

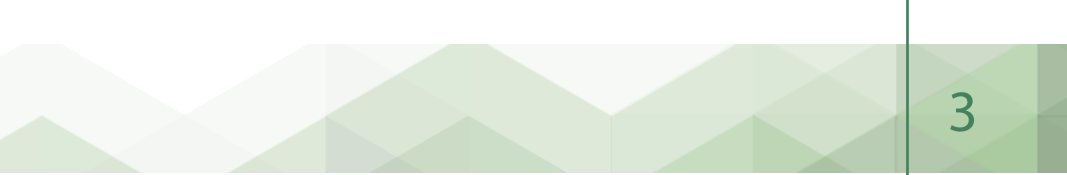


mapped based on the quality and quantity of BRM and are the highest priority for BRM extraction. Boundaries of SGS are often indicative.

Further mapping will occur as more information on BRM resource locations and demand become available.

Strategic BRM resource mapping in Perth and Peel has been developed to enable adequate supply of BRM for a population of 3.5 million, and is publicly viewable as spatial layers through *Ge VIEW.WA*. The mapping considers the quality and quantity of resources available and presents SGS areas, ES and BRM exclusion areas. Exclusion areas are locations that may contain BRM but have been excluded

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decision-maker. When a special control area is utilised for separation distances, they should accommodate the movement of excavation operations.

Scheme provisions should identify incompatible land uses within the separation distance based on potential impacts to adjacent land. The following land uses should not be considered within the separation distance:

- (a) sensitive land uses;
- (b) land uses with on-site impacts or other requirements that may constrain the operations of the existing BRM operations;
- (c) future planned development/expansion of the BRM operations; considered sub-sect 10.3 of the 2013 Urban Td (operations and ops) TfL vision should identify its operation so as to not serve separation distance: operations should not be



4

Separation between extractive industries and sensitive land uses in accordance with the EPA's *Separation Distances between Extractive Industry and Sensitive Land Use (GS3)* should guide the establishment of separation distances to protect community health, safety and amenity. These are available at www.epa.wa.gov.au

Separation distances are influenced by the activity being undertaken, site characteristics, the proposed location of infrastructure, access routes, pits and stockpiles, and the extraction method. Separation distances are not required where there are no current or planned sensitive land uses.

A separation distance is measured from the shortest distance between the extraction area boundary and the sensitive land use and does not always relate to cadastral boundaries.

The extent of a separation distance depends on the following elements:

- (a) the type and scale of the proposal;
- (b) Government requirements for a separation distance;
- (c) existing or potential requirement for environmental licensing and/or works approval;
- (d) industry-specific guidelines;
- (e) technical studies;
- (f) potential cumulative impacts;
- (g) amenity, visual impact;
- (h) environmental and topographic features;
- (i) cadastre; and
- (j) the continuation and/or expansion of the land use in the context of surrounding land uses.

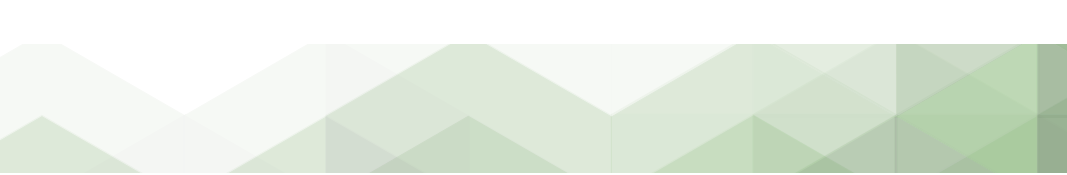
Where excavation work in hard rock quarries requires blasting, the blasting area is an important consideration in defining separation distances and managing the risk to sensitive land uses.

Screening, washing, crushing, grinding, milling, sieving and aeration are activities associated with BRM extraction that may require a different separation distance.

Within an established separation distance, a series of transitional land uses may be used to transition between the extractive industry and a sensitive land use. Common transitional land uses include rural and commercial.

A separation distance is measured from the shortest distance between the extraction area boundary and the sensitive land use and does not always relate to cadastral boundaries. The nature of the extractive industry and the separation distance are an important consideration in determining the appropriateness of transitional land uses and permitted activities.

Transitional land uses should only be incorporated if they





4. Pit Rehabilitation

BRM proposals may include plans for several pits staged over the lifespan of the operation. Smaller pits may achieve better environmental outcomes as the removed top soil is returned within a shorter timeframe. Pit rehabilitation generally follows excavation however decision-makers need to be aware of the proposed arrangements.

Further guidance on site rehabilitation is available in *Guidance for the Management and Rehabilitation of Backfill and Material Pits* (Dec 2008).



The availability and suitability of road access is an important consideration and may require a Transport Impact Assessment (TIA) and management plan. Both proponents and local government can seek a TIA and/or general advice from Main Roads WA regarding trucks and transport routes. These studies are usually undertaken by, or on behalf of, a proponent and consider the following:

- (a) road suitability and the number of truck movements;
- (b) frequency and size of truck movements;
- (c) load considerations;
- (d) route selection and any road upgrading requirements;
- (e) impacts on sensitive land uses and other roads users;
- (f) likely noise impacts;
- (g) any extractive industry license or planning approval conditions limiting cartage activities;
- (h) safety and sight distance in both directions from the proposal's access to a road; and
- (i) safety and road crossing.

To assist with improving referral response times, proponents are encouraged to undertake pre-referral of a TIA to the relevant authorities, particularly where access and proposed haulage routes include major and/or regional roads. DPLH's *Transport and Land Use Planning Guidelines* (2016) may assist both transport and land use planning professionals in undertaking transport impact assessments of land use development proposals.

A pre-assessed TIA can assist decision-makers in determining the need for future transport studies particularly where access and proposed haulage routes are frequent and include major and regional roads.

The Western Australian Local Government Association (WALGA) *Heavy Vehicle Cost Recovery Principles Guideline* (2017) assists decision-makers and proponents in understanding the principles of heavy vehicle cost recovery.

Through local law provisions, a local government may prescribe:

- (a) the routes to be taken for the transport of BRM from a site through the roads within the district, if the proposed routes are not suitable for the proposed haulage;
- (b) the tonnage limits to be transported along a particular route;
- (c) the times during which materials from the site may be transported through the roads within the district.

See Appendix 1 for further guidance on Restricted Access Vehicle (RAV) route assessment guidelines.

4.

Preserving or replanting vegetation can assist in minimising visual impacts from roads, adjoining properties and other key viewing locations. Depending on the size and life of a quarry, a vegetative screen of at least 50 meters width is recommended to assist with visual impacts and help mitigate dust impacts.

The WAPC's *Visual Impacts Assessment Guidelines* (2007) contains detailed guidance on addressing visual impacts, including ways to minimise the visibility of operations.

4.

Noise, dust and blasting are the main risks that require management to avoid adverse health and amenity impacts to sensitive land uses and the community in general.

Noise from BRM extraction is subject to the *Environmental Protection Act 1986* and the prescribed standards under the *Environmental Protection (Noise) Regulations 1997*.

Noise impacts can be reduced through choice of quieter equipment, enclosing fixed plant, construction of barriers such as bunds, 'best practice' site management practices, and appropriate separation distances.

Dust can be generated in several ways including:

- (a) blasting and extraction;
- (b) stockpiling of material;
- (c) processing of material;
- (d) processing of material.



Proposals for hard rock or materials which require blasting should be accompanied by a blasting management plan detailing the blasting method, including directed blasts, frequency and the expected fly rock range and subsequent exclusion zones for blasting.

DMIRS manage the requirements for blasting in hard rock quarries.



- (b) separation distances;
- (c) environmental management requirements;
- (d) surface water and groundwater management;
- (e) secure water supplies to meet domestic and operational demands;
- (f) measures to mitigate impacts on surrounding land from dust, noise and flying rock;
- (g) landscaping to screen activity on the site;
- (h) on-site access roads, parking for cars and other vehicles used on the site; and
- (i) rehabilitation, closure for future land use of a BRM extraction area.

For more information on the matters to be addressed by a management plan, refer to Appendix 3 - Management Plans.

It is helpful for proponents to submit all required applications simultaneously. This saves time and assists the relevant agencies assessing the proposal by ensuring a more coordinated approach. A covering letter referencing any other approvals being sought from other authorities should be attached to the planning proposal to avoid communication overlaps or misunderstanding among different approval authorities.

7

Proponents should consider the following two checklists when preparing an extractive industry proposal.

Checklist 1: 'Site selection considerations' includes issues that should be considered when selecting a site for extractive industries.

Checklist 2: 'Application submission checklist - local government' includes standard requirements for local government development applications, which also apply to applications referred to the WAPC for determination.

These checklists highlight the issues most local governments consider when assessing proposals for extractive industries and may help to ensure submissions are complete. However they do not replace documentation used in assessing an application. Local governments may also have specific requirements not included in these checklists, so proponents should contact the relevant local government to find out if there are any additional requirements. Local governments may wish to adapt Checklist 2 to address any specific variations within their municipality.



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Local government is empowered to make an extractive industry local law under the *Local Government Act, 1995* which establishes license conditions. Elements of these guidelines may be relevant in relation to a proponent's submission and State and local government license requirements for:

- (a) an excavation site plan;
- (b) a works and excavation program;
- (c) a rehabilitation and decommissioning program; and
- (d) the transportation of BRM.

Limitations on excavation may be restricted to:

- (a) 20 metres from the boundary of any land on which



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Summary - Extracted from *Main Roads WA Heavy Vehicle Services and Road Access, Vehicle (RAV) Route Assessment Guidelines* (2018).

Decision-makers need to consider potential community impacts as part of assessing route suitability. The following factors are considered in determining potential community impacts:

In determining noise impacts in relation to RAVs, the following issues are considered:

- (a) areas sensitive to road traffic noise, including residences, schools and hospitals;
- (b) the likely number of RAVs in comparison to existing number of large trucks (three or more axles);
- (c) factors contributing to noise generated by RAVs such as gradients, acceleration/deceleration areas, and road pavement irregularities; and
- (d) factors mitigating RAV noise impact (distance, topography, bunds, cuttings or walls).

The main criterion for noise impact assessment is the change in the numbers of large trucks. Where noise impacts are expected to be significant, mitigating measures such as the following will be considered:

- (a) approved noise reduction request signs;
- (b) a curfew for RAVs during night time hours;
- (c) consideration of alternative routes;
- (d) noise certification of RAVs as a condition of access; and
- (e) speed restrictions.

Where noise impacts are expected to remain significant despite mitigation actions, Main Roads WA will consult with the relevant local government and consider a route noise impact study.

Where the RAV route passes close to abutting development there may be adverse impacts upon people and property due to dust, especially where a route is unsealed. The decision-maker shall consider whether the introduction of the RAVs onto the route has potential to cause significant dust impact by considering:

- (a) distance to buildings and their use;
- (b) likely numbers of RAVs using the route;
- (c) likelihood and amount of dust being produced by RAVs; and
- (d) spreading dust impacts from RAVs entering onto a sealed road from a dirt road.

Where dust and dirt impacts are expected to be significant, the decision-maker will consider options such as alternative routes, speed restrictions and possibly sealing road sections. For short-term projects, when sealing the road is not practical, the proponent shall consider dust suppression (water or chemical stabilisation) and wheel washing at site exit.

In line with government policy, Main Roads WA may require a route that has been given a favourable assessment to undergo community consultation. Main Roads WA and local government will determine the need for community consultation.

Alternative transport modes need to be considered to ensure RAV road transport is the most effective form of transport available for the operation.

Additional information and guidance is available from Main Roads WA Heavy Vehicle Services.



2

Various regulations and guidelines complement and overlap with the planning system, and some BRM



the Water Allocation Act (PWA) 1984, Rights in Water and Damages Act 1914 and Water Act, 1976. Water resource availability is informed by allocation plans and limits under the Rights in Water and Damages Act 1914. Clearing within gazetted Controlled Catchment Areas under the Catchment Areas Act 1947 and the DWER for salinity management purposes.

- (h) If abstraction or de-watering is required to enable the extraction to occur, this could result in significant environmental effects (such as impacts on native vegetation, wetlands or waterways), the DWER may need to refer the proposal to the EPA under s38 of the Environmental Protection Act 1986.
- (i) Public drinking water source areas are defined by the DWER and proclaimed as water reserves, catchment areas or underground water pollution control areas under the Metropolitan Water Services, Sewerage and Drainage Act 1909, or water reserves or catchment areas under the Catchment Areas Act 1947. Land use and development in public drinking water source areas is guided by the following documents:
 - i. WAPC's Strategic Planning 2.2 Guidelines for groundwater (2005), 2.3 Land use, planning and groundwater (2017), 2.7 Protection of groundwater resources (2003), 2.9 Water resources (2006).
 - ii. DWER's Water Quality Policy and National Basin Resource Management Framework (2019), Water Quality Policy and National Basin Resource Management Framework (2016).
 - iii. Sub-regional planning frameworks, region and local planning schemes.

- (j) Where a planning proposal may be negatively impacted by a BRM mining operation undertaken through the Mining Act 1978, the planning decision-maker should seek advice from DMIRS regarding the risk and acceptability of potential on-site impacts.

While the Minister for Mines and Petroleum, the Warden or the Mining Registrar will consider planning instruments when considering an application for a mining tenement, a planning instrument cannot operate to prohibit or affect the grant of such tenement.

- (k) Industries involving explosives and other dangerous goods, including extractive industries with potential on-site risks are regulated by the DMIRS under the Dangerous Goods Act 2004 and the Mine Safety and Health Act 1994. Information on the types of goods and the critical qualities which require licensing are listed in the DMIRS's Safety Guidance Minimum separation distances between explosive facilities and various categories of incompatible land uses are provided in Australian Standard AS2187.1(1998) and the DMIRS's Dangerous Goods Safety Guidance (2018).
- (l) The Mining Act 1978 (the Mining Act) refers to "guidelines" as the mechanism for mandating the form and information required in mining proposals and mine closure plans. Statutory Guidelines are referred to in the definition of a mining proposal and mine closure plan in the legislation and the following DMIRS documents are mandatory requirements: Strategic Guidelines for Water, Air and Waste Management (2020) and Strategic Guidelines for Air and Waste Management (2020).



3

An application for the establishment, extension or expansion of an extractive industry should be accompanied by a management plan and should typically address:

- (a) site description and analysis;
- (b) consideration of statutory and strategic planning;
- (c) management and operations of the proposal;
- (d) consideration and management of impacts on amenity;
- (e) biosecurity measures to prevent the spread of weeds and diseases; and
- (f) environmental impact assessment and management.

Critical elements of management plans may also be addressed as conditions of approval.

Other important elements that may need to be considered depending on the site location and circumstances include:

- (g) demonstration that the existing sensitive land uses within the guidance separation distance of the extractive industry will not be unduly affected by the extractive industry operations;
- (h) identification and justification of appropriate transitional land uses;
- (i) identification of any environmental values requiring protection under Commonwealth and State legislation and appropriate strategies to protect the values;
- (j) in the Perth and Peel regions, proposals aligned with the BRM resource mapping will help address (c) above;
- (k) details of the proposed use, development and management of the site including the environmental and water resource management standards, extractive area, stock piles, machinery maintenance areas, processing plants, fuel storage and on-site access roads, parking for cars and other vehicles used on the site, and proposals for landscaping to screen activity on the site;
- (l) details of arrangements for access to the site, including the roads which it proposes will provide the main vehicular access and likely traffic flows; and
- (m) consideration of sequential land use by establishing a plan for the progressive and ultimate rehabilitation of the site for its intended long-term use. Site rehabilitation should not include waste disposal.