed to use open trench excavation in this instance. Open trench excavation will involve excavation of the ground at least 0.4 m below the invert level. The excavation can be carried out in the form of supported cuts or in the form of unsupported batter slopes. The maximum excavation width allowed for is 5 m for each service. A supply track of 3 m and spoil stockpile of 6m has been allowed for, with a maximum construction area of 20 m to allow the installation of four different services in the trench (water, sewer, power and Telstra) north of the Princes Freeway. A 20 m easement has also been allowed for south of Princes Freeway to allow for micro-siting of water and sewer pipes to avoid existing services.
- **Buffers to drainage lines:** There are two drainage lines that will be traversed by the services easement, noting that the services easement will cross perpendicular to the direction of drainage. Both drainage lines occurs as low-lying areas within paddocks and have been subject to agricultural disturbance in the form of grazing of high stocking numbers of sheep and cattle for the drainage line north of Princes Freeway and cropping (runoff of irrigation water, fertiliser and pesticide) for the

drainage line south of Prince Freeway. Therefore these are not considered sensitive areas and the services easement will be installed using cut and fill trenching as described above. It is anticipated that any impacts during construction will be of short duration and involve soil disturbance to a maximum of 20 m width within the 30 m buffer (=0.045 ha) within an already disturbed catchment. The works will be undertaken during dry conditions to minimise disturbance to surrounding areas by machinery movements and to minimise erosion and sedimentation.

- **Creekline at Lollypop Creek:** the services easement crosses Lollypop Creek at Old Boundary Road within the Western Treatment Plant, south of Princes Freeway. Within the buffer on either side of the creek, the services easement will be installed using cut and fill trenching as described above. Again, while this is within the conservation buffer, the area of excavation within the buffer will be within the existing gravel road or adjoining roadsides, both areas that have already been disturbed by road grading, road fill, drainage and planting of non-native trees. At the point where the service easement crosses the creek channel, the first option will be to use horizontal directional drilling to pass the pipeline under the creek bed, minimising disturbance to traffic movements to enable construction. Should drilling encounter problems (i.e. the underlying basalt geology does not allow drilling to proceed), the pipeline will be installed via a “pipe bridge”, a metal structure hoisted into place to support the pipe across the creek. It is anticipated that this will have no more footprint within the buffer than the existing bridge. Geotechnical testing is being undertaken to determine the depth of the basalt geology and the feasibility of horizontal drilling.

#### **2.11.4 Core works for YJC facility (2019)**

The following activities will be undertaken to construct the YJC facility as described in Section 2.4:

- Bulk earth works and site levelling, including removal of top soil and removal of native and non-native vegetation to the minimum extent necessary.
- Construction of permanent sealed car parking.
- Construction of all building footings and ground slabs. Two storey construction methods for Management facilities throughout the site have been used to reduce footprint on the site.
- Construction of permanent perimeter wall.
- Construction of the main Youth Justice Centre buildings, and internal roads, and landscaping.

#### **2.11.5 Core works for access road final treatment (late-2019)**

The final treatment for the access road will include:

- Sealing of the road surface, line marking and signage.
- Construction of stormwater capture infrastructure (see Appendix 3).
- Street tree plantings.

#### **2.11.6 Facility commissioning and construction site decommissioning (2020)**

- Decommissioning of the construction site as determined by the CSEMP.
- Commissioning and handover of facility.
- Issue of certificate of practical completion and building occupancy permits.

#### **2.11.7 Minimising weed spread during and post- construction**

There are three main weeds issues associated with construction and post-construction maintenance of the facility. These are described below along with their mitigation measures.

Introduction of new weeds during construction: new weeds may be brought on to the construction site via plant and equipment and on clothing and boots. The Construction Site Environmental Management Plan will ensure that weed hygiene protocols are implemented and maintained throughout the construction process. The managing contractor has been made aware of previous instances of weed introductions onto Melbourne Water land by construction works in the past and that this must be avoided.

Weed spread during construction: the weed loads at the site are already high and include noxious weeds such as Chilean Needle-grass *Nassella neesiana* and Serrated Tussock *Nassella trichotoma*. There is a risk that these weeds are spread during construction either within the site or moved offsite if soil is removed. The managing contractor has been instructed to ensure as much as possible that all soil remains on the site. All soil to be removed should be scraped off at the start of construction and stockpiled to minimise the spread of weed seeds as vehicles and equipment move throughout the site. Any soil that is removed from the site, needs to be done so in compliance with the *Catchment and Land Protection Act 1994*.

Spread of weeds from landscaping: landscaping of the site is a potential source of new environmental weeds to surrounding grassland areas through the introduction of horticultural species not native to the ecological community surrounding the site. Noting of course, that the site already has a high weed load due to existing agricultural uses. Weeds can also be introduced accidentally when topsoil, fill or plants are brought onto the site. The introduction of environmental weeds will be minimised by the use of locally indigenous species in landscape plantings and the incorporation as much as possible of any retained areas of native grassland into outdoor areas. The introduction of weeds will also be minimised by the recycling of excavated rock for fill and landscaping within the site, reducing the need to bring soil or rock on to the site. The site is also surrounded by a concrete perimeter wall that will reduce seed spread out of or into the site.

## 2.12 Operational requirements

There are no further impacts associated with the operational aspects of the facility. As stated above, all future possible expansions of the facility are being forecast at this time so that avoid, minimise and offset strategies are effective as possible. Native vegetation supported by the allowance for future expansion will be managed by Melbourne Water in a manner consistent with the current Melbourne Water Land Use Strategy until such time as expansion is required.

Operational requirements of the facility will be those associated with maintenance of perimeter fencing, buildings and facilities, landscaping, and the access road. The landscape architecture of the facility will respond to the natural and cultural heritage of the site by retaining native vegetation where possible and using native species in landscaping plantings. Landscaping will also re-use basalt rocks extracted from the site during construction. Maintenance of the facility will be the responsibility of the YJC facility within the YJC land holding.

Services infrastructure will be maintained by the responsible authority (sewer, water, electricity & Telstra cable). The services easement will remain under the ownership of Melbourne Water and managed according to the current Melbourne Water Land Use Strategy.

The intersection final treatment will be maintained by VicRoads according to their road maintenance schedule.

## 2.13 Decommissioning requirements

Not relevant. Given the rapid population growth in Victoria, decommissioning of the facility is not a circumstance that is foreseen at the time. Instead, it is more likely that the facility will expand over time as mentioned above. Decommissioning of the construction site will require the removal of all construction

equipment and materials in compliance with the Construction Site Environmental Management Plan. The enabling works intersection will be decommissioned once VicRoads advises that they have decided on a final treatment for the intersection.

## **2.14 Feasible alternatives**

### **2.14.1 Site selection**

On 15 March 2017, the Victorian Government confirmed that a new youth justice centre would be built west of Werribee, in the vicinity of Cherry Creek. This followed a commitment by the Government to examine alternative sites within Wyndham for the new centre in response to feedback from the Wyndham community about the original preferred site. The Cherry Creek site was identified in close collaboration with Wyndham City Council and assessed as suitable based on detailed business case criteria. This includes the size and shape of the land, its proximity to the CBD including court facilities, its accessibility for staff and families, its distance from residential areas and the ability to purchase the land promptly and get started on construction.

The short to medium term advantage of the current site selection is that the site is socially acceptable reducing strain on surrounding communities and facilitating the planning process. The long term advantages of the chosen site is that it is protected from urban encroachment by existing planning buffers around industrial uses. As a greenfield site, there is also ample opportunity to make the facility fit-for-purpose and to allow room for future expansion, which may not have been possible in a brownfield location. The disadvantage of the site both in the short and long term is that the site has existing environmental values that will be impacted, which was not the case for the first site chosen. However, the natural setting and the incorporation of native landscaping and cultural heritage site into the facility will be beneficial to those held in the facility.

Due to the need to be both within Melbourne and away from residential areas, there are few feasible alternative sites for the proposed development. Additionally, the proposed site is surrounded by buffer areas to other heavy industries preventing residential development in close proximity to the facility, suggesting that the ongoing operations of the facility are unlikely to impact the community into the future (Figure 4). It would be difficult to impossible to find another such site.

By taking no action, 28.46 ha of native vegetation, of which 28.23 ha is NTGWV, and 35.7 ha of GSM habitat would remain within the Western Treatment Plant. However, by taking no action, the YJC could not be built and would require a third re-location of the facility. Any other suitable greenfield site in the west of Melbourne is likely to have similar environmental values to the proposed site so another relocation of the facility is unlikely to reduce the environmental impacts of the proposed facility. It is noted that the site, while supporting two MNES, does not support any unique environmental values that cannot be found in other agricultural grassland sites in the local area and targeted searches onsite failed to locate six other MNES suggesting that the site supports low plant and animal diversity of any significance.

A third relocation of the site also risks further social consequences arising from the selection of a less socially acceptable site. The delay resulting from finding a third site would also further strain the existing youth justice system.

### **2.14.2 Access road**

As described in Section 2, the access road was located to fulfil the following requirements.

- Avoiding impacts of traffic to Paul and Belfrage's Swamp avoiding all use of internal farm tracks running close to the swamp. These impacts would be short to medium term during construction but could also lead to long term impacts if the swamps were damaged by large machinery e.g. by soil compaction or weed spread.

- Avoiding impacts to an existing high pressure gas pipeline easement running parallel to the western side of the access road. The short, medium and long term impacts to building too close to the existing pipeline easement would be that approval for the road would not be obtained from the authority responsible for managing the pipeline easement.
- Allowing safe access to the site from Little River Road, avoiding a turn off directly on to Princes Freeway. Short and medium term impacts of needing to access the construction site from the Princes Freeway would be the need for traffic control e.g. reduced speeds, traffic control units, lane closures to allow access for plant and equipment to the site during construction. The long term impacts of accessing the site of Little River Road could be possible road traffic accidents and injuries and fatalities caused by incorrect merging and increased traffic entering and exiting Princes Freeway.

Due to these constraints, there are few feasible alternatives to the access road location without also needing to reposition the entire site.

### **2.14.3 Services easement**

As describe in detail in section 2.6, the services easement was located to minimise impacts to native vegetation, MNES and conservation buffers. The short, medium and long term impacts of choosing one of the other alignments include: increased expense as the alternative routes are longer (short to medium term) and increased removal of native vegetation including NTGWVP, GSM habitat and large old trees (long term). There may be other long term impacts such as increased introduction of weeds into areas of native vegetation where, for the alternative alignments, the services easement would traverse areas of native vegetation. There would also be extra maintenance impacts and costs associated with a longer pipeline. Thus the alignment chosen is the most feasible of the alternative chosen. The only alternative not considered was making the site off-grid, with no connection to any existing services.

### 3. Matters of National Environmental Significance (MNES)

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*The preliminary documentation must provide a general description of the environment affected by and surrounding the proposed action area, in both the short and long term. Specific matters this section must address include, but not be limited to:*

- a) A description of the natural temperate grassland of the Victorian volcanic plain ecological community that may be affected by this proposal. This section must provide the quantification (in hectares) of the extent of the ecological community present within the development site, details on the quality of this community, and the resources used to identify and assess the environmental values of the site, including survey data and historical records.*
- b) A description of the flora species that may be affected by this proposal, including but not limited to: button wrinklewort (*Rutidosia leptorrhynchoides*), clover glycine (*Glycine latrobeana*), large-fruit fireweed (*Senecio macrocarpus*) and matted flax-lily (*Dianella amoena*). This section must provide information detailing known/recorded populations of the species and known or potential habitat, including species habitat in the area surrounding the disturbance footprint. It must also provide details of the resources used to identify and assess the environmental values of the site, including survey data, inclusive of recent surveys undertaken, and historical records.*
- c) A description of the golden sun moth (*Synemon plana*) habitat and populations that may be affected by this proposal. This section must provide information detailing known/recorded populations of the species and known or potential habitat, including species habitat in the area surrounding the disturbance footprint. It must also provide details of the resources used to identify and assess the environmental values of the site, including survey data, inclusive of recent surveys undertaken, and historical records.*
- d) A description of the striped legless lizard (*Delma impar*) habitat and populations that may be affected by this proposal. This section must provide information detailing known/recorded populations of the species and known or potential habitat, including species habitat in the area surrounding the disturbance footprint. It must also provide details of the resources used to identify and assess the environmental values of the site, including survey data, inclusive of recent surveys undertaken, and historical records.*
- e) A description of the straw-necked ibis (*Threskiornis spinicollis*) habitat that may be affected by this proposal. This section must provide information detailing known/recorded populations of the species and known or potential habitat, including species habitat in the area surrounding the disturbance footprint and the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar wetland. These discussions must consider the tributary to Lollypop Creek which runs through the north-west corner of the disturbance footprint, and the existing riparian and conservation buffers for the protection of the straw-necked ibis which exist along this tributary.*
- f) The results of any targeted surveys undertaken for the above matters in accordance with the relevant guidelines, and details of the resources used to identify and assess the environmental values of the site, including survey data, inclusive of recent surveys undertaken, and historical records.*
- g) Details of the resources used to identify and assess the environmental values of the site, including survey data and historical records, as well as an assessment of the adequacy of any surveys undertaken, in particular the extent to which these surveys were appropriate and undertaken in accordance with the Department's relevant scientific and policy guidance.*
- h) Whether consultation/advice was sought from local community groups or experts.*

### 3.1 Areas surveyed for MNES

The “investigation area” was surveyed for the presence of threatened ecological communities and the presence of potential habitat for threatened species. Threatened ecological communities were identified using Commonwealth advice documents provided on the SPRAT database. Targeted surveys were undertaken only within areas potentially impacted by the construction area and then only where potential habitat had been mapped. The area surveyed for each MNES survey is summarised in Table 7 below along with the results of the investigations. Details of survey methods and results are provided in the following sections.

**Table 6 Survey area for MNES, Cherry Creek, Victoria.**

| MNES                                     | Reference                 | Area surveyed                                                                                                    | Results                                                                                         |
|------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Threatened ecological communities</b> | DSEWPac 2011b<br>DoE 2013 | Investigation area (Figure 1)                                                                                    | 28.23 ha of NTGWVP mapped within construction area                                              |
| <b>Threatened flora</b>                  | DEWHA 2009a<br>DoE 2013   | Potential habitat: Investigation area (Figure 1)<br>Targeted surveys: YJC facility extent (Figure 13, Figure 14) | No threatened flora detected                                                                    |
| <b>Striped Legless Lizard</b>            | DSEWPac 2011a<br>DoE 2013 | Potential habitat: Investigation area (Figure 1)<br>Targeted surveys: YJC facility extent (Figure 12)            | No SLL detected                                                                                 |
| <b>Golden Sun Moth</b>                   | DEWHA 2009b<br>DoE 2013   | Potential habitat: Investigation area (Figure 1)<br>Targeted surveys: DJR land acquisition (Figure 11)           | Confirmed presence population of GSM<br>35.66 ha of GSM habitat mapped within construction area |
| <b>Growling Grass Frog</b>               | DEWHA 2009c<br>DoE 2013   | Potential habitat: Lollypop Creek<br>Targeted surveys: Not required – no habitat present                         | No aquatic habitat present                                                                      |
| <b>Straw-necked Ibis</b>                 | DoE 2013                  | Potential habitat: Investigation area (Figure 1)<br>Targeted surveys: Not required – no significant impact       | No aquatic habitat present                                                                      |
| <b>Ramsar site</b>                       | DoE 2013                  | Investigation area (Figure 1)                                                                                    | Construction occurring within dryland areas, no aquatic habitat in construction area            |

## 3.2 Natural Temperate Grassland of the Victorian Volcanic Plains

**Background:** Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP) is an ecological community restricted to the volcanic basalt plains of western Victoria. It is typically free of large trees and shrubs and has a diverse ground-layer of hundreds of species of native grasses and herbs (TSSC 2008). The structural components of the community are provided by the dominant ground cover of large tussock-forming perennial native grasses, with open spaces between the tussocks (TSSC 2008). The Commonwealth guide to identifying the community provides a flow chart for identifying 1). If the community is present and 2). If the community is of sufficient quality for protection under the EPBC Act (referred to as “national listing”) (DSEWPaC 2011b). This reference was used to identify the presence of NTGVVP within the investigation area. The DELWP EVC mapping modelled for 1750 shows that the investigation is predominantly Plains Grassland (EVC 132) suggesting that the investigation area was dominated by NTGVVP prior to European settlement. The listing advice for the community (TSSC 2008) provides further information about conservation values of the community as listed in the table below.

**Methods and Results:** Field assessments undertaken within the investigation area determined that the NTGVVP ecological community was present and that most patches were of sufficient quality for listing (EHP 2017, Biosis 2017, Biosis 2018a).

NTGVVP extent mapping: Patches of NTGVVP were mapped by traversing the site on foot and mapping where patches of native grassland meet the listing requirements for NTGVVP. This assessment is summarised in the table below. Please note that at no time were state definitions of native vegetation used to map the extent and location of NTGVVP.

NTGVVP quality scoring: The patches of NTGVVP mapped within the construction area fit the condition thresholds for national listing according to DSEWPaC (2011b), because:

- Patch sizes are larger than 0.05 hectares
- The dominant native species represent at least 50% of the native species and the perennial tussock cover.
- Non-grass weeds comprise less than 30% of ground cover.

The NTGVVP community is also found in patchy occurrences in many of the nearby paddocks including directly south and west of the construction area.

The vegetation quality was assigned using the Habitat Hectares method which assigns a vegetation quality score out of 100 (DSE 2004). Vegetation quality scores are provided in Appendix 4. The ‘habitat hectare’ assessment considers a number of factors including weed cover, organic matter, recruitment and species richness to define a score for vegetation which is then provided as a score out of 100. The most relevant parts of this assessment are summarised in the table below.

While the community was assessed as sufficient quality for listing, the description of the vegetation and lists of recorded flora species show that this is a highly modified example of the community. The community has both low grass species diversity and low herb species diversity resulting from a long history of sheep grazing. The community is dominated by native perennial tussock grasses (Spear Grasses *Austrostipa* spp. and Wallaby Grasses *Rytidosperma* spp.), with scattered salt bushes (Berry Saltbush *Atriplex semibaccata*, Ruby Saltbush *Enchylaena tomentosa* and Nodding Saltbush *Einadia nutans*) and occasional herbs that are able to persist under grazing (Grassland Wood-sorrel *Oxalis perennans* and Blushing Bindweed *Convolvulus angustissimus*) (EHP 2017, Biosis 2017). No rare or threatened flora species were recorded.

**Table 7 NTGVVP assessment criteria (TSSC 2008, DSEWPac 2011b)**

| Condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Assessment according to TSSC 2008 & DSEWPac 2011b                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Vegetation quality assessment (Habitat hectares method)*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Step 1: Is the Natural Temperate Grassland ecological community present at my site?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Does the patch occur within the Victorian Volcanic Plain?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | YES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Benchmarks for the Victorian Volcanic Plain bioregion were used                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Is the site dominated by native vegetation?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | YES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Only those areas that meet the definition of a patch (at least 25 % perennial native cover) were mapped.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Are trees absent or sparse such that the projective foliage cover of native trees in the patch is 5% or less?                                                                                                                                                                                                                                                                                                                                                                                                                                      | YES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Plains Grassland EVC benchmark was used for the assessment indicating trees and shrubs largely absent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Is the ground vegetation layer dominated by native grasses and/or other native herbs?                                                                                                                                                                                                                                                                                                                                                                                                                                                              | YES The grassland ecological community is present. Go to Step 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Any patches with 25-49% of native cover were excluded from NTGVVP calculations.*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Step 2: Is the patch of sufficient quality for national listing?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Is the patch bigger than or equal to 0.05 hectares (e.g. 10 x 50m OR 20 x 25m)?                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | YES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Any patches smaller than 0.05 ha were excluded from NTGVVP calculations.*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| The dominant native species represent at least 50% of the native species and the perennial tussock cover; OR non-grass weeds comprise less than 30% of ground cover; OR native forbs (wildflowers) comprise at least 50% of total vegetation cover during spring – summer.                                                                                                                                                                                                                                                                         | YES. The patch of the ecological community is of sufficient quality to consider EPBC protection.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Any patches not of sufficient quality for listing were excluded from NTGVVP calculations.*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Conservation values (from TSSC 2008)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>The conservation value of a patch of the Natural Temperate Grassland of the Victorian Volcanic Plain ecological community is enhanced if it shows any of the following features:</b> <ul style="list-style-type: none"> <li>A high native plant species richness</li> <li>Large patch size</li> <li>Minimal weed invasion</li> <li>Presence of threatened plant and/or animal species</li> <li>Presence of natural exposed rock platforms and outcrops and</li> <li>Presence of mosses, lichens or a soil crust on the soil surface.</li> </ul> | <ul style="list-style-type: none"> <li>The site is low native diversity, modified grassland, with 65% of species recorded being weeds. The initial biodiversity assessment recorded 9 native grass species, 9 species of native herbs, 2 native rushes, 3 native shrubs and 44 weed species across 67 hectares of grassland (EHP 2017).</li> <li>While no definition of “large” is given, the patch is embedded in a landscape context of greater than 500 hectares of farmland, much of which is native grassland of varying quality.</li> <li>Weed invasion varies throughout the patch from 5 to 40% cover (EHP 2017).</li> <li>No threatened plant species were detected during targeted surveys. Golden Sun Moth is the only threatened animal species that has been detected.</li> <li>Basalt surface and embedded rock is present throughout the site. Surface rock removal has occurred in the past.</li> <li>The natural surface crust has been disturbed by a long history of livestock grazing, however mosses and lichens are still present.</li> </ul> | <ul style="list-style-type: none"> <li>Understorey Score: this has a maximum score of 25 and is based on the number of species observed and their covers. The maximum Understorey Score achieved was 15/25 indicating moderate levels of diversity only (EHP 2017).</li> <li>Patch Size: this has a maximum score of 10, with 1 indicating a patch size of &lt;2 ha and 8 indicating a patch size of &gt;20 hectares but “significantly disturbed”. All patches received a Patch Size score of 8/10 indicating large patches (EHP 2017).</li> <li>Lack of Weeds score: this has a maximum score of 15, with 0 being most weedy and 15 least weedy. Patches scored between 2 and 13 indicating a variation in weediness across the construction area (EHP 2017).</li> <li>Habitat hectares also considers Recruitment potential, Organic Litter and two scores of fragmentation/landscape context Neighbourhood and Distance to Core Area.</li> </ul> |

\*Please note that at no time were state definitions of native vegetation used to map the extent and location of NTGVVP.

**Quality of NTGVVP setting for DoEE Offset Assessment Guide:** As explained above, the quality of the impacted patches of NTGVVP (Appendix 4) was assessed by using the Victorian Government's 'habitat hectare' assessment protocols developed by DELWP (DSE 2004).

State quality scores are converted to federal quality scores because state scores are obtained using a published method available in the literature (Parkes et al. 2003), whereas there is no published method for determining the federal score out of 10. The state method considers both *Site condition* relative to ecological requirements of the ecological community and *Site context* accounting for position in the landscape and connectivity as required in the document "How to use the offsets assessment guide".

*Assumption: It is assumed that the offset assessment guide metric called "Area of community: Quality" scored as integers of 1 to 10 is actually a continuous rather than categorical variable. This allows a vegetation quality score of 36/100 to be converted to an offsets guide Quality score of 4 by transforming the scale (dividing by 10) to get 3.6/10 and then rounding up to 4 to accord with the integer values provided in the offsets guide. This conversion has been consistently accepted by DoEE for use in the offset assessment guide (e.g. Referral number 2016/7734 and Referral number 2017/7930).*

This assessment therefore uses the habitat hectare scores calculated for each habitat zone (Appendix 4) transformed and rounded to the nearest equivalent quality value required by the DoEE Offset Assessment Guide under the "Area of Community: Quality" component. This resulted in 0.56 ha with a rounded score of 3/10, 0.46 ha with a rounded score of 4/10, 25.83 ha with a rounded score of 6/10, 1.38 ha with a rounded score of 7/10. On advice from DoEE, these scores were weighted by the area of each quality and averaged to obtain an overall quality score of 6/10 over the total 28.23 hectares.

**Discussion of Construction area:** The construction area supports a total of 28.23 hectares of NTGVVP (Figure 6, Figure 8, EHP 2017, Biosis 2017). A habitat hectare assessment (DSE 2004) showed that the grassland was of low to moderate quality. Site condition scores varied from 12.24 to 48.96 (out of 75), mostly due to differences in weed cover and the diversity of understorey plant species in different habitat zones (Appendix 4). Landscape scores were consistently high ranging from 12 to 17 (out of 25) due to the contiguous nature of the vegetation (Appendix 4). The quality of the vegetation varies across the site resulting in assessment of quality scores of 3/10, 4/10, 6/10 and 7/10 (see above). The weighted average of 6/10 was allocated for grassland quality.

The FFG act listed Western (Basalt) Plains Grasslands Community is synonymous with NTGVVP, and therefore present across the same extent.

### 3.3 Flora species

#### 3.3.1 Spiny Rice-flower *Pimelea spinescens* subsp. *spinescens*

**Background:** Potential habitat for threatened grassland flora species was identified within the construction area (EHP 2017). Targeted surveys were subsequently undertaken for potential habitat within the construction area to determine potential impacts on these species. The targeted surveys were undertaken to coincide with the flowering periods for the species, as detailed below. Other than the five species detailed below, no other threatened flora species were assessed as having a medium or higher likelihood of occurrence within the construction area. Existing records of these species from the local area show that few records exist for these species and most of them are restricted to existing reserves (Figure 15).

**Methods and results:** Targeted surveys for Spiny Rice-flower took place within potential habitat on 23, 26 and 30 June 2017, and 18 and 25 July 2017 to coincide with the flowering period for the species (Biosis 2017). All potential habitat within the proposed construction area was surveyed by two to four ecologists walking parallel transects, less than 5 metres apart. Survey effort was recorded using hand-held GPS units to track the progress of each observer. Survey effort for Spiny Rice-flower targeted surveys is mapped in Figure 13.

The timing and methodology of the targeted Spiny Rice-flower surveys was consistent with the *Significant impact guidelines for the critically endangered Spiny Rice-flower* (*Pimelea spinescens* subsp. *spinescens*) (DEWHA 2009a).

On completion of the targeted surveys, this species was not detected within the proposed construction area. The survey effort for this assessment is considered to be appropriate as it was conducted during the flowering periods for all four target species. There has also been no recent fires or slashing of the vegetation prior to the targeted surveys. Therefore, the ability of an experienced observer to detect the target species was considered to be sufficient.

**Discussion of Construction area:** The results of the targeted surveys suggest that this species is not found within the construction area and therefore no significant impacts will occur to this species.

### **3.3.2 Button Wrinklewort *Rutidosia leptorhynchoides*, Clover Glycine *Glycine latrobeana*, Large-headed Fireweed *Senecio macrocarpus*, Matted Flax-lily *Dianella amoena***

**Background:** Potential habitat for threatened grassland flora species was identified within the construction area (EHP 2017). Targeted surveys were subsequently undertaken for potential habitat within the construction area to determine potential impacts on these species. The targeted surveys were undertaken to coincide with the flowering periods for these species, as detailed below. Other than the five species detailed below, no other threatened flora species were assessed as having a medium or higher likelihood of occurrence within the construction area. Existing records of these species from the local area show that few records exist for these species and most of them are restricted to existing reserves (Figure 15).

**Methods and Results:** Targeted surveys for the above four species were undertaken within the proposed construction area within the spring flowering season on 17, 18 and 19 October 2017. All potential habitat within the proposed construction area was surveyed by two to four ecologists walking parallel transects, less than 5 metres apart. Survey effort was recorded using hand-held GPS units to track the progress of each observer (Figure 14). Survey effort for targeted surveys for this species is mapped in Figure 14. There are no significant impact criteria or survey guidelines specifically for these species.

On completion of the targeted surveys, none of these species were detected within the proposed construction area. The survey effort for this assessment is considered to be appropriate as it was conducted during the flowering periods for all four target species. There has also been no recent fires or slashing of the vegetation prior to the targeted surveys. Therefore, the ability of an experienced observer to detect the target species was considered to be sufficient.

**Discussion of Construction area:** The results of the targeted surveys suggest that these species are not found within the construction area and therefore no significant impacts will occur to these species.

## **3.4 Golden Sun Moth *Synemon plana***

**Background:** Potential habitat for GSM was identified within the construction area (EHP 2017). Potential habitat was considered to be present where the grassland vegetation was dominated by known food plants: Spear-grasses *Austrostipa* spp., Wallaby-grasses *Rytidosperma* spp. and Chilean Needle-grass *Nassella neesiana*, and had a suitable open tussock structure. Existing records of this species from the local area are from a location 3 kilometres to the north of the construction area (Figure 16). Melbourne Water has advised that the species has been found occupying other grassland areas on Melbourne Water land directly to the south of the investigation area (Heather Graham, Melbourne Water, pers. comm. 2018).

Targeted surveys were undertaken during the 2017-18 flight season for GSM to determine species presence. Four surveys were completed between 21 November 2017 and 22 December 2017 in accordance

with the *Significant Impact Guidelines for the Critically Endangered Golden Sun Moth* (DEWHA 2009b). Survey effort was recorded using hand-held GPS units to track the progress of each observer (Figure 11).

**Methods and Results:** Targeted surveys for GSM confirmed the presence of this species throughout the survey area (Figure 9, Figure 11). Table 9 below details the conditions and observations from each of the four surveys. Survey effort for GSM targeted surveys is mapped in Figure 11.

**Discussion of Construction area:** While records of the species are not uniform in distribution throughout the entire survey area (Figure 9), the entirety of the survey area is considered confirmed GSM habitat, totalling 35.66 hectares (Figure 9). This is because suitable food plants are found throughout the site, contiguous with the records that were observed. The asynchronous emergence pattern of this species means that it is impossible to observe all individuals present at a site during one set of surveys so the patchy distribution of records does not indicate that the species is absent from appropriate habitat where the species was not observed.

**Table 8 Golden Sun Moth targeted survey results**

| Survey date | Start time | Finish time | GSM observed? | Number of GSM observed |
|-------------|------------|-------------|---------------|------------------------|
| 21/11/2017  | 10:20      | 15:00       | No            | 0                      |
| 29/11/2017  | 10:00      | 14:30       | Yes           | 1 male                 |
| 12/12/2017  | 10:30      | 14:00       | Yes           | approx. 20 males       |
| 22/12/2017  | 10:15      | 13:30       | Yes           | approx. 20 males       |

### 3.5 Striped Legless Lizard *Delma impar*

**Background:** Potential habitat for Striped Legless Lizard (SLL) was identified within the construction area (EHP 2017). Potential habitat was considered to be present where native and/or introduced tussock grasses were the dominant structural component of the vegetation. Additional habitat elements present within these areas were embedded and surface rocks interspersed throughout cracking clay soils. Existing records of this species from the local area show that there are no recent records of this species within the local area and only three other records dating from 1987 and 1990 (Figure 17). Since then, two separate targeted surveys for this species were undertaken within the Western Treatment Plant with some overlap with the construction area (Biosis 2003, Ecology Australia 2012). Neither of these surveys detected the presence of SLL, however, the effort and methods for these two surveys did not meet the standards of DSEWPac (2011a).

Targeted surveys were undertaken from September to December 2017 in accordance with the *Environment Protection and Biodiversity Conservation Act 1999 referral guidelines for the vulnerable striped legless lizard Delma impar*, using artificial shelter sites (DSEWPac 2011a). Twelve tile grids of 50 terracotta roof tiles each (a total of 600 tiles) were placed throughout the potential habitat in the construction area (Figure 12). The tile grids were installed on 27 June 2017, 10 weeks prior to surveys commencing. Tile grids were checked weekly between 7 September 2017 and 7 December 2017, resulting in 13 checks of each artificial shelter.

**Methods and Results:** Targeted surveys for SLL did not detect the presence of the species under any of the tiles in any of the 12 grids. This makes the likelihood of the presence of the species low. The only other species detected under the tiles were: House Mouse *Mus musculus*, Spotted Marsh Frog *Limnodynastes tasmaniensis*, and Common Blue-tongue Lizard *Tiliqua scincoides*. Survey effort for SLL targeted surveys is mapped in Figure 12.

**Discussion of Construction area:** The results of the targeted surveys suggest that this species is not found within the construction area and therefore no significant impacts will occur to this species.

### 3.6 Straw-necked Ibis

**Background:** Straw-necked Ibis *Threskiornis spinicollis* is a large, wetland bird species that can travel hundreds of kilometres in relatively short periods. This species breeds in response to flood events in major inland wetlands in a typical boom-bust adaptive strategy. Straw-necked Ibis breed in large colonies, most of which are located in the Murray-Darling Basin. Straw-necked Ibises make their nests on dense wetland vegetation. This species can feed in dry grassland and pasture but needs freshwater wetland habitat to breed. This species is *not* listed as a threatened species, nor as a migratory species under the EPBC Act.

**Discussion of Construction area:** The construction area is located within the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar Site for which wetland birds is a primary consideration. However, the construction area is not wetland habitat and there are no records of this species from the construction area (Figure 18). The closest records are from the wetland directly south of the construction area, known as Belfrages Swamp. This wetland has been dry for several decades having been modified by agriculture and the most recent record of Straw-necked Ibis from Belfrages Swamp is from 1990.

There is a high number of records from the vicinity of permanent wetland habitats on the shoreline of the WTP (Figure 18). Straw-necked Ibises are nomadic and routinely move long distances in response to localised and episodic availability of resources. They actively and preferentially seek locations such as areas of agricultural irrigation where food is available. By comparison with such wetlands and agriculturally managed land, the construction area does not support habitat that is of critical importance to the species at any life-cycle stages. Please see Section 2.9 for a discussion of existing protections for this species.

### 3.7 Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar site

**Background:** The Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar site is a large area of land on the western shores of Port Phillip Bay. The Australian Ramsar Wetlands database lists the Ramsar site as 22,897 hectares in size making the construction area 0.21% of the total area of the Ramsar site. Much of the Ramsar site is highly modified supporting sewerage treatment works, irrigated and dryland agriculture, is bisected by a major freeway and is the site of heavy industry.

**Discussion of Construction area:** Ramsar sites are listed for their importance as wetland habitat and numerous migratory birds are listed as likely to occur within the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar Site, for which wetland birds are a primary consideration (Table 10). However, the construction area does not support permanent wetland habitat. One small patch of Plains Grassy Wetland (0.062 hectares) vegetation was mapped on the alignment of the proposed access road (Biosis 2017, Figure 8). This occurs as low-lying area in a paddock and is ephemerally inundated in the wetter months of the year. It supports wetland vegetation only when inundated. The depression is likely to be dry in summer when the majority migratory bird species are present in the Ramsar site and so is unlikely to provide habitat for any listed migratory species, even for Latham's Snipe *Gallinago hardwickii*, which preferentially uses shallows and margins of vegetated freshwater wetlands. The construction area does not support habitat that is of critical importance to any life-cycle stages of wetland birds, including any migratory shorebirds, and no migratory species predicted to occur in the local area is likely to rely on the construction area.

Please see Section 2.9 for a discussion of existing protections for this MNES.

**Table 9 Migratory birds predicted to likely occur within the local area and the assessed impact**

| Scientific name                          | Common name                         | Most recent record | Impact                                                                                                                                                    |
|------------------------------------------|-------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Seabirds                                 |                                     |                    |                                                                                                                                                           |
| <i>Ardenna tenuirostris</i>              | Short-tailed Shearwater             | 2011               | Species is entirely marine.<br>No impact on the species or its habitat will occur.                                                                        |
| <i>Ardenna carneipes</i>                 | Flesh-footed Shearwater             | PMST               |                                                                                                                                                           |
| <i>Diomedea exulans</i>                  | Wandering Albatross                 | PMST               |                                                                                                                                                           |
| <i>Thalassarche melanophris</i>          | Black-browed Albatross              | PMST               |                                                                                                                                                           |
| <i>Thalassarche chrysostoma</i>          | Grey-headed Albatross               | PMST               |                                                                                                                                                           |
| <i>Thalassarche cauta</i>                | Shy Albatross                       | PMST               |                                                                                                                                                           |
| <i>Phoebetria fusca</i>                  | Sooty Albatross                     | PMST               |                                                                                                                                                           |
| <i>Fregata ariel</i>                     | Lesser Frigatebird                  | 2005               |                                                                                                                                                           |
| <i>Chlidonias leucopterus</i>            | White-winged Black Tern             | 2013               |                                                                                                                                                           |
| <i>Hydroprogne caspia</i>                | Caspian Tern                        | 2013               |                                                                                                                                                           |
| <i>Sternula albifrons</i>                | Little Tern                         | 2013               |                                                                                                                                                           |
| <i>Anous stolidus</i>                    | Common Noddy                        | PMST               |                                                                                                                                                           |
| <i>Stercorarius parasiticus</i>          | Arctic Jaeger                       | 2011               |                                                                                                                                                           |
| <i>Diomedea antipodensis</i>             | Antipodean Albatross                | PMST               |                                                                                                                                                           |
| <i>Thalassarche melanophris impavida</i> | Campbell Albatross                  | PMST               |                                                                                                                                                           |
| <i>Macronectes giganteus</i>             | Southern Giant-Petrel               | 1985               |                                                                                                                                                           |
| <i>Thalassarche bulleri</i>              | Pacific Albatross                   | PMST               |                                                                                                                                                           |
| <i>Diomedea epomophora</i>               | Royal Albatross                     | PMST               |                                                                                                                                                           |
| <i>Macronectes halli</i>                 | Northern Giant-Petrel               | PMST               |                                                                                                                                                           |
| <i>Gelochelidon nilotica</i>             | Gull-billed Tern                    | 2011               | Site does not include habitat suitable for the species.                                                                                                   |
| <i>Sterna hirundo</i>                    | Common Tern                         | 2013               | No impact on the species or its habitat is likely to occur                                                                                                |
| Shorebirds                               |                                     |                    |                                                                                                                                                           |
| <i>Arenaria interpres</i>                | Ruddy Turnstone                     | 2011               | Site does not include habitat suitable for the species.<br>No impact on the species or its habitat is likely to occur                                     |
| <i>Pluvialis squatarola</i>              | Grey Plover                         | 2012               |                                                                                                                                                           |
| <i>Pluvialis fulva</i>                   | Pacific Golden Plover               | 2014               |                                                                                                                                                           |
| <i>Charadrius mongolus</i>               | Lesser Sand Plover                  | 1978               |                                                                                                                                                           |
| <i>Charadrius bicinctus</i>              | Double-banded Plover                | 2013               |                                                                                                                                                           |
| <i>Charadrius leschenaultii</i>          | Greater Sand Plover                 | 2010               |                                                                                                                                                           |
| <i>Numenius madagascariensis</i>         | Eastern Curlew                      | 2011               |                                                                                                                                                           |
| <i>Numenius minutus</i>                  | Little Curlew                       | 2010               |                                                                                                                                                           |
| <i>Limosa lapponica</i>                  | Bar-tailed Godwit                   | 2013               |                                                                                                                                                           |
| <i>Tringa glareola</i>                   | Wood Sandpiper                      | 2013               |                                                                                                                                                           |
| <i>Tringa brevipes</i>                   | Grey-tailed Tattler                 | 2010               |                                                                                                                                                           |
| <i>Actitis hypoleucos</i>                | Common Sandpiper                    | 2012               |                                                                                                                                                           |
| <i>Tringa nebularia</i>                  | Common Greenshank                   | 2015               |                                                                                                                                                           |
| <i>Tringa stagnatilis</i>                | Marsh Sandpiper                     | 2015               |                                                                                                                                                           |
| <i>Xenus cinereus</i>                    | Terek Sandpiper                     | 2008               |                                                                                                                                                           |
| <i>Calidris ferruginea</i>               | Curlew Sandpiper                    | 2015               |                                                                                                                                                           |
| <i>Calidris ruficollis</i>               | Red-necked Stint                    | 2015               |                                                                                                                                                           |
| <i>Calidris acuminata</i>                | Sharp-tailed Sandpiper              | 2015               |                                                                                                                                                           |
| <i>Calidris canutus</i>                  | Red Knot                            | 2013               |                                                                                                                                                           |
| <i>Calidris tenuirostris</i>             | Great Knot                          | 2010               |                                                                                                                                                           |
| <i>Calidris alba</i>                     | Sanderling                          | 1986               |                                                                                                                                                           |
| <i>Limicola falcinellus</i>              | Broad-billed Sandpiper              | 2013               |                                                                                                                                                           |
| <i>Glareola maldivarum</i>               | Oriental Pratincole                 | 2012               |                                                                                                                                                           |
| <i>Calidris minuta</i>                   | Little Stint                        | 2010               |                                                                                                                                                           |
| <i>Calidris melanotos</i>                | Pectoral Sandpiper                  | 2013               |                                                                                                                                                           |
| <i>Limosa lapponica baueri</i>           | Western Alaskan Bar-tailed Godwit   | PMST               |                                                                                                                                                           |
| <i>Limosa lapponica menzbieri</i>        | Northern Siberian Bar-tailed Godwit | PMST               |                                                                                                                                                           |
| <i>Calidris subminuta</i>                | Long-toed Stint                     | 2011               |                                                                                                                                                           |
| <i>Phalaropus lobatus</i>                | Red-necked Phalarope                | 2007               |                                                                                                                                                           |
| <i>Philomachus pugnax</i>                | Ruff                                | 2011               |                                                                                                                                                           |
| Waterfowl                                |                                     |                    |                                                                                                                                                           |
| <i>Anas clypeata</i>                     | Northern Shoveler                   | 2014               | Site does not include habitat suitable for the species.<br>No impact on the species or its habitat is likely to occur                                     |
| Wetland birds                            |                                     |                    |                                                                                                                                                           |
| <i>Ardea modesta</i>                     | Eastern Great Egret                 | 2015               | Species may occasionally use flooded paddocks or Plains Grassy Wetland in an opportunistic manner.<br>No impact on the species or its habitat will occur. |
| <i>Ardea ibis</i>                        | Cattle Egret                        | 2013               |                                                                                                                                                           |
|                                          |                                     |                    |                                                                                                                                                           |
| <i>Gallinago hardwickii</i>              | Latham's Snipe                      | 2014               | Site does not include habitat suitable for the species.                                                                                                   |
| <i>Gallinago megala</i>                  | Swinhoe's Snipe                     | PMST               | Any impact on the species or its habitat is likely to be negligible.                                                                                      |

|                                                        |                           |      |                                                                                                                       |
|--------------------------------------------------------|---------------------------|------|-----------------------------------------------------------------------------------------------------------------------|
| <i>Gallinago stenura</i>                               | Pin-tailed Snipe          | PMST |                                                                                                                       |
| <i>Plegadis falcinellus</i>                            | Glossy Ibis               | 2013 |                                                                                                                       |
| <b>Raptors</b>                                         |                           |      |                                                                                                                       |
| <i>Pandion cristatus</i>                               | Eastern Osprey            | 2000 | Site does not include habitat suitable for the species.<br>No impact on the species or its habitat is likely to occur |
| <b>Other terrestrially or aerially feeding species</b> |                           |      |                                                                                                                       |
| <i>Hirundapus caudacutus</i>                           | White-throated Needletail | 1990 | Species does not use any resources that will be impacted.<br>No impact on the species or its habitat will occur.      |
| <i>Apus pacificus</i>                                  | Fork-tailed Swift         | 1990 |                                                                                                                       |
| <i>Rhipidura rufifrons</i>                             | Rufous Fantail            | 2007 | Site does not include habitat suitable for the species.<br>No impact on the species or its habitat is likely to occur |
| <i>Myiagra cyanoleuca</i>                              | Satin Flycatcher          | PMST |                                                                                                                       |
| <i>Monarcha melanopsis</i>                             | Black-faced Monarch       | PMST |                                                                                                                       |
| <i>Acrocephalus stentoreus</i>                         | Clamorous Reed Warbler    | 2011 |                                                                                                                       |
| <i>Motacilla flava</i>                                 | Yellow Wagtail            | 2005 |                                                                                                                       |

### 3.8 Growling Grass Frog *Litoria raniformis*

**Background:** The Western Treatment Plant is known to support a population of Growling Grass Frog *Litoria raniformis* and is considered a stronghold for this species in Melbourne (Figure 19). The key ecological requirements of the species are that it is dependent on aquatic habitat and appropriate hydrological regimes for breeding and persistence (DEWHA 2009c). Breeding usually occurs in still or slow moving water (DEWHA 2009c). Adult frogs move across open ground to access local foraging resources and breeding sites, over-wintering sites and to respond to changing conditions and breeding requirements (DEWHA 2009c).

**Discussion of Construction area:** There is no permanent waterbodies within the YJC facility, access road or services easement. While Paul and Belfrage's Swamps may have provided temporary habitat when flooded in the past, these wetlands rarely hold water and are now isolated from the WTP population by the Princes Freeway. The lower reaches of Lollypop Creek provides records of this species but the point where it is traversed by the services easement does not support permanent water. As a result, targeted surveys were not recommended for this species as there is no potential habitat to search.

Please see Section 2.9 for a discussion of existing protections for this MNES.

### 3.9 Resources used

See References.

### 3.10 Consultation/advice from local community groups or experts

#### 3.10.1 Expert technical investigations

The following expert technical reports were commissioned to undertake various technical investigations to inform the development:

| Technical assessment/ investigation            | Consultancy firms engaged           | Progress                                                                       |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------------------------|
| Preliminary ecological assessment              | Ecology & Heritage Partners Pty Ltd | Completed                                                                      |
| Asset owner consultation report                | ARUP                                | Completed                                                                      |
| Planning approvals preparation                 | Hansen Partnership                  | Completed                                                                      |
| Environmental referrals/approvals preparation  | Biosis Pty Ltd                      | In progress                                                                    |
| Targeted species surveys and offset strategies | Biosis Pty Ltd                      | Completed                                                                      |
| Cultural heritage assessment                   | Biosis Pty Ltd                      | Completed for YJC facility and access road. In progress for services easement. |
| Geotechnical and soil contamination            | Tonkin and Taylor                   | Completed                                                                      |

|                                                                         |     |             |
|-------------------------------------------------------------------------|-----|-------------|
| assessment                                                              |     |             |
| Principal consultant incl. design development, facility and early works | HDR | In progress |
| Stormwater Management Strategy                                          | HDR | Completed   |
| Visual impact assessment                                                | HDR | Completed   |
| Traffic impact assessment                                               | HDR | Completed   |

### 3.10.2 Consultation with local community groups

An extensive public consultation process has been under taken. Please see Section 8 for details of Public Consultation process.

## 4. Potential impacts

*The preliminary documentation must include an assessment of potential impacts (including direct, indirect, consequential and cumulative impacts) that may occur as a result of all elements and project phases of the proposed action on the MNES addressed at Section 3. Consideration of impacts must not be confined to the immediate area of the proposed action but must also consider the potential of the proposed action to impact on adjacent areas that are likely to contain habitat for MNES.*

*For listed threatened species and communities this must include, but not be limited to:*

*a) An assessment of the direct and indirect loss and/or disturbance of habitat for the species addressed at Section 3 as a result of the proposed action. This must include the number of individuals to be impacted, the nature of the impact (e.g. disturbance, habitat loss, destruction, modification, fragmentation) and a quantification of this impact in square metres.*

*b) An assessment of the direct and indirect loss and/or disturbance for the natural temperate grassland of the Victorian volcanic plain ecological community, as a result of the proposed action. This must include a quantification of this impact in square metres being the total extent of the area to be cleared as a result of the proposed action, inclusive of finalised ancillary works and access road design. This must include an assessment of the nature of the impact e.g. disturbance, habitat loss, destruction, modification, fragmentation.*

*c) Details on the distance of the proposed works to any known or potential habitat for the species and ecological communities addressed at Section 3, and analysis of the impacts to species' populations from the proposed action.*

*d) As assessment of the direct and indirect impact on the ecological character of the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar wetland, as a result of the proposed action. This must include:*

*i. an assessment of the risk of substantial and measureable changes to the physico-chemical status and hydrological regime of the wetland.*

*ii. an assessment of impacts to the wetland's ability to regularly support the straw-necked-ibis.*

*iii. an assessment of the nature of the impact to the wetland, catchment areas including adjacent freshwater wetlands and Lollypop Creek and tributaries, and riparian and conservation buffers e.g. disturbance, habitat loss, modification, discharge of contaminants, interference with riparian and conservation buffers, increased salinity, weed invasion.*

*iv. a discussion of the proposed Stormwater Management Strategy.*

*e) Details on whether any impacts are likely to be unknown, unpredictable or irreversible.*

*f) A local, regional and national scale analysis of the likely impacts to the MNES addressed at Section 3. This should include a discussion of potential cumulative impacts on relevant MNES within the broader region where potential impacts from this proposed action are in addition to existing impacts of other activities (including known potential future expansions or developments by the proponent and other developers in the region and vicinity). Discussion of any likely impacts on the ecological character of the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar wetland must also be provided.*

*g) Any technical data and other information used or needed to make a detailed assessment of the relevant impacts.*

*h) All discussions and conclusions should include a full justification based on the best available information including relevant conservation advices, recovery plans, threat abatement plans and guidance documents, if applicable. Departmental documents regarding listed threatened species and communities can be found at: <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>.*

## 4.1 Summary of proposed impacts to MNES

The impacts of the proposed action on MNES was assessed to determine if there would be significant impacts to any MNES. The results of the assessment are summarised in Table 11 below and detailed in the following sections. The assessment covers the entire construction area including the services easement and access road plus enabling works intersection. Figure 6 shows the significant impacts to MNES.

**Table 10 Survey area for MNES, Cherry Creek, Victoria.**

| MNES                                              | Proposed direct impact                                                                                                                        | Proposed indirect impacts                                                                               | Significant impact criteria threshold reached? |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>Threatened ecological communities – NTGVVP</b> | Clearing of 28.23 ha of NTGVVP<br>Fragmentation of retained NTGVVP                                                                            | Nil – construction will Avoid and Minimise impacts to surrounding areas                                 | Yes                                            |
| <b>Threatened flora</b>                           | Nil – none detected                                                                                                                           | Nil – none detected                                                                                     | No                                             |
| <b>Striped Legless Lizard</b>                     | Nil – none detected                                                                                                                           | Nil – none detected                                                                                     | No                                             |
| <b>Golden Sun Moth</b>                            | Clearing of 35.66 ha of GSM habitat<br>Fragmentation of retained GSM habitat                                                                  | Nil – construction will Avoid and Minimise impacts to surrounding areas                                 | Yes                                            |
| <b>Growling Grass Frog</b>                        | Nil – none detected                                                                                                                           | Nil – construction will Avoid and Minimise impacts to downstream water quality and conservation buffers | No                                             |
| <b>Straw-necked Ibis</b>                          | Nil – does not support breeding habitat or a significant portion of the population                                                            | Nil – construction will Avoid and Minimise impacts to downstream water quality and conservation buffers | No                                             |
| <b>Ramsar site</b>                                | Soil disturbance, introduction of hard surfaces in dryland areas of Ramsar site, including small areas of disturbance in conservation buffers | Nil – construction will Avoid and Minimise impacts to downstream water quality and conservation buffers | No                                             |

## **4.2 Natural Temperate Grassland of the Victorian Volcanic Plains (NTGVVP)**

### **4.2.1 Direct impacts**

The clearing of the construction area for the proposed development will result in the permanent removal of 28.23 hectares of NTGVVP (Figure 6).

#### **Site context**

The construction area is contiguous with native and introduced grassland in the paddocks surrounding the YJC facility area. Thus the proposed development will introduce fragmentation into an otherwise contiguous patch of native vegetation. Landscape ecology defines patches by their composition and configuration. Thus the composition of the surrounding grassland will not change but the configuration will change as it will now display a “doughnut” shaped configuration with the YJC facility in the centre. The grasslands north and south of the YJC facility will remain connected via land on the east side of the proposed development, notwithstanding possible future impacts cause by the proposed Outer Metropolitan Ring road. Given the highly modified nature of the grasslands with high weed loads and poor species diversity, the fragmentation is not expected to increase direct impacts above those already imparted by past and current agricultural uses.

Edge effects (a change in internal conditions of a patch of vegetation due to the increase of the edge:interior ratio of the patch) are not anticipated as a result of the construction of the YJC facility. The main edge effect of concern to grasslands is the increased invasion of the grassland by weeds. Given that the site is already impacted by noxious weeds, and weeds will be managed during and post construction (See Section 2.11.7), it is not anticipated that the YJC facility will pose any greater weed risk than is already associated with the current agricultural uses. Melbourne Water will continue to manage the surrounding grasslands in accordance with their approved Land Use Strategy so it will be the responsibility of Melbourne Water to maintain and improve weed control in retained grasslands.

There is no NTGVVP adjacent to the services easement south of Princes Freeway as the services easement traverses cropland.

### **4.2.2 Assessment of scale (local/regional/national impact)**

The removal of 28.23 hectares of NTGVVP is expected to have a local impact only. The NTGVVP proposed for removal does not provide habitat or display characteristics that are unique. Similar homogenous, low diversity condition of the vegetation can be found elsewhere adjacent to the construction area and 15,000 hectares of such vegetation will be reserved in the Western Grassland Reserve 4 kilometres to the north of the construction area. The proposed removal is considered to constitute a small impact on the extent of the ecological community across the Victorian Volcanic Plain particularly when placed in the context of the amount of clearing of the community that is expected over the next 30 years as part of the Melbourne Strategic Assessment (DSE 2009).

### **4.2.3 Indirect impacts**

There are no anticipated indirect impacts either during construction or during the operational phases over and above the direct removal of the NTGVVP. The project footprint has been carefully designed to capture the full extent of works associated with the proposed development, taking into account access road, site compounds, material storage, services easement and future needs for expansion. All areas of NTGVVP that will not be directly impacted will be retained and clearly marked as ‘no-go areas’ to ensure no unknown direct impacts or disturbance occurs outside the proposed action area.

### **4.2.4 Distance of works to known habitat**

The proposed development is contiguous with other areas of NTGVVP.

#### **4.2.5 Impacts likely to be unknown, unpredictable or irreversible**

The impacts are well documented and it is unlikely that there will be additional or unforeseen impacts. A Construction Site Environmental Management Plan will be in place to prevent accidental damage to retained grassland. The loss of NTGVVP on site would be irreversible. The site could be decommissioned and concrete footings and hard surfaces removed but substantial investment in rehabilitation would be needed to reinstate the native grassland so this removal is considered irreversible until grassland reconstruction techniques improve.

### **4.3 Flora species**

#### **4.3.1 Direct impacts**

There are no direct impacts proposed to EPBC-listed flora species. Targeted surveys for EPBC-listed flora species failed to detect any of these species making the likelihood of occurrence within the construction area low.

#### **4.3.2 Indirect impacts**

There are no indirect impacts proposed to EPBC-listed flora species. There are no recent records in the areas contiguous with the proposed development making indirect impacts unlikely.

#### **4.3.3 Distance of works to known habitat**

The closest records of any of the five listed flora species for which targeted surveys were undertaken are within the rail reserve corridor of the Melbourne-Geelong rail and one record from 2009 on Kirks Bridge Road, both 1.5 kilometres from the construction area to the north of the site (Figure 15).

#### **4.3.4 Impacts likely to be unknown, unpredictable or irreversible**

The impacts are well documented and it is unlikely that there will be additional or unforeseen impacts given that the species are unlikely to be present.

### **4.4 Golden Sun Moth**

#### **4.4.1 Direct impacts**

The clearing for the proposed development will result in the permanent removal of 35.66 hectares of confirmed GSM habitat (Figure 6).

#### **Site context**

The construction area is contiguous with native and introduced grassland in the paddocks surrounding the YJC facility area. Thus the proposed development will introduce fragmentation into an otherwise contiguous patch of GSM habitat. Landscape ecology defines patches by their composition and configuration. Thus the composition of the surrounding grassland will not change but the configuration will change as it will now display a “doughnut” shaped configuration with the YJC facility in the centre. The grasslands north and south of the YJC facility will remain connected via land on the east side of the proposed development, notwithstanding possible future impacts cause by the proposed Outer Metropolitan Ring road. Given the retention of GSM habitat surrounding the YJC facility and that GSM are known to persist in modified environments, the fragmentation is not expected to increase direct impacts above those already imparted by past and current agricultural uses.

Edge effects (a change in internal conditions of a patch of vegetation due to the increase of the edge:interior ratio of the patch) are not anticipated as a result of the construction of the YJC facility. The main edge effect

of concern to grasslands is the increased invasion of the grassland by weeds. Given that the site is already impacted by noxious weeds and some of these weeds provide habitat for GSM anyway (i.e. Chilean Needle-grass), it is not anticipated that the YJC facility will pose any greater edge effect risk than is already associated with the current agricultural uses. Melbourne Water will continue to manage the surrounding grasslands in accordance with their approved Land Use Strategy so it will be the responsibility of Melbourne Water to maintain and improve the natural values in retained grasslands.

There is no GSM habitat adjacent to the services easement south of Princes Freeway as the services easement traverses cropland.

#### **4.4.2 Assessment of scale (local/regional/national impact)**

The removal of 35.66 hectares of GSM exceeds the significant impact guidelines for this species but is expected to have a local impact only. The GSM habitat proposed for removal does not provide habitat or display characteristics that are unique. Similar habitat can be found elsewhere adjacent to the construction area. This proposed removal is small when compared with the amount of clearing that is expected over the next 30 years as part of the Melbourne Strategic Assessment (DSE 2009).

#### **4.4.3 Indirect impacts**

There are no anticipated indirect impacts either during construction or during the operational phases over and above the direct removal of the GSM habitat. The project footprint has been carefully designed to capture the full extent of works associated with the proposed development, taking into account access roads, site compounds, material storage, services easement requirements and future needs for expansion. All areas of GSM habitat that will not be directly impacted will be retained and clearly marked as 'no-go areas' to ensure no unknown direct impacts or disturbance occurs outside the proposed action area.

#### **4.4.4 Distance of works to known habitat**

The proposed development is contiguous with other areas of confirmed GSM habitat.

#### **4.4.5 Impacts likely to be unknown, unpredictable or irreversible**

The impacts are well documented and it is unlikely that there will be additional or unforeseen impacts. A Construction Site Environmental Management Plan will be in place to prevent accidental damage to retained GSM habitat. The loss of GSM habitat on site would be irreversible. The site could be decommissioned and concrete footings and hard surfaces removed but substantial investment in rehabilitation would be needed to reinstate the GSM habitat so this removal is considered irreversible until grassland reconstruction techniques improve.

### **4.5 Striped Legless Lizard**

#### **4.5.1 Direct impacts**

There are no direct impacts proposed to SLL. Targeted surveys for this species failed to detect SLL making the likelihood of occurrence within the construction area low.

#### **Site context**

Targeted surveys were only undertaken within the construction area and so the presence or absence of the species in the area surrounding the YJC facility cannot be determined. If SLL was present in the surrounding area, the impact of edge effects over and above direct habitat removal and fragmentation would be almost impossible to study or observe given the difficulties associated with studying small reptiles. The species has high site fidelity and is known to persist in small, isolated areas even within urban environments suggesting

that edge effects are less relevant to this species than direct habitat removal at least in the short to medium term.

#### **4.5.2 Indirect impacts**

There are no indirect impacts proposed to SLL habitat as explained above. There are also no recent records in the local area making indirect impacts unlikely.

#### **4.5.3 Distance of works to known habitat**

The proposed development is 15 kilometres from the nearest recent record, from near the Western Grassland Reserve in 2011. Potential habitat for SLL occurs contiguously with the proposed development but this has not been surveyed.

#### **4.5.4 Impacts likely to be unknown, unpredictable or irreversible**

The impacts are well documented and it is unlikely that there will be additional or unforeseen impacts given that the species is unlikely to be present.

### **4.6 Straw-necked Ibis**

#### **4.6.1 Direct impacts**

There are no proposed impacts to wetland habitat associated with Straw-necked Ibis records. The proposed development will result in the permanent removal of 35.7 hectares of native and introduced grassland vegetation none of which is habitat of value to this species (Figure 6).

#### **4.6.2 Indirect impacts**

There are no indirect impacts to wetland habitat (See Section 4.6). The Paul and Belfrage's swamp is being protected from construction impacts by restricting vehicle movements to the access road only i.e. the farm track that can be seen near the swamps will not be used by the YJC facility or its contractors. The stormwater management plan and associated MUSIC model has determined that runoff from the access road and facility will not exceed background levels.

#### **4.6.3 Distance of works to known habitat**

Known habitat for Straw-necked Ibis occurs within the Western Treatment Plant, 4 kilometres to the south of the construction area (Figure 18). However, the YJC facility is separated by the Princes Freeway from this habitat.

#### **4.6.4 Impacts likely to be unknown, unpredictable or irreversible**

The impacts are well documented and it is unlikely that there will be additional or unforeseen impacts given that the species are unlikely to be present and no habitat is present within the construction area.

### **4.7 Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar site**

#### **4.7.1 Direct impacts**

The proposed development will remove 35.7 hectares of native and introduced grassland vegetation from within the Ramsar site. While the replacement of vegetation with built facilities will change the land use of the local area, this is in the context of an already highly developed catchment and so the proposed development does not reach the threshold for any of the significant impact criteria listed for Ramsar wetlands (DoE 2013).

#### 4.7.2 Indirect impacts

There are no proposed indirect significant impacts to the Ramsar site.

**During construction:** Any use of potential toxicants or contaminants used during construction, including sediments and siltation, will be managed by the Construction Site Environmental Management Plan to EPA requirements.

**Post construction:** The development will not result in changes to the hydrological regime of the wetland or a measureable change in the water quality of the wetland. *"The proposed Stormwater Management Strategy for the development has been developed incorporating water sensitive urban design (WSUD) principles. The water quality objectives match the EPA Victoria Urban Stormwater Best Practice Environmental Management Guidelines (BPEMG). Stormwater from the Access Road will be retarded back to pre-development rural levels before discharging to existing surface and to the swamp to the south (Paul & Belfrages Swamp) or drained to the south, to Princes Freeway. The low flows and volumes are expected to show that the existing flow regime is not compromised including environmental flow requirements per Department of Environment, Land, Water and Planning"* (HDR 2018, Appendix 3).

There are no proposed contaminants other than those common in an urban environment during operation. The MUSIC model in the stormwater management plan states that discharge of common contaminants – Total Suspended Solids, Total Nitrogen, Total Phosphorus and Litter – will meet or exceed all minimum stormwater management objectives required by Melbourne Water (Appendix 3). Requirements for detention will also be met or exceeded with no anticipated change to groundwater recharge and associated dryland salinity risks.

The weed risk to the Ramsar site is no higher than under current agricultural and industrial uses. Weeds are most commonly introduced by stock and machinery. The YJC facility area including the area near Paul and Belfrages swamp is already used for livestock grazing under the approved Melbourne Water Land Use Strategy. Weeds will be managed during and post-construction according to Section 2.11.7.

No significant impact on any listed wetland birds, including migratory species, or their habitat is considered to be plausible by the construction of the YJC facility. The existing conditions show that much of the land within the Western Treatment Plant is currently used for agriculture including irrigated maize production. Cropping entails the addition of fertiliser and herbicides and irrigated agriculture in some of the paddocks produces high levels of runoff captured in irrigation channels. Thus the existing land use has far greater implications for water quality than the proposed YJC facility, which will not be adding to the chemical load of the wetlands.

#### 4.7.3 Distance of works to known habitat

The proposed construction area is within the Ramsar site.

#### 4.7.4 Impacts likely to be unknown, unpredictable or irreversible

The impacts are well documented and it is unlikely that there will be additional or unforeseen impacts. The Construction Site Environmental Management Plan will manage short term soil disturbance impacts. The introduction of hard surfaces into the Ramsar site would be reversible if the site was decommissioned but substantial investment in rehabilitation would be needed to reinstate the native grassland so this removal is considered irreversible until grassland reconstruction techniques improve.

## **4.8 Growling Grass Frog**

### **4.8.1 Direct impacts**

Since there is no Growling Grass Frog present within the construction area, no direct impacts are proposed for this species.

### **4.8.2 Indirect impacts**

There are no proposed indirect impacts to wetland habitat (See Section 4.6).

### **4.8.3 Distance of works to known habitat**

The nearest Growling Grass Frog record to the YJC facility area is 2.5 kilometres south of the YJC facility at Ryans Swamp Wetland, south of Princes Freeway (Figure 19).

### **4.8.4 Impacts likely to be unknown, unpredictable or irreversible**

The impacts are well documented and it is unlikely that there will be additional or unforeseen impacts given that no habitat for this species is present.

## **4.9 Existing conservation buffers from EPBC 2008/4221**

### **4.9.1 Direct impacts**

The integrity of all linear 30 metre conservation buffers on each side of all drainage lines will be maintained during construction and post-construction during the operational phase. There will be three small incursions into the buffers during the construction phase to install the services easement (Figure 5). For the two dryland crossings (described in detail in Section 2), the total area of soil disturbance within the buffer will be 0.12 hectares for each crossing (or 20 metres width by 60 meters of the buffer). This will be a temporary disturbance lasting not more than a few days where the services easement is excavated, the pipes installed and then the soil returned to the excavated area. These works will be undertaken during dry conditions where soil damage and erosion risk is lowest. The managing contractor will be responsible for implementing the Construction Site Environmental Management Plan during construction.

### **4.9.2 Indirect impacts**

There are no proposed indirect impacts to the conservation buffers that exceed existing conditions. The stormwater management plan has been designed so that runoff from the YJC facility is no different from natural levels. The existing conditions show that the land surrounding the buffers has been cropped right to the edge of the buffer or has been subject to grazing disturbances. Cropping entails the addition of fertiliser and herbicides to the areas surrounding the buffers and irrigated agriculture in some of the paddocks produces high levels of runoff. Thus the existing land use has far greater implications for water quality than the proposed YJC facility, which will not be adding to the chemical load of the wetlands.

### **4.9.3 Distance of works to known habitat**

Not applicable.

### **4.9.4 Impacts likely to be unknown, unpredictable or irreversible**

The impacts are well documented and it is unlikely that there will be additional or unforeseen impacts. The incursions into the buffers will be very short term and reversible. No long term or irreversible impacts are anticipated.

#### **4.10 Data and information used to assess the impacts**

The extent of the NTGVWP and occurrence of GSM habitat have been documented in EHP (2017), Biosis (2017, 2018a, 2018d). The impact is clear since the proposed development will result in complete removal of all NTGVWP and GSM habitat in the construction area.

## 5. Proposed Avoidance and Mitigation Measures

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*The preliminary documentation must provide information on proposed avoidance and mitigation measures to prevent or minimise impacts to the MNES addressed at Section 3 that are likely to be impacted by the proposed action. A consolidated list of proposed avoidance and mitigation measures must be provided, based on best available practices and must include, but not be limited to, the following elements:*

*a) A detailed description of the measures proposed. This must include relevant protocols, the name of the agency responsible for each measure, and the location(s) and timing for each measure.*

*b) A statement addressing the environmental objectives/outcomes the measures are expected to achieve. This must include details of any baseline data, performance criteria, monitoring, reporting and corrective actions proposed to demonstrate progress towards achieving these objectives.*

*For further information on outcomes-based conditions please see relevant Departmental policy documents at:  
<http://www.environment.gov.au/epbc/publications/outcomes-based-conditions-policy-guidance>.*

*c) A description (including maps) of the location, boundaries and size (in metres) of the existing riparian and conservation buffer imposed by the conditions of the approval for EPBC 2008/4221, and details on how this area will be excluded or protected.*

*d) A description (including maps) of the location, boundaries and size (in metres) of any buffer areas for proposed exclusion zones or conservation purposes and details on how these areas will be excluded or protected.*

*e) An assessment of the expected or predicted effectiveness of the measures proposed.*

*f) Details of any statutory or policy basis for the measures proposed.*

*g) Measures for all project phases (construction, operation, decommission) of the proposed action.*

*h) Details of ongoing management, including research and monitoring programs to support an adaptive management approach and determine the effectiveness of the measures proposed.*

*i) An assessment of the achievability of the measures proposed, including affordability.*

*j) A description of any proposed rehabilitation to disturbed habitat areas, including management, methodology and timing.*

*Specific measures can be presented in the form of a management plan, such as an Environmental Management Plan, Conservation Management Plan and/or a Construction Environmental Management Plan specific to the proposed action. At a minimum, the plan must include a detailed outline that sets out the framework for the management, mitigation and monitoring of relevant impacts of the action, including provision for independent auditing.*

*Plans must include details of the key commitments and measures to ensure that impacts to relevant MNES are avoided and minimised. Plans should refer to relevant conservation advices, recovery plans, threat abatement plans, and other guidance documents published by the Department.*

*To assist you, the Department's Environmental Management Plan Guidelines 2014 are available at:  
[www.environment.gov.au/epbc/publications/environmental-management-plan-guidelines](http://www.environment.gov.au/epbc/publications/environmental-management-plan-guidelines).*

## 5.1 Summary of avoidance and mitigation measures

The proposed avoidance and mitigation measures for the development are summarised below in Table 12 and detailed in the following sections. More details on the assessment process used to determine the avoidance and mitigation measures can be found in Sections 1 and 2.

## 5.2 Avoidance measures

Avoidance measures are those measures that have resulted in impacts to MNES being avoided altogether. These have been achieved through a combination of the siting of the development (Sections 2.5 and 2.6), design development and changes to construction methods (Figure 5). These are described below.

### 5.2.1 NTGVVP

- All NTGVVP in the northern section of the DJR land holding has been avoided by restricting construction to one rectangular area in the south of the land holding. This has allowed the retention of 32.45 hectares of NTGVVP.
- The services easement was chosen to avoid all NTGVVP south of the Princes Freeway – the services easement does not add any impacts to NTGVVP (except for timestamped MSA data).
- All materials, plant and equipment, and vehicles will be restricted to the designated construction area, avoiding all impacts to NTGVVP adjoining the site, which will be designated as no-go zones in the CSEMP.

### 5.2.2 GSM

- All GSM habitat in the northern section of the DJR land holding has been avoided by restricting construction to one rectangular area in the south of the land holding. This has allowed the retention of approx. 32.5 hectares of GSM habitat.
- The services easement was chosen to avoid all GSM habitat south of the Princes Freeway – the services easement does not add any impacts to GSM habitat (except for timestamped MSA data).
- All materials, plant and equipment, and vehicles will be restricted to the designated construction area, avoiding all impacts to GSM habitat adjoining the site, which will be designated as no-go zones in the CSEMP.

### 5.2.3 Ramsar site

- All wetland areas within the Ramsar site are avoided by the proposed development.

### 5.2.4 30 metre conservation buffers

- The conservation buffer to the north west of the YJC facility has been excluded from the facility and will not be impacted by the development (Location 1 on Figure 5). It will be fenced and designated a no-go zone in the CSEMP.
- The YJC facility and access road have no impact on conservation buffers.

## 5.3 Minimise measures

Minimise measures are those that enable impacts to MNES to be restricted to the smallest extent possible. These have been achieved through a combination of building design and alterations to construction methods, as described below (Figure 5).

### **5.3.1 NTGVVP**

- Two storey construction methods for facilities throughout the site to reduce footprint on the site.
- Prefabricated systems employed to minimise construction waste and construction program.
- Future expansion needs for the facility have been forecast at this time so that no further expansion or impacts should be necessary to maintain and operate the facility.
- Weed introduction and spread will be minimised using CSEMP to implement requirements to minimise soil removal and ensure vehicle hygiene protocols. Landscaping plantings will use locally indigenous species.

### **5.3.2 GSM**

- Two storey construction methods for facilities throughout the site to reduce footprint on the site.
- Prefabricated systems employed to minimise construction waste and construction program.
- Future expansion needs for the facility have been forecast at this time so that no further expansion or impacts should be necessary to maintain and operate the facility.

### **5.3.3 Ramsar site**

- Stormwater management plan designed using WSUD principles and will result in stormwater detention and release commensurate with background levels.
- Two storey construction methods for facilities throughout the site to reduce footprint on the site.
- Prefabricated systems employed to minimise construction waste and construction program.
- Future expansion needs for the facility have been forecast at this time so that no further expansion or impacts should be necessary to maintain and operate the facility.

### **5.3.4 30 metre conservation buffers**

- All proposed works maintain the integrity the linear riparian buffers with only minor perpendicular incursions into the buffers (Location 2, 3 and 4 on Figure 5). That is, the width, length and connectivity of the buffers are not impacted in any way. Very short term trenching works will be undertaken within the buffers but the infrastructure installed will be underground pipelines without any short, medium or long term impacts to the functioning of the buffers.
- Services easement restricted to minimum width possible while still allowing sufficient space for construction so that no-go zones can be maintained.
- Horizontal directional drilling will be used as a first option to avoid all impacts to beds and banks of Lollypop Creek where the services easement traverses the creek at Old Boundary Road.
- Construction Site Environmental Management Plan will manage short term soil disturbance arising from cut and fill trenching where buffers are traversed by services easement. Works will only be undertaken in dry conditions.

## **5.4 Mitigation Measures**

General mitigation measures additional to avoid and minimisation measures described above, reduce the impacts of the development on the environment in general, as described below.

#### **5.4.1 Design treatment measures**

- Implementation of the requirements for sustainable building design for DJR facilities as described in the internal DJR document *Sustainability Guidelines for Capital Works* (Appendix 6).
- The re-use of excavated basalt and indigenous grassland flora has been used within the master plan design to effectively communicate the vernacular and former usage of site as well as minimise resource use and potential for weed introductions.
- The design utilises permeable pavement technologies in the car parks in order to improve stormwater treatment outcomes on the site. Porous asphalt and permeable pavers are to be used to achieve this.
- Pedestrian paths outside of the youth movement zones are to be constructed of re-used crushed rock excavated from the site.
- All playing court bases will be constructed on top of re-used excavated compacted crushed rock from the site.

#### **5.4.2 Construction and post construction measures**

- Construction and post-construction mitigation measures will include compliance with best practices for the control of construction works adjacent to waterways and to minimise the movement of sediment and other pollutants away from the construction zone (EPA 1996, amended, EPA 1991, EPA 2004). This mitigation measure will protect all land surrounding the proposed construction area associated with the YJC facility.
- These measures include the maintenance of vehicle quarantine procedures to ensure vehicles entering the site are free of contamination from soil and plant material foreign to the works area.
- The works zone will be clearly defined and all areas outside this zone will be defined as a no go zone. No activities, including materials storage, vehicle parking, site offices etc., will be placed in areas beyond the defined work zone. Compliance with the retention of activities within the defined work zone will be monitored on a weekly basis. The contractor will report on that compliance to DJR on a weekly basis during the construction period.

### **5.5 Responsibility for proposed measures**

The DJR will have ultimate responsibility for meeting performance criteria in accordance with the environmental objectives and mitigation measures, including satisfying requirements for monitoring and reporting and, should any incidents occur, ensuring they are addressed and appropriate corrective actions are taken in a timely manner.

The principal construction contractor will be responsible for ensuring that specified performance criteria are met on a day-to-day basis.

### **5.6 Statutory or policy basis**

The statutory or policy basis for the proposed avoidance, management and mitigation measures includes:

- *Environment Protection Biodiversity Conservation Act 1999* (Commonwealth);
- *Aboriginal Heritage Act 2006* (Victoria);
- *Catchment & Land Protection Act 1994* (Victoria);

- *Environment Protection Act 1970* (Victoria);
- *Flora & Fauna Guarantee Act 1988* (Victoria);
- *Planning & Environment Act 1987* (Victoria); and
- *Victorian Country Fire Act 1958* and Regulations (Victoria).

## 5.7 Risk, mitigation measures and target outcomes

A summary of potential risks, associated mitigation measures and proposed target outcomes are outlined in Table 12.

**Table 11 Summary of risks and mitigation measures**

| Relevant impact                                                                                                                                 | Mitigation measures                                                                                                                                                                                                                                                                                       | Target outcome                                                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Pre-construction phase</b>                                                                                                                   |                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                              |
| <b>Direct loss of GSM habitat and NTGVVP</b>                                                                                                    | Minimise project footprint through design. Provide offsets in accordance with the EPBC Act Environmental Offsets Policy (DSEWPac 2012).                                                                                                                                                                   | Residual impact to 35.66 ha of GSM habitat and 28.23 ha of NTGVVP. Offset calculated and provided in accordance with DSEWPac (2012).                                                         |
| <b>Construction phase</b>                                                                                                                       |                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                              |
| <b>Direct loss of NTGVVP and GSM habitat beyond the approved limits of works</b>                                                                | Clear delineation of works area. Pre-works induction and training. Compliance with works area perimeter surveillance plan.                                                                                                                                                                                | No removal of native vegetation beyond that authorised for removal within the project Limit of Works.                                                                                        |
| <b>Disturbance to NTGVVP and GSM habitat by pests, weeds and pathogens</b>                                                                      | Protocols for prevention of weed and pathogen spread to be specified in the environmental controls governing the construction contract, including treatment of existing weeds prior to ground disturbance, equipment cleaning procedures, reuse of topsoil and no movement of topsoil between work zones. | No disturbance to native vegetation beyond that authorised for removal within the project Limit of Works. No establishment of new high threat weeds or soil pathogens within the works area. |
| <b>Disturbance to NTGVVP, GSM habitat &amp; Ramsar wetlands beyond the approved limits of works by surface runoff, erosion or sedimentation</b> | Protocols for management of stormwater, drainage, sedimentation and erosion to be consistent with the relevant EPA guidelines (EPA 1991, 1994, 2004).                                                                                                                                                     | No removal or disturbance to native vegetation beyond that authorised for removal within the project Limit of Works.                                                                         |
| <b>Disturbance to NTGVVP and GSM habitat beyond the approved limits of works by chemical or fuel spills</b>                                     | Procedures for chemical and fuel storage, handling and spill response to be specified in the works contract.                                                                                                                                                                                              | No disturbance to native vegetation beyond that authorised for removal within the project Limit of Works.                                                                                    |

| Relevant impact                                                                                                 | Mitigation measures                                                                                             | Target outcome                                                                                             |
|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <b>Post-construction phase</b>                                                                                  |                                                                                                                 |                                                                                                            |
| <b>Disturbance to NTGVVP and GSM habitat beyond the approved limits of works from site reinstatement works.</b> | The works contract will include protocols for site rehabilitation and reinstatement, including weed monitoring. | No disturbance to native vegetation beyond that authorised for removal within the project Limits of Works. |

## 5.8 Exclusion and buffer zones

The project "Limit of Works" will be set out at each works site. This will be consistent with the project footprint as defined in Figure 2 and marked on a set of the contract drawings (plans). These marked contract drawings identify the works zones (within the Limit of Works) and areas that are No Go Zones (outside of the Limit of Works) that must be complied with for the duration of the Contracted works.

Under the Contract, the establishment of the project worksite Limit of Works (No Go Zones) is a Contract Hold Point. This Hold Point can only be released enabling native vegetation removal and construction activities to commence once the Limit of Works have been established and delineated in accordance with the Contract specification to DJR satisfaction. These requirements will also be established in the DJR Contract Surveillance Plan for site inspection and monitoring.

DJR will ensure that:

- Prior to commencement of any works, a project site induction(s) for the Contractor and DJR staff is completed. This induction will include communication about the Project approvals / permits conditions, contract environmental requirements, authorised native vegetation / tree removal clearances, fauna management, defined "Limit of Works" for authorised native vegetation removal and 'No Go Zones';
- Prior to commencement of any works, the Limit of Works (No Go Zones) (e.g. native vegetation adjoin works footprint) are established and clearly marked with as a minimum, wooden stakes with flagging tape / and or rope bunting. A joint inspection by DJR Project management staff, Contractor representatives and Surveillance staff will not let work commence until the Limit of Works have been established and delineated in accordance with the Contract specification;
- Construction activities, including vehicle / Plant parking, turn around points or temporary storage areas, do not occur outside the Limit of Works (i.e. enter No Go Zones);
- Construction activities are audited through weekly onsite inspections to ensure that construction impacts do not extend beyond the established Limits of Works; and
- Regular inspection of the Limit of Works, barriers and other environmental controls, including silt traps, compounds etc. carried out and recorded in the Surveillance Plan.

## 5.9 Proposed landscaping and rehabilitation

All works under the Contract will require the rehabilitation of disturbed areas outside the YJC facility perimeter fencing. Topsoil and organic mulch from within each construction zone section of works will be retained and reused to rehabilitate relevant areas. This will ensure that existing topsoil seed bank is used in site rehabilitation.

Topsoil from each construction zone area will not be spread or shared between works zones.

Any grass re-seeding works outside the YJC facility perimeter fencing will require that any grass seed used is consistent with the existing native vegetation values of the works site(s).

Any seeding with exotic grasses outside the YJC facility perimeter fencing is restricted to only using sterile rye grass to provide a top cover for site erosion protection where required.

## **5.10 Expected achievability and effectiveness of avoidance and mitigation measures**

NTGVVP and GSM will be the only MNES where impacts by the proposed works reach the thresholds for significant impacts. The impact upon habitat has been avoided and minimised through the design process to achieve a balance between the impact and the effectiveness and functionality of the works. The workability of the construction site allowances (e.g. access road construction impacts can be constrained to the allowed width of 22 metres) has been confirmed by the managing contractor.

The proposed management and mitigation measures will constrain impacts on NTGVVP and GSM habitat to the greatest extent (defined by the approved Limit of Works and authorised native vegetation removal) required for the project to achieve the defined construction outcomes.

All mitigation, monitoring and management measures proposed in this document have been designed to be achievable throughout the duration of this project, and have been used by other government departments and their contractors in similar construction projects. The mitigation measures are achievable, and construction contracts routinely include clauses to ensure compliance with environmental management requirements.

## **5.11 Monitoring and independent auditing**

DJR will undertake monitoring and surveillance during the project works to ensure compliance with mitigation measures and the conditions of Contract, as per standard contract management procedures.

There are several hold points, requiring satisfactory demonstration of compliance before further work can be undertaken by a contractor. At each hold point, the site will be inspected by the surveillance officer, DJR project engineer and an environmental representative, contractors representative and an independent ecologist (as required).

Key hold points relating to environmental management are:

- 1 Adoption of the Environmental Management Framework (EMF) (Appendix 11) by the contractor.
- 2 Establishment and marking of the project Limit of Works.

The DJR surveillance officer will undertake regular inspections of the worksite to ensure no works, or vegetation disturbance, are conducted beyond the approved Limit of Works.

The contractor's environmental management framework (Appendix 11) will also include procedures for day to day monitoring by the contractor to ensure compliance with approval conditions and conditions of Contract.

## 6. Residual significant impacts and proposed offsets

*The preliminary documentation must also provide details of:*

- a) The likely residual impacts on MNES discussed at Section 3 that are likely to occur after proposed avoidance and/or mitigation measures are taken into account. If applicable, include the reasons why avoidance or mitigation of impacts cannot be reasonably achieved.*
- b) If relevant, an offset package to compensate for residual impacts to MNES. This should consist of an offset proposal (Offset Strategy) and key commitments and management actions for delivering and implementing a proposed offset (e.g. an Offset Management Plan). Please note the strategy and management plan should be prepared as two separate documents.*

*The proposed offset must meet the requirements of the Department's EPBC Act Environmental Offsets Policy (October 2012) available at: [www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy](http://www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy).*

*The package must include, but not be limited to, the following:*

- i. A description of the offset site(s) including location, size, condition and environmental values present.*
- ii. Justification of how the offset package meets the EPBC Act Environmental Offsets Policy.*
- iii. An assessment (and justification for each input used) of the offset site(s) using the Department's Offset Assessment Guide available at: [www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy](http://www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy).*
- iv. Details on how the offset will be secured, managed and monitored, including management actions, responsibility, timing and performance criteria. This should include the specific environmental outcomes to be achieved from management measures.*

### 6.1 Residual impacts

The location of the YJC facility is determined by the existing and future fixed locations of a number of other infrastructure and developments including:

- the OMR on the eastern boundary which has been approved under the MSA;
- an existing farm to the north which requires a defined buffer from residential developments;
- the existing quarry and Wyndham refuse centre to the north east; and
- a future quarry site to the west of the site (Figure 4).

The location of the YJC facility was therefore located based on the restrictions and the location of the lowest potential impact on the ecological values of the site defined by EHP (2017).

Construction of the YJC facility will require the removal of NTGVVP and confirmed habitat for GSM. Residual impacts, after the consideration of these constraints amounts to those described in Section 4.1:

- 28.23 ha of NTGVVP; and
- 35.66 ha of GSM habitat.

### 6.2 Offsets assessment guide inputs and results

#### 6.2.1 NTGVVP

The methods for mapping and quality assessment of NTGVVP for input into the offsets assessment guide are provided in Section 3.2. Using the offsets assessment guide, impacts associated with the loss of 28.23 ha of NTGVVP have been assessed as requiring an offset of 122.0 ha (4.3 times the loss) under the assumptions identified in the EPBC Act offset calculator provided in Appendix 7.

## Impact calculator

The "Area of Community" component were an Area of 28.23 hectares based on the assessment detailed in Section 3.2. The Quality was 6/10 over the total 28.23 hectares reflecting the moderate quality of the site. That is, the site is large and retains some of the original rocky landforms and cryptogam cover but has low species diversity, does not support any threatened species other than GSM and has varying amounts of weediness, up to 40% weed cover in some places (Section 3.2). These inputs produces a quantum of impact calculation totalling 16.94 ha (Appendix 7).

## Offset calculator settings

Other settings in the offset calculator are as follows. The risk related time horizon for the offset is set at its maximum level of 20 years. This parameter deals with the life of the offset which is otherwise capped at 20 years. As offsets are protected in perpetuity the maximum value has been selected.

Offset site management plans typically cover the initial 10 year management period for a site and therefore the time until ecological benefit is set at 10 years.

The site quality score of the potential offset sites is set at 6/10, with both offset sites providing comparative and more intact examples of NTGVVP than the NTGVVP being removed by the development. The quality scores entered were conservative. The main difference between the impact site and the offset site was higher plant species diversity at the offset site. i.e. most of the score comes from characteristics common to all NTGVVP (native perennial tussock cover, lack of weeds, intact basalt rock, large patch size and landscape context). The scores in the offset assessment guide only give whole integers so there is little scope for detecting the smaller differences. The use of a quality score of 6/10 gives an offset amount 4.3 times the impact area, which is the expected increase in area. Based on assessment against the criteria in How To Use the Offsets Assessment Guide, there is no reason to give one property a better score than the other and only one calculator was used.

We have followed the How To Use the Offsets Assessment Guide document which states that "*Future quality without offset* is the estimate of the habitat quality at this future time based on a business as usual scenario". For both properties, a business as usual scenario would be one based on that land being used as part of a farm, as it has been for the past 150 years. The quality of such areas when managed in a manner with little or no consideration for the biodiversity values can deteriorate very quickly. In Victoria, there are no restrictions to practices such as the application of fertiliser, high stocking rates, seeding areas with exotic pasture or changing the type of animal traditionally raised within a property (i.e. changing from sheep to cattle or horses). All of such practices are considered as of right uses associated with farming land, whether or not such areas support native vegetation. While remnants of NTGVVP within an agricultural setting may have survived the development of agricultural land around them, the gradual increase in weed cover, the number of weed species, nutrient loads etc. can result in the rapid loss of vegetation quality in response to changes or disturbances (i.e. fire and drought). A decline in condition from a score of 6/10 to 3/10 is considered conservative for a 10 year period. A score of 3 could be achieved within one season with a change farm management. That is, if weed control was not undertaken, a spell of heavy grazing was undertaken at the wrong time of year, or superphosphate fertilizer was applied. Any one of these actions would lead to an increase in weed cover, decrease in native tussock cover and decrease in native plant diversity and be allowed under current regulations.

The future quality with offset for the nominated offset vegetation is retained at a score of 6/10. This decision is based on experience which dictates that the effort required to improve the quality of a grassland already in quite good condition is extreme and a good result for active ecological management over a ten year period is stasis.

The risk of loss for the vegetation without the offset is set at 10%. This is based on the existing land-use (grazing) and the low likelihood that these areas of native vegetation would be cleared in the next 20 years, since it is protected under national environment law. However, remnants such as these are still illegally or inadvertently cleared, so there is still some residual risk of loss given that the site does not have formal protection. The proposed offset would continue to be used for grazing purposes if not protected under a legal mechanism. While Victoria's native vegetation clearing regulations offer some existing protection to the native vegetation within the proposed offset site, continued agricultural and other as of right uses such as grazing may lead to its continued degradation.

The risk of loss with offset is set at 1% because the site would be protected in perpetuity and the relatively low probability of the vegetation deteriorating in the presence of active management to promote the improvement of native vegetation through active weed control works and biomass management. The risk is not considered zero as there is a small probability that the invasion of new high threat weeds or the influence of climate change could have negative impacts on this vegetation.

These assessments are made with a relatively high degree of confidence (set at 90%) because of observations associated with other NTGVVP offsets in Victoria's western district. Similarly, there is a high confidence (90%) for the time to ecological benefit being achieved based on observations from similar management regimes for NTGVVP offset areas managed under Trust for Nature covenants. As required by the offsets assessment guide, this is an estimation based on experience and not a statistical confidence interval. The confidence in the result reflects our long experience in using the offset calculator, preparing OMPs and undertaking follow up monitoring. The OMPs aim to maintain grassland quality over the Time horizon and avert further loss. Based on our experience, if OMPs are implemented as written, then a high degree of confidence can be afforded to these measures in achieving the outcome of maintain grassland quality. If there was not a high degree of confidence in the result, the properties would not be included in the offset strategy.

Based on the assumptions outlined in these spreadsheets an offset(s) protecting 122.0 ha of NTGVVP would satisfy the current policy requirements for the loss of the 28.23 ha of NTGVVP of various condition categories, contained in the footprint of the YJC facility. The outputs of the offset calculator for NTGVVP using these parameters identifies a total offset prescription of 122.0 ha as providing in excess of a 100% direct offset.

### **6.2.2 Golden Sun Moth**

The methods for mapping and quality assessment of GSM habitat for input into the offsets assessment guide are provided in Section 3.4. Using the offsets assessment guide, impacts associated with the loss of 35.66 ha of GSM habitat have been assessed as requiring an offset of 154.1 ha (4.3 times the loss) under the assumptions identified in the offset calculator provided in Appendix 7.

#### **Impact calculator**

The "Area of Habitat" component were an Area of 35.66 hectares based on the assessment detailed in Section 3.4. The Quality was 6/10 over the total 35.66 hectares reflecting the moderate quality of the site. That is, the site is large and supports adequate cover of food plants to support a population, however it is currently managed for agricultural purposes such that weed and biomass management are not undertaken with the aim of improving GSM habitat. Thus grassland openness and weed control could be improved as well as limiting disturbance from livestock during the flight season. The site is currently isolated by development and pending development (i.e. existing cultivated land and the proposed OMR). These inputs produces a quantum of impact calculation totalling 21.40 ha (Appendix 7).

## Offset calculator settings

Again, the risk related time horizon for the offset site has been set at 20 years with the time until ecological benefit set at 10 years to match the timeframe of the OMP.

The site quality score of the potential offset site is set at 6/10 based on the presence of a large population of GSM within an area of modified but suitable habitat otherwise imbedded within a broader area of unsuitable habitat. It is proposed that sufficient evidence in the form of GSM records have been provided for each property to confirm the presence of GSM. Both properties have high quality habitat (large areas of *Austrostipa* spp. and *Rytidosperma* spp. dominated grassland), both properties have a high landscape score with both offset sites being embedded in a landscape with other offset sites and native grassland, and both properties have a similar density of moths recorded (hundreds of moths recorded from both properties). Based on this assessment against the criteria in How To Use the Offsets Assessment Guide, there is no reason to give one property a better score than the other and only one calculator was used. Again scores were conservative and the equivalence of both sites was factored into the offsets strategy.

We have followed the How To Use the Offsets Assessment Guide document which states that “*Future quality without offset* is the estimate of the habitat quality at this future time based on a business as usual scenario”. For both properties, a business as usual scenario would be one based on that land being used as part of a farm, as it has been for the past 150 years. Again, given the agricultural nature of such habitat, it has the potential to suffer significant declines in condition within a relatively short period of time. Potential changes which could readily influence the population include over-grazing, a change in the type of animals grazed (changing from sheep to cattle) or the application of superphosphate which would significantly alter the ground cover species composition. That is, if weed control was not undertaken, a spell of heavy grazing was undertaken at the wrong time of year, or superphosphate fertilizer was applied. Any one of these actions would lead to an increase in weed cover, decrease in native tussock cover and decrease in native plant diversity and be allowed under current regulations. The future quality of such a site without offset is therefore set at 3/10.

As with the other MNES discussed above it is considered relatively difficult to improve the quality of habitat. However in this instance the elevated level of weed control and permanent application of targeted management to improve the habitat for Golden Sun Moth, the future quality with offset is readily maintained at 6/10.

Given the persistence of GSM in the offset environment and the extent of change required to remove this species, the risk of loss without offset is set relatively low at 10%. When such a site is secured for an offset the risk of loss is set at 1% because the site would be protected in perpetuity and the relatively low probability of the vegetation deteriorating in the presence of active management to maintain this habitat in appropriate condition through active weed control works and biomass management. The risk is not considered zero as there is a small probability that the invasion of new high threat weeds or the influence of climate change could have negative impacts on this vegetation.

Again these assumptions are provided with a relatively high degree of confidence (set at 90% for both risk and quality settings) based on our observations over time in areas managed for the protection and maintenance of GSM populations. . As required by the offsets assessment guide, this is an estimation based on experience and not a statistical confidence interval. The confidence in the result reflects our long experience in using the offset calculator, preparing OMPs and undertaking follow up monitoring. The OMPs aim to maintain grassland quality over the Time horizon and avert further loss. Based on our experience, if OMPs are implemented as written, then a high degree of confidence can be afforded to these measures in achieving the outcome of maintain grassland quality. If there was not a high degree of confidence in the result, the properties would not be included in the offset strategy.

Based on the assumptions outlined in the relevant spreadsheet, an offset protecting 154.1 ha of GSM habitat would satisfy the current policy requirements (i.e. provide a 100% or greater direct offset).

## 6.3 Offset Strategy

The residual impacts will be offset in accordance with the EPBC Act Environmental Offsets Policy (DSEWPac 2012).

External offsets are proposed for MNES which are impacted by the project. While preferred offset options have been identified and the manner in which these offsets would be secured, managed and monitored has been defined in relatively specific terms, DJR prefers to operate in an approval process driven by outcomes. In that context the identified offset options could change, subject to the approval of the Australian Government Minister for the Environment, should better and/or more cost effective options become available to achieve the same outcome, although at this late stage in the approvals process this is unlikely.

Offset Management Plans (OMPs) have been prepared for the relevant MNES identified in association with each offset site.

### 6.3.1 Offset amounts

Offsets provided for NTGVVP are also anticipated to support GSM. Providing the offset area of 122.0 hectares of NTGVVP supporting GSM would therefore satisfy most of the both GSM and NTGVVP offsets concurrently (Appendix 7). A further 32.1 of GSM habitat would also need to be identified to satisfy the remaining GSM habitat requirement. GSM habitat can be other native grassland supporting the species but not meeting the standards of NTGVVP or predominantly introduced vegetation known to support a population of GSM.

### 6.3.2 Identification of offset sites

Given the large size of the offset required and state government procurement requirements, all offsets brokers registered with DELWP were invited to provide quotes to provide the required offset. Two quotes were received and the quote that provided the most cost effective option was chosen. Both quotes were for properties outside of Melbourne, with such a large area not available within Melbourne. A due diligence inspection of the property was undertaken by Biosis. On inspecting the property, it was determined that the property could not satisfy all offset requirements for NTGVVP but could provide approximately one fifth of the offset requirements as well as the 32.1 hectares of GSM habitat that did not need to meet the requirements of NTGVVP. The remaining NTGVVP would therefore need to be sourced from a less cost effective source provided by the second quote.

The following table shows the offset availability at the two properties identified.

**Table 12 Proposed residual impacts and offsets for MNES, Cherry Creek, Victoria.**

| MNES               | Residual impact (ha) | Offset requirement total (ha) | Offset availability at Property 1 (Chepstowe) (ha) | Offset availability at Property 2 (ha) |
|--------------------|----------------------|-------------------------------|----------------------------------------------------|----------------------------------------|
| <b>NTGVVP</b>      | 28.23                | 122.0                         | 22.33 (with GSM)                                   | 99.67 (with GSM)                       |
| <b>GSM habitat</b> | 35.66                | 154.1                         | 32.1 (GSM only)                                    | -                                      |

### 6.3.3 Description of properties

#### Chepstowe

Chepstowe is a large pastoral property in the west of Victoria (500 hectares, Figure 20). It is located within the Victorian Volcanic Plain and supports a range of uses including sheep grazing on native pasture and plantation forestry. The property has several existing offset sites for GSM as well as voluntary conservation covenants that have protected high quality grassland areas. The landholder plans to convert voluntary conservation covenants to offset sites to increase their protection in perpetuity.

#### Property 2

Property 2 is a large pastoral property in the west of Victoria. It is located within the Victorian Volcanic Plain and supports a range of uses including sheep grazing on native pasture and broad-acre cropping. The property has several existing offset sites for NTGVP and GSM as well as areas managed for protection of Spiny Rice-flower. The landholder is proposing to increase protection of areas of high quality native grassland by covenanting the areas for offsets.

#### Comparison of properties

The conservation values of NTGVP and GSM habitat on Chepstowe and Property 2 were very similar, and both sites were considered appropriate and commensurate to be included in the offset strategy. The Vegetation Quality Assessment showed that there was only 2 points difference between the vegetation quality at each site 63.1 for Property 2 and 61.45 for Chepstowe (Appendix 15). There was little difference between the sites other than size when assessed against the conservation values of TSSC (2008) with both sites supporting a diversity of herbs and embedded within a landscape context of larger areas of native grassland (Appendix 15). Both sites have a history of GSM surveys and GSM is consistently recorded on both properties. There are existing GSM records for both of the proposed offset sites (Appendix 15). Based on assessment against the criteria in How To Use the Offsets Assessment Guide, there is no reason to give one property a better score than the other and only one calculator was used. One offset assessment guide (offset calculator) was used for both properties reflecting the similarity and comparability of the two properties.

### 6.3.4 Information from offsets brokers

Each offset broker was requested to provide details of existing surveys and GSM records for the proposed offset sites. Different information was provided for each property. Chepstowe provided spatial data for some of their GSM records and pdf maps of other records. A summary report of all GSM monitoring and records undertaken on the property was later provided to Biosis to support the offset strategy (Abzeco 2018). Abzeco advise that Table 4 shows an error, the error being that results were listed as GSM recorded from only from sub-unit AA in the north of the paddock rather than the entire paddock A (Richard Francis pers. comm.). This report is provided in Appendix 15.

Property 2 provided summary results for all GSM monitoring undertaken in existing offset sites and a letter report confirming GSM have been observed on the proposed offset site. The landholder has requested that these not be provided for public display at this time but have been provided to the proponent and DoEE. These background documents were used to prepare Condition reports for each of the proposed offset sites.

### 6.3.5 Detailed mapping of offset sites

Biosis undertook detailed site inspections and mapping of the extent and quality of mapping of NTGVP and GSM habitat on each property. The site inspections were undertaken by the Biosis Senior Consultant Botanist in May 2018 to map the extent, collect data on condition and take photos of the sites as detailed in the condition reports. The Condition reports are provided in Appendix 15.

### 6.3.6 Description of offset site compliance with EPBC Environmental Offsets Policy (2012)

The offset sites are located outside of the Melbourne area within the Victorian Volcanic Plain. The location outside of Melbourne is justified because the sites meet the definition of NTGVVP provided in DSEWPac (2011b), support confirmed populations of GSM and are large enough to meet the size of the offset requirements. Within Melbourne, impacts to NTGVVP and GSM are being managed through the creation of Melbourne's 15,000 hectare Western Grassland Reserve and a series of conservation reserves defined by the Commonwealth-approved Biodiversity Conservation Strategy (DEPI 2013b). The future reserve system has been designed to provide security to MNES within the Melbourne area and further large areas of NTGVVP within Melbourne were not available at the time of the request for quote to offsets brokers and are unlikely to become available.

Suitable offsets must effectively account for and manage the risks of the offset not succeeding. The offset assessment guide for each MNES (Appendix 7) shows how each offset site complies with the required time to ecological benefit and risk of loss. In addition, the location of the offset across two properties reduces the risk associated with the loss of the offset resulting from unplanned adverse events such as wildfire, floods, disease, weeds etc. Since both properties support large contiguous areas of native vegetation, the split of the offset across two properties is not considered to contribute to the fragmentation of the species/community. The offset area is simply a small subsection of a contiguous population of GSM or ecological community present on each property. The landscape context of each property is more favourable to the species persistence than the impact site, which will be subject to future road building and industrial development. Instead, both properties are located within agricultural landscapes that are not prone to urbanisation pressures. In addition, both properties have existing offset sites demonstrating that the proposed sites occur within a landscape context of conservation management.

Within Chepstowe, the property is divided by a road running east-west between the northern and southern sections of the property. This road reserve is 60 meters wide. The paved surface is 20 meters with the road reserve supporting native grassland contiguous with the northern and southern sections of the property. GSM populations are not considered fragmented until the distance between populations reaches 200 metres (DEWHA 2009b). Therefore it is considered that records of GSM in the northern and southern sections of the property are the same population and that movements of individuals would occur between each side of the road. As a result, fragmentation of GSM is not considered to be present within the Chepstowe property.

### 6.3.7 Clarification of GSM movements

The significant impact guidelines for GSM (DEWHA 2009b) makes it clear that the species may be susceptible to the effects of isolation caused by development. It provides the following information for adult female GSM based on work by Clarke & O'Dwyer (2000):

- Adult females are poor fliers, and most likely walk between tussocks. (Please note that this is a misquote of the original work which stated that females are "reluctant" fliers (Clarke & O'Dwyer 2000)).
- Are unlikely to travel more than 100 m away from suitable habitat patches. Populations separated by distances greater than 200 m can therefore be considered effectively isolated, and sites from which the species has gone extinct are unlikely to be naturally recolonised.

Note that this does not appear to apply to adult male GSM, which the significant impact guidelines states:

- Adult males are capable of active and prolonged flights, and fly about one metre above the ground on hot, sunny and still days searching for females displaying in the grass below (DEWHA 2009b).

The following information is provided in more recent publications suggesting that females are not as vulnerable to isolation as once thought, including this author's observation from Richter *et al.* (2013):

"Females are not often observed flying, although they can fly short distances (usually less than 5 m, but on occasions up to 20 m; author's personal observations). They are more frequently observed perched at ground level or walking rapidly through the grass tussocks as they choose oviposition sites. By contrast, males are very active fliers and are capable of moving distances of several 100 m (authors personal observations)."

Thus it is also noted that "populations separated by distances greater than 200 metres" refers to populations that are physically separated by impassable barriers. GSM both male and female have been observed by Biosis zoologists crossing fences, paddocks and roads between areas of suitable habitat. They can also traverse considerable distance by making multiple consecutive movements throughout a paddock/grassland and are not as far as any evidence exists to suggest, restricted to the area of grassland from which they emerge. GSM have also been observed to fly in windy conditions and are likely to be moved long distances when being carried by winds. So while the isolation distances in DEWHA (2009b) may apply to the urban environment where buildings, solid fences and lack of grassland pose barriers to movement, such barriers to movement are far less likely in rural areas.

## 6.4 Description of offset sites

### 6.4.1 Chepstowe NTGVVP Offset

Chepstowe is on the Victorian Volcanic Plain so is within the required geographic range for NTGVVP. All baseline data has been collected for the offset site and the location and extent of NTGVVP mapped. Areas of NTGVVP are in good condition and display a more intact structure and species composition than the impact site with areas dominated by Kangaroo Grass *Themeda triandra* and a range of native herbs indicative of higher quality grassland, including Blue Pincushion *Brunonia australis*, Milkmaids *Burchardia umbellata* and Lemon Beauty-heads *Calocephalus citreus*. The grassland supported high biomass at the time of the inspection and would benefit from a planned burning regime with strict follow up weed control. Habitat scores were higher than the impact site (Habitat scores of greater than 60/100 or Quality 7 compared to a Habitat score of greater than 50/100 or Quality 6 at the impact site). While weeds are present, the site is in a condition where active, practical and implementable ecological management is capable of controlling existing threats resulting in the gradual improvement in the ecological condition of these sites. A summary of the assumptions used to calculate the various offset prescriptions is provided in Table 14.

The proposed offset site is located in a paddock in which there is already a conservation covenant in place for an offset and supports NTGVVP throughout. Areas of the paddock where weed cover is too high to meet the definition of NTGVVP have been excluded from NTGVVP mapping and only considered offsets for GSM. Therefore, while the mapping shows a mosaic of proposed offsets sites and an existing offset site, this is a continuous area of grassland vegetation with varying quality and protection status (Figure 20). Therefore the proposed offset expands an existing offset site, increasing protection for the MNES by increasing the area of contiguous habitat under protection by TfN covenants.

See Section 3.2 or condition report for a detailed explanation of vegetation assessment methods.

### 6.4.2 Property 2 NTGVVP Offset

Property 2 is on the Victorian Volcanic Plain and is therefore within the required geographic range for NTGVVP. All baseline data has been collected for the offset site and the location and extent of NTGVVP mapped. Areas of NTGVVP is in good condition and display a more intact structure and species composition than the impact site with areas dominated by Kangaroo Grass *Themeda triandra* with an open structure and a range of native herbs, including one MNES Spiny Rice-flower *Pimelea spinescens* subsp. *spinescens* and two species FFG Act listed in Victoria, Small Scurf-pea *Cullen parvum* and Tough Scurf-pea *Cullen tenax*. Habitat scores were higher than the impact site (Habitat scores are greater than 60/100 or Quality 6 compared to a Habitat score of greater than 50/100 or Quality 6 at the impact site). While weeds are present, the site is in a

condition where active, practical and implementable ecological management is capable of controlling existing threats resulting in the gradual improvement in the ecological condition of these sites. A summary of the assumptions used to calculate the various offset prescriptions is provided in Table 14.

The proposed offset site is contiguous with two existing offset sites supporting GSM and NTGVVP with only wire farm fencing separating the offset areas i.e. there are no cleared tracks or other significant disturbance to divide the vegetation between the existing and proposed areas (Figure 21). Thus the proposed offset expands an existing offset site, increasing protection for the MNES by increasing the area of contiguous habitat under protection by TfN covenants.

See Section 3.2 or condition report for a detailed explanation of vegetation assessment methods.

#### **6.4.3 Chepstowe records of GSM**

A summary of GSM records for Chepstowe has been provided by the offsets brokers and is provided in Appendix 8. Recent records are shown on Figure 20.

Area contiguous with NTGVVP (south): The proposed offset site is located in a paddock in which there is already a conservation covenant in place for an offset and supports NTGVVP throughout. Areas of the paddock where weed cover is too high to meet the definition of NTGVVP have been excluded from NTGVVP mapping and only considered offsets for GSM. Therefore while the mapping shows mosaic of proposed offsets sites and an existing offset site, this is a continuous area of grassland vegetation with varying quality and protection status. Thus the proposed offset expands an existing offset site, increasing protection for the MNES by increasing the area of contiguous habitat under protection by TfN covenants. Within this broader area, Abzeco recorded a total of 57 moths in the 2017/18 survey season. This confirms the presence of GSM within the mapped habitat. Abzeco has confirmed that moths were observed flying throughout the paddock and were not restricted to the two GPS point locations recorded at the time of survey. That is, results in Table 4 in Abzeco (2018) apply to all of Paddock A, with the Table 4 showing an error (the error being that results were listed as being only from sub-unit AA in the north of the paddock rather than the entire paddock, Richard Francis pers. comm.). Baseline surveys will be done as part of the OMP.

Area of GSM-only habitat (north): The remaining GSM offset is proposed to be obtained from confirmed GSM habitat in the north of the property. This area was chosen in preference to areas in the south of the property as it displayed topographical features of importance not present in other areas and appeared to be subject to lower sheep grazing pressure than other potential areas. Despite the geographic separation of the GSM-only area of habitat, the two proposed areas are considered part of the same population of GSM. The road dividing the north and south of the property is not considered a barrier to GSM movement such that the GSM population on the property is likely to be a single, interbreeding population with movement of moths between northern and southern sections of the property almost certain. Within this area, Abzeco recorded a total of 122 moths in the 2017/18 survey season. This confirms the presence of GSM within the mapped habitat. Baseline surveys will be done as part of the OMP.

The nominated offsets for NTGVVP at Chepstowe will therefore also contribute an offset of 22.33 ha of GSM habitat. The remaining 32.1 ha of GSM will therefore be secured at adjacent locations within the Chepstowe site (Appendix 8).

#### **6.4.4 Property 2 records of GSM**

A summary of GSM records for Property 2 has been provided by the offsets and has been previously supplied to DoEE.

The existing Property 2 GSM sites have been monitored regularly and accurate records kept and provided as a summary. The records show the number of GSM recorded increasing over time. GSM surveys in an existing offset site, which is contiguous with the proposed offset site, recorded 320 individuals of GSM in

the 2017/18 survey season. This was higher than baseline surveys that recorded 62 moths in the 2015/16 survey season. The proposed offset site is contiguous with confirmed GSM habitat, i.e. it is the same habitat separated by a wire farm fence which does not pose a barrier to GSM, which can fly at least 200 metres at a time (Richter *et al.* 2013). Therefore the proposed offset site is considered confirmed GSM habitat. A written account of GSM in the proposed site is also provided to support the argument the proposed offset site is contiguous with known population and is confirmed habitat. The nominated offsets for NTGVVP at Property 2 will therefore also contribute an offset of 99.67 ha of GSM habitat.

The proposed offset site is contiguous with two existing offset sites supporting GSM and NTGVVP with only wire farm fencing separating the offset areas i.e. there are no cleared tracks or other significant disturbance to divide the vegetation between the existing and proposed areas. Thus the proposed offset expands an existing offset site, increasing protection for the MNES by increasing the area of contiguous habitat under protection by TfN covenants. Baseline surveys will be done as part of the OMP.

**Table 13 Offset assessment guide calculations**

| Parameter                                                                                                                                                                       | Value         | Notes                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Impact to NTGVVP / GSM</b>                                                                                                                                                   |               |                                                                                                                                                               |
| Area of impact                                                                                                                                                                  | 28.23 / 35.66 | Total area (hectares) of direct loss for NTGVVP/GSM                                                                                                           |
| Quality                                                                                                                                                                         | 6             | Scale of 0 – 10. Habitat hectare score has been used as a surrogate for site quality score. Scores of impacted areas ranged from 0.24 to 0.66.                |
| Total quantum of impact                                                                                                                                                         | 16.94 / 21.4  | Hectares of NTGVVP / GSM habitat                                                                                                                              |
| <b>Offset calculations – Property 2: one site for both NTGVVP &amp; GSM (99.67 ha)<br/>Chepstowe: 2 sites, one for NTGVVP &amp; GSM (22.33 ha) &amp; one GSM only (32.1 ha)</b> |               |                                                                                                                                                               |
| Offset area                                                                                                                                                                     | 154.1         | One 99.67 ha offset at Property 2 and two sites (22.33 ha of NTGVVP with GSM and 32.1 ha with only GSM habitat) at Chepstowe.                                 |
| Time until ecological benefit                                                                                                                                                   | 10            | Years                                                                                                                                                         |
| Time over which loss is averted                                                                                                                                                 | 20            | Years                                                                                                                                                         |
| Start quality                                                                                                                                                                   | 6             | Scale of 0 – 10 (Set at 6 for GSM and an average score of 6 for NTGVVP)                                                                                       |
| Future quality without offset                                                                                                                                                   | 3             | Potential for decline in quality through weed invasion and grazing, which is currently allowable within each property according to current planning controls. |
| Future quality with offset                                                                                                                                                      | 6             | Maintenance in condition of vegetation/habitat based on prescribed ecological management defined in approved OMPs.                                            |
| Risk of loss (%) without offset                                                                                                                                                 | 10%           | Low risk of loss without deliberate or accidental actions.                                                                                                    |
| Risk of loss (%) with offset                                                                                                                                                    | 1%            | Lower risk of loss with covenant and landowner awareness and vigilance.                                                                                       |
| Confidence in results                                                                                                                                                           | 90%           |                                                                                                                                                               |
| % of impact offset                                                                                                                                                              | >100%         | Exceeds the minimum requirement of a 90% direct offset                                                                                                        |

### 6.4.5 Summary

A summary of how the proposed offset package meets the EPBC Act Environmental Offsets Policy is provided in Table 15.

**Table 14 EPBC Act offset principles**

| Offset principle: Suitable offset must:                                                                                                                                                                     | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed action.</b> | <p>The offset package for the protection and management of MNES associated with the development of the YJC facility includes the protection of 154.1 ha of GSM habitat, including 122.0 ha of NTGVVP at Chepstowe and Property 2. There is a large number of records supporting the confirmation of presence of GSM on both properties and baseline surveys will be undertaken as soon as the offset is secured and the flight season has started. The protection and ongoing improvements proposed will secure these areas in perpetuity and removes or controls the current threatening processes which are active at these locations. On-going monitoring will be undertaken to ensure the habitat quality and presence of GSM is maintained. This management is essential to provide for the long term viability of the MNES at this site.</p> <p>Note that both offset sites are large farming properties that support contiguous areas of MNES. The landscape context of the offset sites support the persistence of the MNES to a greater extent than the impact site, which is subject to future development proposals adjacent to the habitat.</p> <p>The quality of the NTGVVP is higher at the offset sites than the impact site but which could decline should agricultural practices change.</p> |
| <b>Be built around direct offsets but may include other compensatory measures.</b>                                                                                                                          | <p>The offset package includes direct offsets only.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Be in proportion to the level of statutory protection that applies to the protected matter.</b>                                                                                                          | <p>The offset proposal is informed by the EPBC offsets calculator, which takes the level of statutory protection into account. Existing permitted uses of the site are discussed above.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Be of a size and scale proportionate to the residual impacts on the protected matter.</b>                                                                                                                | <p>The offset proposal is informed by the EPBC offsets calculator, which calculates offset areas in relation to impact areas.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Effectively account for and manage the risks of the offset not succeeding.</b>                                                                                                                           | <p>This risk factor is also a component of the offset calculations, and risk will be managed through the management plan for offset site.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Be additional to what is already required, determined by law or planning regulations or agreed to under other schemes or programs.</b>                                                                   | <p>Management actions specified in the management plan for the site will be in addition to current legislative requirements, including foregoing currently permitted uses and additional weed and pest animal control and management of ground cover biomass.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Be efficient, effective, timely, transparent, scientifically robust and reasonable.</b>                                                                                                                  | <p>Management of the site will be directed by the offset management plans provided for each site, and enforced through the Trust for Nature Covenanting process.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced.</b>                                                                               | <p>The management plan will be enforced through the Trust for Nature Covenanting process and any conditions applied through the EPBC approval process.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

## 6.5 Progress towards securing offsets

The agreements with the landholders of the offsets for NTGVVP will be established before the YJC development proceeds and the process to protect these sites under a Trust for Nature Covenant will be initiated prior to project commencement. Ecological management of each offset area will be governed by an

approved offset management plan (OMP) tailored for the specific conditions of the selected site. Proposed OMPs for each offset area of NTGVVP are provided by Biosis (Appendix 8). This management includes regular monitoring (Section 3.7 OMPs in Appendix 8) and reporting to the Trust for Nature. The relevant OMP will be subject to regular implementation, monitoring and reporting and GSM populations will be monitored every two years including a baseline survey conducted during the first flight season after establishing the covenant (i.e. years 0, 2, 4, 6, 8 and 10). The Trust also conducts annual inspections of covenanted sites and provides advice to covenant landholders on request.

DJR is currently in negotiations with both landholders and MoUs to secure the offset sites are being prepared.

## 6.6 Other offset requirements

Two other types of offsets are required as part of the YJRP approvals processes. These are provided for information only and do not affect the offset requirements just discussed.

### 6.6.1 Melbourne Strategic Assessment offsets

Where the proposed works occur within the Outer Metropolitan Ring Road, offsets will be obtained under the Biodiversity Conservation Strategy (BCS) of the Melbourne Strategic Assessment (MSA) (DEPI 2013b). These offsets are defined by DELWP in the form of a Habitat Compensation Obligations (HCOs) statement, to be remitted to DELWP prior to the commencement of any works within a defined area. The HCO Statement is provided in Appendix 14 and summarised in Table 16. Please note that these offset calculations are based on modelled and time-stamped data collected in the past and do not necessarily represent the amount of clearing that will result from the proposed development.

**Table 15 Summary of Habitat Compensation Obligation requirements**

| Habitat Type        | Obligation extent |
|---------------------|-------------------|
| Native Vegetation   | 0.664 ha          |
| Spiny Rice-flower   | 0.664 ha          |
| Golden Sun Moth     | 1.438 ha          |
| Growling Grass Frog | 0.525 ha          |

### 6.6.2 State offsets

Offsets for the project are also prescribed under Victoria's *Biodiversity Assessment Guidelines* (DEPI 2013) to compensate for the clearing of native vegetation. These offset requirements largely overlap with the areas of clearing defined for MNES with only very slight differences. State offset requirements under DEPI (2013) are measured in General and/or Specific Biodiversity Equivalence Units (GBEU/SBEU). The amount of General and Specific Biodiversity Equivalence Units has been calculated by DELWP's EnSym system based on computer models of species habitat. The required SBEUs may therefore differ from the species recorded during field inspections. The results of the EnSym analysis are presented in the BIOR report in Appendix 13 and summarised in Table 17 below.

Steps towards securing a state offset site are underway with negotiations between DJR and DELWP to identify a suitable site currently underway.

**Table 16 Summary of offsets generated in the BIOR report.**

| Attribute                                                                      | Outcome                                                                                                                                                                   |
|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Specific offset amount (Specific Biodiversity Equivalence Units - SBEU)</b> | 11.131 units for Red-chested Button-quail<br>14.833 units for Striped Legless Lizard<br>12.736 units for Large-headed Fireweed<br>14.267 units for Pale Swamp Everlasting |
| <b>General offset minimum Strategic Biodiversity Score</b>                     | 0.451                                                                                                                                                                     |
| <b>General offset amount (General Biodiversity Equivalence Units - GBEU)</b>   | 4.388 units                                                                                                                                                               |
| <b>Offset vicinity</b>                                                         | Port Phillip and Westernport CMA or Wyndham City Council                                                                                                                  |

## 7. Other Approvals, Compliance requirements and Conditions

*The preliminary documentation must include information on any other requirements for approval or conditions that apply, or that you reasonably believe are likely to apply, to the proposed action. This must include:*

- a) A description of any approval obtained or required to be obtained from a state or Commonwealth agency or authority (other than an approval under the EPBC Act), including any conditions that apply to the proposed action.*
- b) A statement identifying any additional approval that is required.*
- c) A description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action.*
- d) A statement identifying any interaction with other approved projects under the EPBC Act, including compliance with conditions on other approved projects.*

### 7.1 Commonwealth approvals

#### 7.1.1 Interaction with previous EPBC referrals

The conditions of approval associated with the Melbourne Water referral EPBC 2008/4221 identify a series of riparian and conservation buffers along existing waterways at this location (Appendix 12), which have been addressed in detail throughout this document. While land to be acquired by DJR includes a tributary of Lollypop Creek allocated a 30 metre wide buffer perpendicular to each bank of this tributary, the proposed work area for the YJC facility respects the integrity of this buffer (Figure 5). Other riparian zones intersected by the proposed services easement works to the east of the facility will be addressed as detailed above.

### 7.2 State approvals and policy

#### 7.2.1 Cultural Heritage Management Plan

The proposed development requires approval under the *Aboriginal Heritage Act 2006*. The following Cultural Heritage Management Plans (CHMPs) have been prepared for development:

- CHMP 15022 has been approved for the YJC facility and access track.
- CHMP 15591 is in preparation for the services easement.

#### 7.2.2 Environmental Effects Act 1978

The proposed development was referred to the Victorian Minister for Planning under the *Environment Effects Act 1978* to determine if an Environmental Effects Statement (EES) was required (Referral 2017-R11). The Minister for Planning has decided that an environmental effects statement (EES) is not required, subject to the following conditions:

- 1. An environmental report based on the final design for the YJC facility and ancillary infrastructure is to be completed by the proponent to the satisfaction of the Minister for Planning prior to the commencement of works.*
- 2. An environmental management framework (EMF), based on the environmental report, is to be completed by the proponent to the satisfaction of the Minister for Planning prior to the commencement of works.*

The decision letter is provided in Appendix 9.

### 7.2.3 Flora and Fauna Guarantee Act 1988

Under the FFG Act a permit is required from DELWP to 'take' protected flora species from public land. One protected flora species and an FFG-listed community were recorded in the construction area necessitating a permit under the FFG Act. An initial FFG Act permit was obtained for preliminary geotechnical work (Permit No. 10008496). A second permit is required to cover the remainder of the works and will be obtained prior to works commencing. The protected flora species recorded was Nardoo *Marsilea drummondii* found in Plains Grassy Wetland in the access road alignment and the listed community is the Western (Basalt) Plains Grasslands Community.

### 7.2.4 Planning and Environment Act 1987 (incl. Planning Schemes)

#### Planning Scheme Amendment Wyndham C222

The proposed development is the subject of a planning scheme amendment, Wyndham C222, with approval by the Victorian Minister for Planning imminent. The planning scheme amendment will address relevant planning matters so that planning matters are not dealt with further here, other than Clause 52.17 Native Vegetation, which requires assessment of native vegetation and offsets to be in accordance with *Biodiversity Assessment Guidelines* (DEPI 2013).

#### Native vegetation regulations

The first ecological assessment of the site was undertaken in May 2017 using the then current *Biodiversity Assessment Guidelines* (DEPI 2013). On 12 December 2017 the *Biodiversity Assessment Guidelines* were replaced by the *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017). Since planning and design for the project were well underway at the introduction of the new Guidelines, DJR sought permission from the Secretary of DELWP to access the transitional provisions set out under Clause 52.17 of the Victoria Planning Provisions. Access was granted and as such, the project has permission to complete native vegetation assessments and offsets using *Biodiversity Assessment Guidelines* (DEPI 2013). The letter confirming access to transitional provisions is provided in Appendix 13.

Under the Biodiversity Assessment Guidelines, the proposed development proposes to remove the following amounts of native vegetation. The Biodiversity Offsets and Impacts Report, which calculates the impacts is provided in Appendix 13. The offsets generated by this removal are provided in Section 6.7.2.

| Attribute                                                       | Outcome   |
|-----------------------------------------------------------------|-----------|
| Native vegetation removal extent                                | 28.457 ha |
| Habitat hectares to be removed                                  | 16.637    |
| Strategic Biodiversity Score of native vegetation to be removed | 0.689     |

### 7.2.5 Catchment and Land Protection Act 1994 (Victoria)

The CaLP Act identifies and classifies certain species as noxious weeds or pest animals, and provides a system of controls on noxious species.

Eighteen declared noxious weeds and two declared pest animals were identified from the construction area. These are listed in Appendix 10. The proponent must take all reasonable steps to prevent the growth and spread of regionally controlled weeds, and prevent the spread of and as far as possible eradicate established pest animals. All Construction Environmental Management Plans should address weed hygiene protocols for plant and equipment entering and leaving the site and contaminated soil should be kept on site.

### **7.2.6 *Environment Protection Act 1970: State Environmental Protection Policy (Waters of Victoria) 2003***

The proposed development may indirectly through construction or runoff from the facility impact upon waterways or aquatic ecosystems and areas of high conservation value outlined in Schedule B of the *SEPP*, namely the Port Phillip Bay (western shoreline) and Bellarine Peninsula Ramsar site.

In addition, the *SEPP* requires that aquatic ecosystem values be protected. Environmental quality objectives and indicators are defined to protect beneficial uses. As a result, impacts to surface water quality must not result in changes that exceed background levels and/or the water quality objectives to protect surface water uses and values for Cleared Hills and Coastal Plains. A Construction Environmental Management Plan and the stormwater management plan for the development will address these water quality objectives.

### **7.2.7 *Water Act 1989***

The primary purpose of the *Water Act 1989* is to provide a framework for the allocation and management of surface water and groundwater throughout Victoria. In Melbourne Water's management area this applies to all waterways with a catchment area of 60 hectares or more. These waterways are deemed to be Melbourne Water assets, while all smaller watercourses are deemed the responsibility of the local government.

Melbourne Water has already been consulted regarding this development including obtaining permission to install services easement on Melbourne Water land.

Since there are no proposed works to the beds and banks of Cherry Creek or Lollipop Creek, permission to work on these waterways is unlikely to be required.

The Construction Environmental Management Plan will ensure that construction does not impact on waterways indirectly through sedimentation and run off.

## **7.3 Monitoring, enforcement and procedure reviews**

The construction of the proposed development will be guided by the Environmental Management Framework (EMF) prepared to satisfy Condition 2 of the EES referral decision and approved by DELWP. The EMF stipulates requirements for set up, maintenance and auditing of environmental protections on the construction site including maintenance of no-go zones, sediment traps and weed hygiene protocols. The EMF is provided in Appendix 11 and more detail is provided in Section 5.

## 8. Social and Economic

*The preliminary documentation must address the economic and social impacts (both positive and negative) of the proposed action. This may include:*

*a) Details of any public consultation activities undertaken, and their outcomes.*

*b) Projected costs and benefits of the proposed action, including the basis for estimation through cost/benefit analysis or similar studies, e.g. employment opportunities expected to be generated by the project (including construction and operational phases).*

*Economic and social impacts must be considered at the local, regional and national level.*

### 8.1 Community consultation

The Department of Justice and Regulation is committed to involving the local community in the planning and development of the new youth justice centre. A broad-ranging consultation program has been put in place to support the contribution and involvement of local residents and enable key information on the project to be shared with the community at regular milestones.

The primary focus for consultation with the community has been the formation of the Youth Justice Centre Redevelopment Project Community Advisory Group. Consultation has also included a program of community information sessions, and the distribution of a range of written material.

The first community information sessions were held in Wyndham on 7 and 8 April 2017. Details of the sessions were placed in the local newspaper during the preceding weeks. The sessions included information booths and displays, with representatives from key government departments and agencies in attendance and available to answer questions from community members.

Over the following months further community information sessions were held and range of materials presented to provide information around common themes from the earlier information session. The material presented included posters of location and early artist impressions of the new facility along with fact sheets covering; a project overview, site location, environment, cultural heritage, lighting, security, transport and job opportunities.

A common theme throughout all of the information sessions has been a desire by attendees to better understand the location of the new youth justice centre. In response to this, information has been included on the project website to assist with locating the site, and to better understand the features of the site.

This information includes an embedded map that shows the location of the centre, and which can be switched between a satellite imagery view and a street map view. To complement this, video imagery of the site and surrounding features was collected using a drone and edited into a short video clip. This is also available on the project website.

Job opportunities was a key theme raised at the Little River session with enquiries on the type of ongoing jobs available and construction related jobs.

The Environment Management Framework for the project requires a communications strategy to ensure that the local community are kept up to date during the construction process (Appendix 11).

Table 18 below provides statistics to show the level of public involvement with the consultation process.

**Table 17 Consultation statistics (source: Department of Justice and Regulation).**

| Amount | Consultation activity                             |
|--------|---------------------------------------------------|
| 3200   | Letters sent to local households                  |
| 112    | Attendees at seven community information sessions |
| 5199   | Visits to the project website                     |
| 76     | Subscribers to the project email updates          |
| 187    | Calls to the dedicated call centre line           |

### 8.1.1 Community information session summary

- Session 1 and 2- Wyndham (Werribee) Community information session
  - Held at the Jamieson Way Community Centre Point Cook Friday 7 April 4pm to 7pm and Saturday April from 9am to 12pm.
  - Attended by representatives from the Department of Justice and Regulation, VicRoads, Public Transport Victoria, Department of Education and Training and the Department of Environment, Land, Water and Environment, Victorian Planning Authority and Wyndham City Council.
  - Artists' impressions and a range of information was available.
  - 43 community members attended.
- Session 3- Wyndham (Little River) community information session July 24 2017
  - Held at the Little River Mechanics Institute Hall on Monday 24 July from 5.30pm to 7.30pm.
  - Attended by Community Advisory Group members and representatives from the Department of Justice and Regulation.
  - Artists' impressions and a range of information on the project available.
  - 25 community members attended.
- Session 4- Wyndham (Werribee) community information session September 11 2017
  - Held at the Melbourne Water Discovery Centre in Werribee on September 11 2017 from 5.30pm to 7.30pm.
  - Attended by VicRoads, Public Transport Victoria and Community Advisory Group members.
  - Artists' impressions and drone footage of the site location available.
  - 12 community members attended.
- Session 5- Wyndham (Werribee) community information session.
  - Held at the Melbourne Water Discovery Centre in Werribee on Wednesday 6 December 2017 from 5.30pm to 7.30pm.
  - Attended by Community Advisory Group members.
  - Fact sheets, artists' impressions and drone footage of the site location available.

- 2 community members attended.
- Session 6- Wyndham (Little River) community information session
  - Held at the Little River Mechanics Institute Hall on Monday 11 December from 5.30pm to 7.30pm.
  - Fact sheets, artist's impressions and drone footage of the site location available for community.
  - Attended by Community Advisory Group members and representatives from the Department of Justice and Regulation.
  - 30 community members attended.

### **8.1.2 Community Advisory Group**

A Community Advisory Group (CAG) for the project was established to ensure the local community is informed and engaged as the project progresses. The CAG comprises a diverse group of key stakeholders and active community members:

- Local community members (four people, selected via Expression of Interest process).
- Councillors and an officer from Wyndham City Council.
- Koori representation.
- Victoria Police.
- Department of Justice and Regulation.
- Independent Chair.

The first meeting of the CAG was held on 19 June 2017, followed by monthly meetings between July and October 2017. The group will continue to meet over the life of the project, and a summary of each meeting will be uploaded to the project website afterwards (<https://engage.vic.gov.au/youthjusticecentre>).

A key role of the group is to provide input during the preparation of the Youth Justice Centre Facility Plan (YJCFP), which is required by the draft site-specific planning controls and sets out the key design and operational features of the centre. Following consultation with the local community, the CAG was presented with a draft Youth Justice Centre Facility Plan (YJCFP) for consideration. Following approval of the YJCFP, the CAG will continue to meet on a regular basis throughout the construction phase of the project.

## **8.2 Consultation with Indigenous stakeholders**

As mentioned above, there is an indigenous representative on the CAG.

A consultation meeting was held with the Wathaurung Aboriginal Corporation Registered Aboriginal Party (RAP) as part of the preparation of a Cultural Heritage Management Plan (CHMP) for the proposed activity required under the *Aboriginal Heritage Act 2006*.

## **8.3 Agency Consultation**

DJR has involved all relevant State departments, agencies and stakeholders, including Melbourne Water and VicRoads. DJR will continue to meet and consult regularly with Wyndham City Council officers as the project develops.

## 8.4 Costs

The Victorian Government has committed \$288.7 million to the building of this project. This is based on the business case prepared for the project (Appendix 1).

## 8.5 State level benefits

Construction of Victoria's new youth justice centre will support thousands of jobs across the steel, manufacturing, construction, engineering and other sectors and generate an economic benefit of \$420 million.

The project is expected to achieve 90 per cent local content through the creation of up to 2000 to 3000 direct and indirect construction and related jobs and will maximise the use of locally milled steel. Local content is defined as content from Victoria, Australia and New Zealand.

The new facility will provide opportunities for a range of businesses in the area that can supply goods and services to the centre, to construction teams and – later – to staff and visitors.

Once operational, the new youth justice centre will bring approximately 450 ongoing jobs to the area, with a range of roles available, including: custodial, administration, psychologists, teachers, cleaners, gardeners and facility managers.

The project has been determined a 'Strategic Project' under the Victorian Industry Participation Policy (VIPP). This means the State will require the private sector to meet minimum local content targets, that is, content from Australia and New Zealand. Having a local-content target is designed to ensure that major projects maximise benefit to local economies.

Bidders for Strategic Projects such as the new youth justice centre are required to work with the Industry Capability Network (ICN), which acts as a central point of contact between government and local industry, to develop a Local Industry Development Plan. The key purpose of this plan is for bidders to consider engaging local suppliers where appropriate.

Under the Skills Guarantee, the principal contractors awarded contracts for construction, building, infrastructure and civil engineering which have a pre-tender estimated value at or over \$20 million must utilise Victorian registered apprentices, Victorian registered trainees or engineering cadets for at least 10 per cent of the project's total estimated labour hours. The project also has a four per cent Aboriginal Employment target on the Work's total estimated labour hours.

## 8.6 Local benefits

The City of Wyndham is a large municipality in Melbourne's west. Wyndham has experienced fast population growth and the need for new employment opportunities has resulted.

The construction of the YJC will create employment during both the construction and operation phase of the project as detailed above.

Once it opens, the new facility will bring 450 ongoing jobs to the area, providing opportunities for local businesses. It will also support the development of new infrastructure, including improved public transport.

There are no proposed negative impacts to local amenity since the proposed site is located in an area that is not accessible to the public and does not have any current public use (other than use by Melbourne Water).

Future development of this site for any other purpose is unlikely given the planning constraints on the land (see Section 2.1).

## **8.7 National benefits**

This is a state-based project and so DJR has not undertaken social and economic investigations at the national scale.

## 9. Environmental record of DJR

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*The information provided must include details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:*

*a) The person proposing to take the action.*

*b) For an action for which a person has applied for a permit, the person making the application.*

*If the person proposing to take the action is a corporation, details of the corporation's environmental policy and planning framework should be described.*

### 9.1 Proceedings under a Commonwealth or state law

The Department of Justice and Regulation is a public sector agency of the Victorian State Government, which has demonstrated a commitment to responsible environmental management.

The Department of Justice has previously referred the following actions under the EPBC Act:

- 2002/855 – Metropolitan Remand Centre.
- 2013/6778 – Ravenhall Prison Project.
- 2014/7274 – New High Security Unit adjacent to Barwon Prison.

All developments have been undertaken in compliance with the EPBC approval for each project. There are no proceedings under a Commonwealth, State or Territory law relating to these developments.

## 10. Conclusion

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*The preliminary documentation must provide an overall conclusion as to the environmental acceptability of the proposal, including discussion on compliance with the principles of Ecologically Sustainable Development and the objects and requirements of the EPBC Act.*

*To assist you, the National Strategy for Ecologically Sustainable Development (1992) is available on the following web site: <https://www.environment.gov.au/about-us/esd/publications/national-esd-strategy>.*

*You may wish to include a statement as to whether or not the controlled action should be approved and may recommend conditions pertaining to an approval. This should include justification for undertaking the proposed action in the manner proposed. The measures proposed or required by way of offset for any unavoidable impacts on MNES and the relative degree of compensation, should be restated here.*

The proposed YJC facility at Cherry Creek accords with the principles of Ecologically Sustainable Development as it provides required infrastructure for Victoria while minimising environmental impacts and, in particular, impacts on native vegetation, biodiversity and essential ecological processes. The guiding principles of Ecologically Sustainable Development (ESD) listed in the *National Strategy for Ecologically Sustainable Development* (1992) are as follows:

- decision making processes should effectively integrate both long and short-term economic, environmental, social and equity considerations;
- where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;
- the global dimension of environmental impacts of actions and policies should be recognised and considered;
- the need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognised; and
- the need to maintain and enhance international competitiveness in an environmentally sound manner should be recognised.

The proposed works area supports moderate quality NTGVVP and habitat for GSM. This area is located in close proximity to the MSA's 15,000 ha Western Grassland Reserve which will be managed to provide an extensive area of NTGVVP and GSM habitat managed for its biodiversity values. As a result to proposed YJC facility is only expected to have a local impact on these MNES.

In addition to various environmental mitigation measures implemented to minimise the effects to both NTGVVP and GSM, the project will also provide significant offsets to protect and enhance these MNES. This outcome provides for greater security and management of these MNES within their Victorian distribution in a manner consistent the EPBC Act Environmental Offsets Policy (DSEWPoC 2012).

### 10.1 Ecologically sustainable development

The *National Strategy for Ecologically Sustainable Development* (1992) sets out the policy framework for the Australian Government to make decisions and take actions to pursue ecologically sustainable development (ESD).

Australia's *National Strategy for Ecologically Sustainable Development* (1992) defines ecologically sustainable development as: 'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased'.

The *National Strategy for Ecologically Sustainable Development* provides broad strategic directions and framework for governments to direct policy and decision-making. The strategy facilitates a coordinated and co-operative approach to ecologically sustainable development and encourages long-term benefits for Australia over short-term gains.

The strategy was adopted by all levels of Australian government in 1992.

The National Strategy requires government departments to ensure that the principles and objectives of ESD are delivered and sets out the following core objectives for achieving ESD:

- to enhance individual and community well-being by following a path of economic development that safeguards the welfare of future generations;
- to provide for equity within and between generations; and
- to protect biological diversity and maintain essential ecological processes and life-support systems.

Table 19 summarises the assessment of the Project against EPBC Act principles of ESD.

**Table 18 Assessment of the project against the EPBC Act principles of ESD.**

| EPBC Act<br>Guiding Principle                                                                                                                                                 | Project Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The long-term and short-term economic, environmental, social and equitable considerations                                                                                     | <p>This project is funded by the Victorian Government to upgrade the existing facilities for youth justice in Victoria. These facilities therefore provide a benefit to the Victorian community.</p> <p>The project will provide social and economic benefits to the Victorian community through the management of youth justice. It will provide both short term economic benefits to the Victorian community in the form of construction activity and longer term benefits in the form of establishing current facilities to manage social justice.</p> <p>DJR, through design and environmental assessment for this Project, has designed the facility with the principles of "avoidance" and "minimisation" to reduce the impacts of the project on native vegetation and fauna within the Project area.</p> <p>Environmentally the project has also further applied the principles of impact "avoidance" and "minimisation" in developing its contract performance requirements for the project site works environmental management and mitigation measures.</p> |
| The precautionary principle which states that a lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation | <p>Robust environmental assessments have been completed to assess the potential impacts of the project including ecological assessments, cultural and historic heritage archaeological assessments. The assessments undertaken for this project provide a sound basis for understanding the likely project impacts and in developing effective environmental management and mitigation measures for the proposed works.</p> <p>Additionally, the precautionary principle has been applied in developing the environmental management and mitigation measures.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| EPBC Act<br>Guiding Principle                                                                                                                                                                                                    | Project Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The principle of inter-generational equity which states that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations | <p>The project will provide social and economic benefits to the Victorian community through the provision of up to date facilities for the management of youth justice issues.</p> <p>The proposed design, mitigation and offset of impacts will ensure minimal impact of the project on MNES.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making                                                                                                       | <p>DJR has applied the following principles through design of the YJC facility in accordance with State legislative requirements, specifically:</p> <ul style="list-style-type: none"> <li>• Avoid vegetation removal where practical: This requires DJR to carefully assess the location of new works to avoid impacts on native vegetation where it is practical to do so; and</li> <li>• Minimise the extent of native vegetation removal: Where the removal, destruction or lopping of native vegetation cannot be avoided the extent and impact of clearing must be minimised through the planning, design and undertaking of works.</li> </ul> <p>DJR has through design and environmental assessment of the proposed project works treatments considered and implemented these principles for this project to reduce the impact to native vegetation.</p> <p>An ecological assessment has been conducted to identify key constraints for the project, which involved both desktop and detailed field assessments. The ecological assessment was completed during the pre-construction design process so that the findings, where applicable, could be considered through this process, including mitigation measures for construction activities.</p> <p>An Environmental Management Framework (Appendix 11) has been developed for the project to minimise impacts on native vegetation, flora and fauna, and addressing other project risks such as weed management, fire, dust, noise and site reinstatement, including other relevant outputs from construction.</p> <p>As outlined above, MNES have been thoroughly considered and will be appropriately managed in accordance with the relevant approval conditions.</p> |
| Improved valuation, pricing and incentive mechanisms should be promoted.                                                                                                                                                         | This does not apply to the project.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

## **10.2 Proposed approval**

DJR accepts that the proposed YJC facility and associated native vegetation removal has been determined as a controlled action under the EPBC Act due to the impact upon the critically endangered MNES including GSM and NTGVVP. DJR is committed to managing the risk to these MNES and providing offsets to compensate for the loss of these MNES.

It is DJR's position that the project be approved subject to conditions as deemed appropriate by DoEE. Should the action be approved by the Commonwealth, these conditions would form the minimum set of requirements imposed by one of the regulatory authorities involved in the approvals process for this project. The conditions are expected to relate to undertaking the action in a manner that minimises impact on the NTGVVP and GSM through compliance with construction plans, a defined limit of works, site inductions, and adherence to a strict environmental management framework protocols (Appendix 11).

Compensatory offsets are proposed for the residual impacts to NTGVVP and GSM habitat.

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- Biosis 2018a. Youth Justice Redevelopment Project: Comparison of potential sewer alignments and connection points. Report for Department of Justice and Regulation. Author: Mueck S and Nerenberg S. Biosis Pty Ltd, Melbourne. Project no. 26784
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## Appendices

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## Appendix 1 Supporting reports

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### Attachments

- Biosis 2017. Youth Justice Redevelopment Project: Spiny Rice-flower survey and updated vegetation assessment. Report for Department of Justice and Regulation. Authors: McCutcheon, C., Lee, M. & Goddard, M. Biosis Pty Ltd, Melbourne. Project no. 25272
- Biosis 2018a. Youth Justice Redevelopment Project: Comparison of potential sewer alignments and connection points. Report for Department of Justice and Regulation. Author: Mueck S and Nerenberg S. Biosis Pty Ltd, Melbourne. Project no. 26784
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- Protected Matters Search Tool Results from 31/01/2018
- Victorian State Government 2017. Youth justice facility: Business Case Overview. State of Victoria, Melbourne.

## Appendix 2 Figures

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Attached:

- Figure 1** Total area surveyed for the YJRP, referred to as the “investigation area”, YJRP, Cherry Creek, Victoria
- Figure 2** Finalised construction area, YJRP, Cherry Creek, Victoria
- Figure 3** Project components summary, YJRP Cherry Creek, Victoria
- Figure 4** Planning buffers around YJC facility (FMSA Architecture)
- Figure 5** Compliance with EPBC referral 2008/4221, services easement, YJRP, Cherry Creek, Victoria
- Figure 6** Significant impacts to MNES, Cherry Creek, Victoria
- Figure 7** Detail of enabling works intersection, Cherry Creek, Victoria
- Figure 8** Native vegetation of the construction area, Cherry Creek, Victoria
- Figure 9** Golden Sun Moth habitat of the construction area, Cherry Creek, Victoria
- Figure 10** Melbourne Strategic Assessment area traversed by services easement, Cherry Creek, Victoria
- Figure 11** Golden Sun Moth survey effort, Victoria
- Figure 12** Striped Legless Lizard tile grid survey effort, Victoria
- Figure 13** Spiny Rice-flower survey effort, Victoria
- Figure 14** Spring targeted flora surveys survey effort, Victoria
- Figure 15** Threatened flora records from local area (5 km radius around construction area)
- Figure 16** Golden Sun Moth records from local area (5 km radius around construction area)
- Figure 17** Striped Legless Lizard records from local area (5 km radius around construction area)
- Figure 18** Straw-necked Ibis records from local area (5 km radius around construction area)
- Figure 19** Growling Grass Frog records from local area (5 km radius around construction area)
- Figure 20** Location of proposed offset site, Chepstowe, Victoria



## Appendix 3 Stormwater Management Plan

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Attached

## Appendix 4 Vegetation quality assessment results

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Attached

## Appendix 5 Engineering design plans

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Attached

## Appendix 6 DJR Sustainability Guidelines

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Attached

## Appendix 7 Offset calculator templates

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Attached:

NTGVVP calculator

GSM calculator

## Appendix 8 Draft Offset Management Plans

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Attached:

- OMP 1: Chepstowe NTGWVP+GSM
- OMP 2: Chepstowe GSM

## Appendix 9 Environmental Effects referral decision

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Attached

## Appendix 10 Noxious weeds

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Attached

## Appendix 11 Draft Environment Management Framework

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Attached

## Appendix 12 Previous EPBC referral conditions

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Attached

## Appendix 13 Biodiversity Impact and Offset Requirement Report and approval letter

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Attached

## Appendix 14 Habitat Compensation Obligations

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Attached

## Appendix 15 Offset site condition reports

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Attached:

- Chepstowe: Biosis offset site condition report with GSM summary report from offset broker