

Section 11

# Other Factors





## 11. Other Factors

During assessment of proposals other factors or matters are often identified as relevant to a proposal, but not of significance to warrant further assessment by the EPA, or can be regulated by other statutory processes, to meet the EPA's objectives. The ESD has identified one other factor of Amenity, in relation to noise and access to roads.

### 11.1 Amenity

Amenity can generally be described as “the pleasant or normally satisfactory aspects of a location which contribute to its overall character and the enjoyment of residents or visitors.”<sup>1</sup>

Section 9.7, Amenity (Noise), discusses the expected noise impact of the Project. Section 6, The Project, identifies the requirement for transport of goods and materials during the construction and operational phases of the proposed development.

This section discusses the expected impact of noise and transport activities on local amenity and regional amenity, for residents and visitors. It also discusses the expected positive impacts on amenity arising from the Project.

#### 11.1.1 Local Amenity

The Yeelirrie Uranium Project is sited within the Cameco-owned Yeelirrie Pastoral Lease. The surrounding pastoral leases of Yakabindie, Mount Keith and Albion Downs are owned by BHP Billiton, while the Ululla Pastoral Lease (immediately north of Yeelirrie) is currently abandoned.

The nearest occupied homesteads to the proposed Yeelirrie accommodation village by road are (Figure 11-1):

- Yeelirrie Homestead on the Yeelirrie pastoral station –1.5 km east-south-east and home to three permanent residents;
- Albion Downs Homestead on Yeelirrie pastoral station – 35 km west-south-west and home to two permanent residents;
- Ululla Homestead on the Ululla pastoral station – about 75 km north; and
- Youno Downs Homestead on the Youno Downs pastoral station – 95 km west-north-west and home to two permanent residents.

##### 11.1.1.1 Access and Disturbance

Local unsealed roads in the vicinity of Yeelirrie, which are under the care and control of the local shires, include (see Figure 11-1):

- Albion Downs–Yeelirrie Road, which connects Yeelirrie to the Goldfields Highway (44 km length);
- Yeelirrie–Wiluna Road, which runs north of Yeelirrie and connects with the Goldfields Highway (49.3 km length);
- Yeelirrie–Meekatharra Road, which connects Yeelirrie to Youno Downs Homestead and continues to Meekatharra (87 km length); and
- Altona–Yeelirrie Road, which connects Yeelirrie to Altona Homestead in the south (36.5 km length).

The traffic flow most affected by the increased traffic generated from the proposed Yeelirrie development would be that on the Albion Downs–Yeelirrie Road and at the intersection of the Albion Downs–Yeelirrie Road and the Goldfields Highway.

<sup>1</sup> <http://theplanningacademy.com.au/planning-language>; accessed 26/05/2015

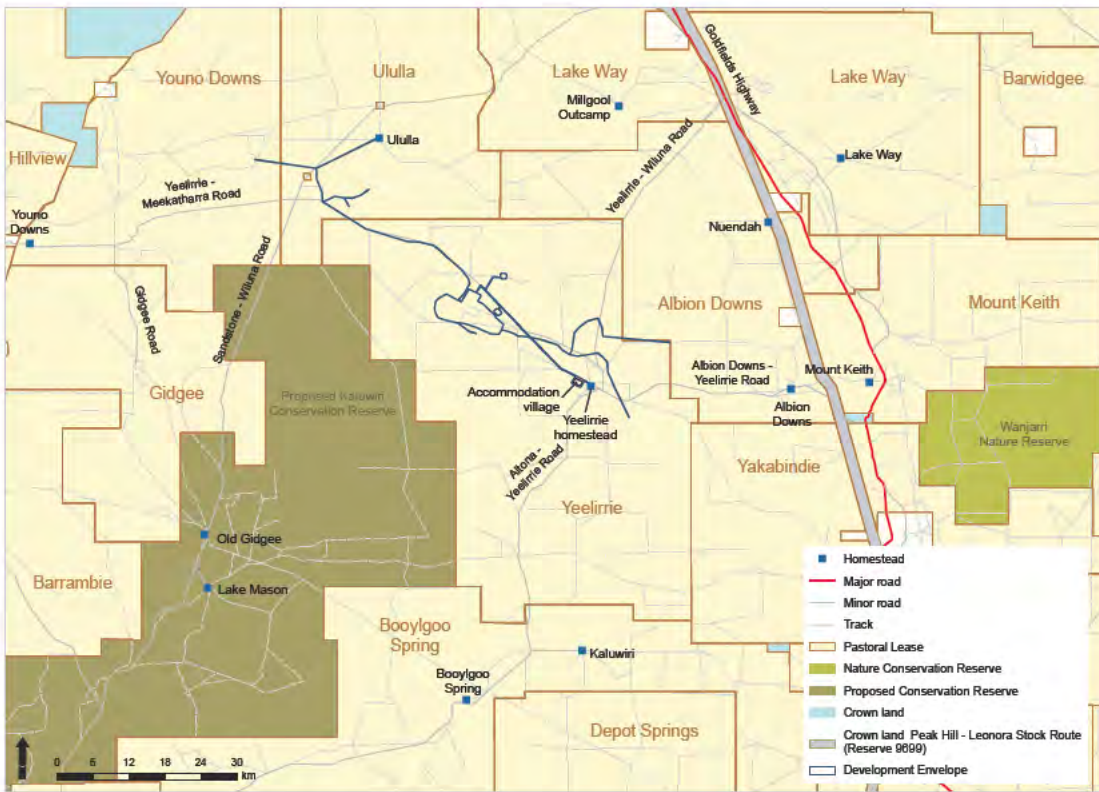


Figure 11-1: Nearest occupied homesteads to the proposed Yeelirrie Uranium Project

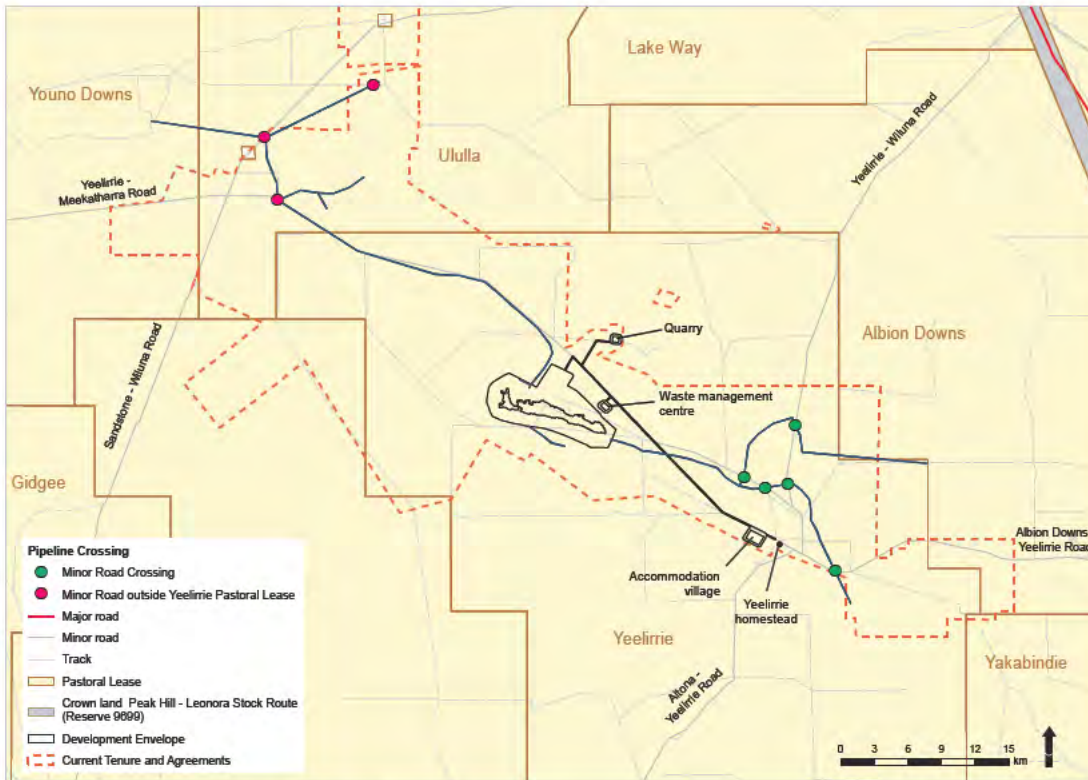


Figure 11-2: Proposed water infrastructure crossings

### Effect of Road Works on Public Access

As outlined in Section 6, some road works would be required to upgrade the existing road infrastructure for use by heavy vehicles and to construct the proposed borefield water supply pipeline.

The roads listed above would remain as unsealed roads, but would require some upgrade and regular maintenance to cope with the expected daily mine traffic load, which includes increased frequency of heavy vehicles. It is likely that the following works would be required:

- improving the unpaved road surface to minimise dust generation;
- widening the road in certain areas and adjusting the alignment;
- realigning and redesigning cattle grids to improve road safety by widening them and retaining an 'at grade' approach with the road surface;
- redesigning and strengthening crossings at surface water drainage points by including concrete pavements where pipes are laid below the road surface; and
- increasing road signage.

This work would be undertaken in consultation with relevant local government authorities and landholders and in a manner that minimised disruption to traffic movements. It is anticipated that such works would be undertaken over a 6 month period prior to the commencement of the construction of the processing plant. The result of such work would be improved access for road users.

The installation of the borefield water supply pipeline would involve some minor road works where it passed underneath local roads, which might result in temporary diversions or partial lane closures on regional roads. After construction, the road surface would be re-established so the use of the regional road by existing traffic would remain unchanged. Construction is expected to take 3 to 6 months.

Three new access roads would be constructed from the Yeelirrie–Meekatharra Road to the proposed metallurgical plant, quarry and waste management centre (see Figure 11-2). These roads would be private, internal roads for the Project and would be located entirely in the Yeelirrie and Albion Downs pastoral stations. There is not expected to be any impact on BHP Billiton's operations on Albion Downs, or any other third-party landholder.

The intersection of the Albion Downs–Yeelirrie Road and the Goldfields Highway would be upgraded to provide appropriate traffic measures, such as slip lanes and turning lanes, for vehicles entering or leaving the Goldfields Highway at this intersection. The effects of this upgrade are discussed in Section 11.1.2.1 below.

### Effect of Increased Road Traffic

Daily mine traffic associated with the construction and operation of the Project will result in greater usage of local roads than currently. Cameco expects that traffic will increase two to threefold on movement recorded by BHP Billiton and is discussed below.

Traffic counts along the Albion Downs–Yeelirrie Road were obtained by the previous project proponent, BHP Billiton, from the Shire of Leonora for the period 18 July to 6 August 2009. During this period there were 409 vehicle movements. Light vehicles accounted for 274 movements (a daily average of 14) and heavy vehicles for 135 movements (a daily average of seven), approximately 33% of the traffic volumes. At the time of the traffic counts, BHP Billiton was undertaking exploratory drilling and traffic flows were higher than normal.

Anecdotal information suggests that other regional roads also experience very low traffic volumes and the Albion Downs–Yeelirrie Road counts are considered to be indicative of volumes on these roads.

As limited current traffic flow data exists for the Albion Downs-Yeelirrie Road to Yeelirrie, the percentage increase in traffic flow expected to result from the construction and operation of the Project cannot be accurately determined. However, given Cameco's projected daily traffic count, Project-related traffic volume will increase traffic flows on this regional road considerably. Necessary road works, as outlined above, would be undertaken to ensure appropriate road safety for workers, residents and visitors to the area, reflecting the higher traffic volumes.

Increased daily traffic would also have the effect of decreasing the 'remoteness' of Yeelirrie and its surrounds, thereby resulting in some loss of amenity to the travelling public visiting the area because of its remote location. The presence of an operating mine would be typical of the region however, and therefore not unexpected for visitors to the area.

#### 11.1.1.2 Noise

The closest noise sensitive premises to the development would be the Yeelirrie homestead, located approximately 17 km south east of the proposed mine.

As presented in Section 9.7, Amenity (Noise), assessable noise levels at noise sensitive premises were modelled for the original project and shown to easily comply with the Environmental Protection (Noise) Regulations 1997. Cameco expects similar noise emissions from the revised Project and therefore predicts no noise impacts on the closest noise sensitive premises.

Cameco will minimise noise emissions from the Project by operating and maintaining equipment and machinery in accordance with manufacturers' requirements.

The expected impact of noise on local amenity is anticipated to be low.

#### 11.1.1.3 Dust

Dust emissions from the Project were estimated as part of the air quality assessment and atmospheric dispersion modelling was conducted as outlined in Section 9.8. Total suspended particulates (TSP) is normally associated with nuisance impacts such as dust fallout and impacts on amenity. The New South Wales Office of Environment and Heritage provides a dust deposition guideline of 4 g/m<sup>2</sup>/month maximum total deposited dust, and 2 g/m<sup>2</sup>/month maximum increase in deposited dust levels.

The results of the dispersion modelling indicate that fugitive dust emissions from the Project are not likely to result in unacceptable air quality impacts at the nearest sensitive receptors. The maximum predicted 24-hour and annual average TSP ground level concentrations and the monthly incremental dust depositions rates will comply with the relevant air quality criteria at each of the sensitive receptors.

Dust will be required to be managed as part of radiation management for the Project (Section 9.6.6). The Project has been designed with a strong focus on minimising dust emissions and Cameco will prepare and implement a Dust Management Plan for the Project. The Dust Management Plan will outline the ambient air quality monitoring program, management targets and measures to minimise dust emissions (Section 9.8.6).

It is expected that the impact of dust on local amenity is expected to be low.

#### 11.1.1.4 Air Access

The predominantly fly-in/fly-out workforce required during the construction and operational phases of the Project would utilise charter air services in and out of Mount Keith (approximately 55 km from the Yeelirrie accommodation village). Bus services would operate from Mount Keith airport to the accommodation village and from the village to the mine site.

Should the use of Mount Keith airport not be viable, Cameco would consider options to establish an airstrip at Yeelirrie to accommodate a fly-in/fly-out workforce. This may have an impact on surrounding landholders as they would experience a greater number of flights in closer proximity to their homes than currently. Given the distances to nearby occupied homesteads and the number of anticipated daily flights, the impact on amenity is expected to be low. Operating a fly-in/fly-out workforce directly from Yeelirrie may improve local amenity through improved access to air services for nearby landholders, if the charter service were accessible to the public.

### 11.1.2 Regional Amenity

The Project is located in a sparsely populated area; the nearest towns by road from the proposed Yeelirrie Project accommodation village are Wiluna (approximately 90 km north, residential population 200), Leinster (115 km south east, residential population 700) and Sandstone (135 km south west, residential population 130). The nearest regional cities are Kalgoorlie-Boulder (500 km south by road) and Geraldton (635 km west by road); both have urban populations of around 33,000.

#### 11.1.2.1 Access and Disturbance

Major roads near the proposed Yeelirrie Project are:

- Goldfields Highway;
- Great Northern Highway;
- Geraldton-Mount Magnet Road; and
- Mount Magnet-Leinster Road.

The proposed Project site is approximately 45 km west of the Goldfields Highway along the Albion Downs-Yeelirrie Road.

#### Effect of Road Works on Public Access

Upgrading the intersection of the Albion Downs–Yeelirrie Road and the Goldfields Highway is likely to be the main cause of access disruption and disturbance for users of major roads in the vicinity of the Project. The installation of slip lanes and turning lanes, required to handle the increased vehicle traffic associated with the Project, may create some minor delays and interruptions for road users. It is anticipated these road works will take up to three months and an appropriate traffic management plan would be developed to minimise impact on road users.

#### Effect of Increased Road Traffic

The increased traffic volumes associated with the proposed Yeelirrie development, and particularly the movement of over-dimensional loads on public roads, would impact traffic conditions and involve periodic delays and disruptions to road users during the 18 months of the construction phase of the Project.

Cameco would implement a detailed traffic management plan to reduce the potential annoyance to the travelling public and other road users during the construction phase.

During the operational phase, the impact to the travelling public would be expected to be minimal compared to existing road traffic volumes. Given the anticipated number of vehicle movements, it is expected that overall traffic movements on the Goldfields Highway could increase by around 9%.

The Project is not expected to result in significant adverse traffic effects for road users during either the construction or operational phase.

#### Effects on Landholders near Transport Corridors

The townships of Menzies and Leonora and the suburbs west of Kalgoorlie-Boulder near Anzac Parade and the Goldfields Highway may experience some noise, disturbance and inconvenience

as a result of increased movements of trucks and over-dimensional and indivisible loads. However, as presented in Section 9.7, noise impacts from increased traffic on the Goldfields Highway are predicted to be negligible at residences located along transport routes and would be imperceptible above normal background to residents.

Similarly, residents along the proposed routes for indivisible loads originating in Geraldton, Port Hedland, Kalgoorlie-Boulder and Perth may experience some noise, traffic congestion and delays during the 18 month construction phase of the proposed development. In practice however, the planned transport routes for Yeelirrie are presently used for heavy vehicle movements and, as such, landholders are already exposed to some noise and disturbance from road traffic.

When operations began, the impact to landholders would be expected to be minimal, with traffic from the development representing only a small increase above existing volumes (around 9%).

### 11.1.3 Positive Impact on Amenity

As outlined in Section 2, Project Background, Cameco has identified a number of objectives for the Yeelirrie Project, including:

- maintain an employment source in the northeastern Goldfields of Western Australia; and
- enhance the current opportunities, lifestyle and amenities of local and regional communities.

Cameco is committed to earn the trust and support of local communities and stakeholders wherever it operates. In addition to maintaining safe, clean operations, Cameco pursues initiatives to ensure that local communities benefit from its activities. These initiatives are developed around five pillars:

- business development;
- community engagement;
- community investment;
- environmental stewardship; and
- workforce development.

In Canada, where Cameco has operating mines, these initiatives have established the Company as the nation's largest industrial employer of Aboriginal peoples. In Australia, Cameco will adapt this successful model and implement location-specific programs and initiatives based on ongoing engagement with local communities.

Currently, Cameco supports Indigenous communities in the Wiluna and Leonora regions through participation in the Murlpirrmarra Connection. The Murlpirrmarra Connection assists and supports young Wiluna and Murchison-based Aboriginal men and women, improving opportunities in the areas of education, educational options, sporting pathways, health, rehabilitation, discipline, self-confidence and employment prospects.

Through its 5 pillars program, Cameco intends to positively contribute to the amenity of the region by enhancing employment and business opportunities and supporting community projects. Section 4, Stakeholder Consultation, outlines how Cameco is engaging with local stakeholders about the Project.