



Department of **Planning,
Lands and Heritage**



Basic Raw Materials Guidelines

October 2018

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1 BACKGROUND

This set of planning guidelines should be read in conjunction with the Western Australian Planning Commission's (WAPC) State Planning Policy 2.4 Basic Raw Materials (SPP 2.4). The guidelines supersede the WAPC's Fact Sheet Basic Raw Materials. They address planning matters relating to Basic Raw Materials (BRM). Other extraction issues may be addressed by the Department of Mines, Industry Regulation and Safety (DMIRS).

The guidelines generally support BRM proposals on all land. Where BRM occur on Crown land (unallocated, reserve or pastoral leases) extraction for commercial sale requires a mining lease. Mining tenements are issued under the *Mining Act 1978* and are administered by DMIRS.

Where BRM occur on private land (freehold) they are not defined as a mineral for the purposes of the *Mining Act 1978*. However, extraction does require approval under the *Planning and Development Act 2005* and is administered by local government, normally through the grant of an Extractive Industry Licence and planning approval.

The guidelines outline a range of land use planning considerations relevant to the establishment, expansion or modification of BRM operations in Western Australia and are structured into two key sections:

PART 1. Information for proponents to gain a general understanding of the land use planning system and requirements associated with basic raw materials proposals.

PART 2. Guidance for planning authorities when determining BRM proposals.

BRM extraction also has environmental and transport implications that need consideration.

2 WHAT ARE BASIC RAW MATERIALS?

State Planning Policy 2.4 defines basic raw materials as:

- sand (including silica sand¹)
- clay²
- hard rock (including dimension stone)
- limestone (including metallurgical limestone and agricultural lime)
- gravel
- gypsum
- substitute basic raw materials.

BRM proposals on private (freehold) land are defined as 'development' requiring planning approval under the *Planning and Development Act 2005* (PD Act). Approval is required for the "development or use of any land" including:

- (a) demolition, erection, construction, alteration of or addition to any building or structure on the land;
- (b) undertaking excavation or other works on the land.

The excavation and building components of an extractive industry application such as offices, fuel storage, hardstand areas and ablution facilities require planning approval.

¹ Note: the *Mining Act 1978* covers silica, mineral and garnet sands on all land holdings.

² Note: the *Mining Act 1978* covers kaolin, bentonite, attapulgite and montmorillonite clays on all land holdings.



PART 1

In Western Australia BRM development approval on freehold land is made under the local scheme. The WAPC delegated some decision-making to local government through their region schemes, where they exist. Where regions scheme do not exist local government maintain the approval authority under their local schemes, however collaboration with the WAPC on approvals is commonplace. See Section 4.0.

The *Planning and Development (Local Planning Schemes) Regulations 2015* model text provisions for local planning schemes define extractive industries as:

premises, other than premises used for mining operations, that are used for the extraction of basic raw materials including by means of ripping, blasting or dredging and may include facilities for any of the following purposes —

- (a) the processing of raw materials including crushing, screening, washing, blending or grading;
- (b) activities associated with the extraction of basic raw materials including wastewater treatment, storage, rehabilitation, loading, transportation, maintenance and administration.

In addition, BRM operations may include:

- clearing and stockpiling vegetation, top soil and overburden
- pit creation and dewatering
- staged excavation of BRM
- an average of 2-6 truck movements per hour, depending on the scale of the operation
- refuelling, cleaning and servicing of vehicles and machinery
- warehousing and/or stockpiling of BRM
- rehabilitation of closed pits.

3 GUIDANCE FOR PROPONENTS

Establishing a BRM operation will generally require a number of different approvals, from different agencies, such as a vegetation clearing permit required under the *Environmental Protection Act 1986* (EP Act) in addition to planning approval.

BRM supplies in Western Australia have been grouped into two categories being Significant Geological Supply (SGS) areas and Extraction Sites (ES). In Perth and Peel, the State Government has undertaken strategic BRM planning and mapping in preparation for a population of 3.5 million people. SGS areas and ES have been more accurately identified and BRM exclusion areas identified. Other regions of the state should have similar BRM categories and these may be less accurately defined, spatially.

When developing BRM proposals proponents should consider the following:

3.1 GENERAL REQUIREMENTS

3.1.1 Become familiar with relevant legislation, policy and guidelines

The relevant legislation, policy and guidelines provide information of an application and the issues to be addressed by proposals. These can potentially avoid delays. See SPP 2.4 BRM Appendix 2 for governing legislation.



3.1.2 Site selection considerations

SGS are identified as the highest priority extraction areas for BRM by the Department of Mines, Industry Regulation and Safety (DMIRS). They provide a strategic, long-term supply of BRM materials requiring protection.

The designation of an SGS area does not obligate the landowner to extract these resources nor guarantee that extraction approval would be granted.

ES comprise all licensed commercial extraction areas for BRM. These may overlap SGS sites. ES are operating commercial industries (extractive) under the *Planning and Development Act 2005*, the *Local Government Act 1995*, the *Mining Act 1978* or a combination of these Acts.

BRM extraction within SGS areas is preferred as these areas have been set aside as strategic geological supply nodes. However, extraction can occur outside SGS areas, subject to approvals and licensing. In Perth and Peel, BRM exclusion areas have been identified due to their environmental values, resource conflicts or for land use planning reasons.

Extractive industry proposals are encouraged to adhere to the BRM resource mapping in Perth and Peel given the strategic planning already undertaken and may require environmental approvals and a clearing permit from DWER where a proposal clears native vegetation.

It is necessary to consider any environmental issues associated with a site to reduce the chance of future conflicts which may lead to delays or refusal. A list of land use planning site selection considerations is provided in section 5.0 Checklist 1 of these guidelines.

3.1.3 Consult relevant authorities issuing required approvals

Consult with the relevant local government before submitting an application to help clarify what is expected from the proponent in terms of information, applications for approvals, consultation with other agencies and relevant guidelines. Having a draft proposal will enable feedback to be more specific to your case. Local governments may have different requirements for establishing an extractive industry (for example policies, development approval, licences). On freehold land, local governments and the WAPC both issue planning approvals in collaboration.

3.1.4 Consultation on environment and natural resource issues

The Department of Water and Environmental Regulation (DWER) and the Department of Biodiversity Conservation and Attractions (DBCA) may need to be contacted for environmental advice in relation to site selection, protection of environmental assets (wetlands, waterways, native vegetation, Threatened Ecological Communities and DBCA-managed lands) plus the management of water quality impacts including groundwater vertical separation.

It is important to establish what approvals will be required in terms of clearing vegetation, industry licence or works approval; license to take water and water resource management issues, including groundwater clearance requirements.

Any BRM extraction from waterways is an activity that will require careful assessment of the suitability of the location, management and rehabilitation to minimise environmental risks. Further information can be found in *Water Quality Protection Note 15 Extractive industries near sensitive water resources* (WQPN 15).

3.1.5 Allocate sufficient time for approvals

Allow time to address contingency issues that may not be identified until applications are submitted and a more thorough assessment commenced. For instance, further flora assessments may be required during spring, which may delay consideration of the proposal.

3.1.6 Appeal rights

A proponent can seek a review by the State Administrative Tribunal (SAT) of part or all of a decision by the WAPC or a local government, under the *Planning and Development Act*, should the proponent disagree with a decision. (for example conditions imposed). However, SAT does not deal with appeals to decisions made under the *Environmental Protection Act*.



4 GUIDANCE ON PLANNING INSTRUMENTS

4.1 PLANNING AND DEVELOPMENT ACT (2005)

The *Planning and Development Act 2015* enables the creation of local and regional planning schemes that have the effect of law. Some areas have region schemes and most areas have local planning schemes. These schemes require development to be approved before it can proceed.

4.2 PLANNING POLICIES

State planning policies (SPPs) provide planning policy control and guidance in Western Australia and are prepared under Part 3 of the *Planning and Development Act 2005*. There are a number of SPPs which may be applicable to land use planning related to BRM extraction. These include but are not limited to:

- 2.0 Environment and Natural Resources Policy
- 2.1 Peel-Harvey Coastal Plain Catchment
- 2.2 Ngarara Groundwater Protection
- 2.3 Jandakot Groundwater Protection
- 2.4 Basic Raw Materials
- 2.5 Rural Planning
- 2.6 State Coastal Planning
- 2.7 Public Drinking Water Source
- 2.8 Bushland Policy for the Perth Metropolitan Region

- 2.9 Water Resources
- 3.4 Subdivision of Rural Land
- 4.1 State Industrial Buffer
- 5.4 Road and Rail Transport Noise and Freight Considerations in Land Use Planning

The SPPs most relevant to extractive industries include SPP 2.4 - Basic Raw Materials, SPP 4.1 – Industrial Buffer Policy and SPP 5.4 Road and Rail Transport Noise and Freight Considerations in Land Use Planning. These policies help protect basic raw material resources and minimise conflict between extractive industries, community amenity and surrounding land uses. Other SPPs may also apply to a specific BRM proposal.

Local governments may also prepare local planning policies under their schemes and local laws on subjects that relate to BRM proposals

4.3 REGION SCHEMES AND FRAMEWORKS

A region scheme provides a statutory mechanism to assist strategic planning, the coordination of major infrastructure and sets aside areas for regional open space. A region scheme usually covers more than one local government area. The content of the scheme may vary for each region, and set out broad land use zones or policy areas and identify land required for regional purposes. BRM extraction is undertaken on land zoned for rural purposes but can occur, as a sequential land use, on land considered for other purposes.

The WAPC prepare region schemes for parliamentary approval. There are currently three region schemes in operation in Western Australia – the Metropolitan Region Scheme (MRS) Peel Region Scheme (PRS) and the Greater Bunbury Region Scheme (GBRS).

The MRS and PRS align with the *Perth and Peel@3.5million* suite of strategic land use planning and infrastructure frameworks. The four frameworks provide strategic guidance to State and local governments on land use, land development, environmental protection and physical and community/social infrastructure to prepare for a population across Perth and Peel of 3.5 million people by 2050.

4.4 LOCAL PLANNING SCHEMES AND STRATEGIES

Local governments are responsible for planning their local communities by ensuring appropriate planning controls exist for land use and development. They do this by preparing and administering local planning schemes and strategies. Local government schemes and strategies are required to be consistent with the broad land uses under the MRS, PRS and GBRS.

Local planning strategies set out the long-term planning directions for the local government, apply State and regional planning policies, and provide the rationale for the zones and other provisions of the local planning scheme and should include relevant BRM resource mapping and local Extraction Sites.

Local planning schemes usually contain provisions to manage land use and development, including zoning maps and a land use table which specifies permissible uses in each zone including BRM extraction on land zoned for rural purposes or considered for sequential land use. Planning schemes also reflect State Planning Policies (SPPs).

Local planning schemes, strategies and SPPs can be viewed at: www.dplh.wa.gov.au



4.5 PLANNING CONSIDERATIONS

The WAPC and local governments will give due regard to relevant planning policy when making decisions on BRM proposals, particularly the impacts on sensitive land uses³. Approvals may be subject to conditions to be met prior to and during operation of an extractive industry. Other planning considerations include the location and use of existing or future current infrastructure, the siting of facilities such as ablutions, temporary offices, mechanical workshops and the like.

Proponents are encouraged to undertake pre-referral of their Traffic Impact Assessment to the relevant authorities, particularly where access and proposed haulage routes include major and regional roads. This will assist in improving referral response times on the final proposal when assessed by the relevant decision maker and in determining any road upgrading requirements. A Transport Impact Assessment should consider traffic volumes plus the impacts of noise associated with heavy haulage traffic.

See SPP 5.4 Road and Rail Noise - <https://www.planning.wa.gov.au/State-planning-framework.aspx>

Transport Impact Statement - <https://www.dplh.wa.gov.au/publications/1197.asp>

For proposals for hard rock or materials which require blasting during the extraction process, a blasting plan should accompany the application. The plan should detail

the blasting method, including directed blasts, frequency and the expected fly rock range and subsequent exclusion zones for blasting.

4.6 SEPARATION DISTANCES AND BUFFERS

Separation distances and buffers apply to land use and development on land in proximity to BRM activities. Separation distances inform the development of buffers to separate potential impacts from activities that may affect human health and amenity.

Buffers to sensitive land uses are influenced by: site characteristics; the proposed location of infrastructure, access routes, pits and stockpiles; and the extraction method.

The EPA's Guidance for the Assessment of Environmental Factors: Separation Distances between Industrial and Sensitive Land Uses (2005) include recommendations for separation distances from sensitive land uses.

The recommended separation distances should be applied to all planning proposals.

While the presence of sensitive land uses and development is a consideration for site selection, to expedite the assessment and provide context to management plans (see 4.7 below), a spatial plan identifying sensitive or potentially sensitive land uses is required to accompany all proposals for and adjacent to BRM operations.

Buffers are also required to protect water quality in nearby waterways and wetlands. The buffer will depend on the design and layout of quarry sites, the risk of water contamination, and the management measures used to protect the waterway or wetland.

The following is a general guide to buffer distance measured from quarrying operations to the likely area affected within a sensitive land use:

- One kilometre (or greater if applicable to the proposal) of hard rock quarries where blasting, crushing or screening are involved
- 300-500 meter buffer of sand and limestone quarries (with buffers distances determined by proposed activities, on an individual basis)

Separation and subsequent statutory buffers are relevant for the duration of quarrying operations and determined from quarrying operations to the sensitive land use. SPP 2.4 - Basic Raw Materials and SPP 4.1 - Industrial Buffer Policy provide further information on separation distances and the establishment of buffers. These policies are available at: <https://www.planning.wa.gov.au/State-planning-framework.aspx>

BRM extraction proposed in a public drinking water source area will require achieving separation distances to the highest groundwater level to protect water quality. Separation distances and other management measures to protect water resources should be addressed in the mine planning stage.

³ Sensitive land uses comprise land uses that are residential or institutional in nature, where people live or regularly spend extended periods of time. These include dwellings, short-stay accommodation, schools, hospitals and childcare centres. Generally excludes commercial or industrial premises.



4.7 MANAGEMENT PLANS AND PROCEDURES

In some instances management plans may contain information relevant to and submitted with a planning application. Planning applications for extractive industries require a comprehensive management plan which provides details of the proposed use, development and management of the site. Issues relevant to planning approvals may include, but are not restricted to the following:

- operational areas including:
 - extraction and stock piles areas
 - crushing/screening process areas
 - machinery maintenance areas, plant and fuel storage
- separation distances or any predetermined buffers
- environmental management requirements
- surface and ground water management
- secure water supplies to meet domestic and operational demands
- measures to mitigate impacts on surrounding land from dust, noise and flying rock
- landscaping to screen activity on the site
- on-site access roads, parking for cars and other vehicles used on the site.

Section 8.0 Management Plans provides further detail on the matters a management plan should address.

It is helpful for proponents to submit all required

applications simultaneously, to save time and assist the relevant agencies assessing your proposal. A covering letter referencing any other approvals being sought from different approval authorities should be attached to the planning proposal to avoid communication overlaps or misunderstanding among different approval authorities.

4.8 STRATEGIC BRM RESOURCE MAPPING IN PERTH AND PEEL

Strategic BRM resource mapping in Perth and Peel has been developed to enable adequate supply of BRM to meet future demands beyond a population of 3.5 million. The mapping considers the quality and quantity of resources available, BRM exclusion areas, Significant Geological Supply (SGS) areas and Extraction Sites (ES). Exclusion areas are likely to have protected environmental values or are excluded for planning or infrastructure reasons.

Extractive industry proposals that adhere to the BRM resource mapping in Perth and Peel are more likely to be granted environmental and planning approval. A clearing permit is also still required from DWER for extractive industry proposals.

In the Bunbury and Busselton area current and future supplies of BRM were assessed in 2012. While significant sand and other BRM supplies in the area are constrained by environmental factors, substantial potential supplies to meet future demand for all BRM products except limestone, including lime sand, and clay, exist.

Digital BRM resource mapping is maintained by DMIRS and accessible via the DMIRS website. The mapping identifies SGS areas and known ES.

4.9 BASIC RAW MATERIAL SUBSTITUTES

The use of substitutes for BRM, that have been approved for use through the State's environmental regulation and have demonstrated structural or engineering requirements, public health and environmental approvals are encouraged for use to reduce future demand on sand, limestone, gravel and rock.



5 SITE SELECTION CHECKLISTS

Applicants 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 would also apply to applications referred to the WAPC for determination.

These checklists highlight the issues most local governments will consider when assessing proposals for extractive industries, and will help to ensure submissions are complete. Local governments may have specific requirements not included in these checklists, so applicants 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.

Checklist 1

Site selection considerations	
Environmental attributes	Tick
• The site is not listed for conservation purposes	
• The site provides recommended setback to existing wetlands, water courses and drainage lines	
• The proposal will not involve clearing of native vegetation. That is, the site is bare of vegetation from previous uses or does not contain bushland of significant quantity	
• The proposal will not involve the disturbance of acid sulfate soils	
• The site is not considered priority agricultural land	
• The site is not in the flood plain or has a high ground water table	
Planning considerations	
• The site has not been denoted as unacceptable or mapped as an exclusion Area for BRM extraction and proposals aligns with defined SGS areas or ES. Note: outside defined SGS areas or ES approvals may be more difficult	
• The nature of the proposed activity is consistent with the current and proposed zoning or represents a sequential land use opportunity for future development, considering future timeframes	
• The timeframe of the proposed activity considers the long-term impacts on local communities and future land uses proposed within the vicinity or separation distances to sensitive land uses	
• Appropriate separation distance to existing infrastructure such as public drinking water supply bores, water mains are maintained	
Site location considerations	
• The proposed activity is compatible with surrounding land uses	
• The site does not contain any heritage, Aboriginal or European	
• The proposed activity will not cause disturbance to the amenity of the area	
• The site has safe access to major roads, and existing roads are in good condition. The access roads proposed are suitable for the volume of traffic and type of heavy vehicles	
• The site is not in a visually significant location, such as on a ridge, or visible from major roads and will not have a negative visual impact on major roads, scenic areas or adjoining properties	
• The site provides an adequate separation distance to sensitive land uses such as (but not limited to) residential or special rural area, existing dwellings in a rural area, schools or hospitals. Depending upon the nature of the BRM operations separation distances should be 300 metres to 1000 metres	
• Scheme water availability and the potential a ground or surface water license under the <i>Rights in Water and Irrigation Act 1914</i>	
• Operational issues such as hours of operation, noise and dust monitoring and site access are addressed with the view to minimising any potential noise or dust issues for surrounding sites	
• Other relevant State and local planning policies and strategies, including but not limited to the following have been addressed: <ul style="list-style-type: none"> – <i>State Planning Policy 2.4 Basic Raw Materials</i> – <i>State Planning Policy 4.1 State Industrial Buffer Policy</i> – extractive industry local laws – local planning scheme provisions – region scheme planning provisions 	



5.1 SUBMISSION PROCEDURES

The following BRM procedural requirements apply across Western Australia.

- (a) Extractive industry applications on freehold land will be submitted directly to the relevant local government for assessment and approval based on relevant local planning scheme provisions, policies or strategies, where applicable.
- (b) Region schemes in WA have different approaches to extractive industries. Extractive industry applications on freehold land within the area covered by a region scheme may also require WAPC approval in accordance with the region scheme and any delegations or notification made under that scheme. Where WAPC approval is required by a region scheme, the relevant local government is required to forward the application to the WAPC for determination.

Checklist 2

Application submission checklist – local government

Note: refer to the relevant local government's local law and local planning schemes for more specific application requirements. Applicants will need to provide all of the following information. If the information is not provided, approval is likely to be delayed while further enquiries are made.

Legal considerations

- written consent from owners of site
- DWER approval – clearing permit, Rights in Water and Irrigation licensing (where applicable)
- extractive industry license
- local government submission form and fees
- WAPC submission form and fees (where applicable)
- certificate of title

Site details

- existing and proposed land contours
- description of land – roads, boundaries, fences, existing buildings, water resources including groundwater levels, ridge lines and existing vegetation

Proposed extractive industry details and staging plan

- location, total area and depth of proposed excavation including appropriate vertical separation between the highest groundwater table, during and post BRM extraction
- location and proposed maximum height of stockpiles
- how much material is proposed to be extracted (on an annual and total basis)
- method and route(s) of proposed vehicle access to and from the site
- location of proposed buildings, treatment plants and tanks

Details of management of operation

- management of impacts on water quality, particularly if within a Public Drinking Water Supply Area
- noise and vibration attenuation – hours of operation, types of activities such as drilling or blasting, type of vehicles to be used, maximum number of truck movements per day, earth bund locations
- screening – location of screening and species to be planted, staging of operations
- dust management plan - dust suppression methods, location of stockpile areas relative to prevailing winds
- environmental management - measures to protect existing vegetation, manage acid sulfate soil, control dieback, manage fire and flood risk, manage storm water run-off and water quality, drainage details, and treatment of wastes
- rehabilitation plan



PART 2

6 GUIDANCE FOR PLANNING AUTHORITIES

6.1 STRATEGIC BRM PLANNING

Strategic BRM planning has been undertaken in the Perth and Peel regions to provide industry proponents and decision-makers information on where BRM resources are located and where extractive industries are best located and excluded. This has resulted in BRM resource mapping in Perth and Peel.

Local government is encouraged to undertake a similar process for BRM resources in regional areas where strategic planning can help avoid future land use conflicts, ensure the protection of strategic BRM supplies and protect regional and biodiversity and environmental values.

In the Greater Bunbury region, the Greater Bunbury Region Scheme (GBRS) identifies areas of known minerals and basic raw materials, as well as areas constrained for extraction and others designated as strategic resource areas.

SPP 2.4 Basic Raw Materials provides policy objectives and measures to assist with strategic BRM planning. Advice from the relevant government agencies on geological supplies, environmental values and planning matters should be sought from the appropriate agencies. BRM resource mapping provides for the mapping of geological resources plus the identification of SGS areas, ES and exclusion areas.

6.2 MAKING AND AMENDING PLANNING INSTRUMENTS

Implementation of SPP 2.4 Basic Raw Materials will occur through planning and decision-making processes at both the State and local government levels, particularly the assessment and determination of subdivision and development applications. These processes are informed by State and local government planning instruments, such as schemes, local planning strategies, policies and structure plans, and these instruments should include provisions that:

- reflect and accord with SPP 2.4 Basic Raw Materials and the Planning and Development (Local Planning Schemes) Regulations 2015;
- recognise SGS areas, relevant separation distances and subsequent buffers for sensitive land uses;
- identify land for '*sequential land use*' as such until the basic raw material has been extracted or development is anticipated on the site;
- ensure extractive industries can be undertaken within confirmed SGS areas and approved ES while recognising associated separation distances/buffers;
- have due regard to SPP 2.4 Basic Raw Materials and provisions related to BRM when assessing extractive industry proposals, and development applications within, adjacent to or in close proximity to SGS and ES; and
- have due regard to the EPA's Guidance Statement No. 3: Separation Distances between Industrial and Sensitive Land Uses and recommended separation distances.



Instruments related to the Perth and Peel regions should also align to the BRM resource mapping in Perth and Peel, identified SGS and ES, sequential land uses plus areas denoted as exclusion areas for BRM extraction.

6.3 ASSESSMENT OF PROPOSALS FOR BRM EXTRACTIVE INDUSTRIES

Planning authorities' assessment of proposals to establish, extend or expand an extractive industry should consider the following issues:

- align proposals to DMIRS BRM resource mapping in Perth and Peel, SGS and ES and extractive industry exclusion areas;
- the significance of the resource if identified as a SGS area and local basic raw material requirements;
- the quantity and quality of resource availability from the existing or proposed extractive industry operation;
- finished ground levels in relationship to groundwater, infrastructure and engineering requirements, subsequent land use and sequential development;
- management of resource extraction, and related site rehabilitation and restoration to:
 - maintain appropriate horizontal separation between extraction and water supply infrastructure;
 - avoid groundwater exposure and ensure an appropriate vertical separation distance to groundwater is achieved to enable sequential land use; and
 - protect groundwater quality.

- the site's potential for sequential land use and the ability to rehabilitate the land to a form or for a use which is compatible with the local planning scheme;
- the effect of vehicular traffic, noise, blasting, dust and vibration on the amenity of adjacent land uses in the local community having regard to existing and future uses;
- the ability to stage the extraction operations to avoid conflicts with any adjacent sensitive land uses;
- the effect of the proposed extractive industry on agricultural land;
- the availability and suitability of road access;
- the effect of the proposed extractive industry on any native flora and fauna; landscape; water resources, groundwater quality, quantity and use; surface drainage and surface water quality;
- sites of cultural and historic significance on and near the land, having regard to how they are likely to be integrated with subsequent land uses;
- potential impacts on fragmentation and connectivity of remnant vegetation;
- location and stability of excavations, stock piles and overburden dumps; and
- rehabilitation of the land consistent with its long term future use.

Further explanation of these and other relevant assessment considerations are outlined below.

7 ASSESSMENT CONSIDERATIONS

7.1 LIFESPAN OF A PROJECT

All BRM operations have an estimated extraction rate per year and overall lifespan based on the amount of BRM available and surrounding land use pressures. In the Perth and Peel regions, for land that is to be used sequentially, development time frames, extraction license duration and planning approvals need to be considered together with finished levels for the subsequent land use.

7.2 PIT DESIGN

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 time period. Pit rehabilitation generally follows excavation; however planning authorities need to be aware of the proposed arrangements.

Further guidance is available in the *Guidelines for the Management and Rehabilitation of Basic Raw Material Pits 2008*. These guidelines outline best practice that may assist proposals on private land. The custodian of the guidelines is now DBCA and can be accessed via:

- www.dpaw.wa.gov.au/images/documents/conservation-management/forests/FMP/preparing_FMP_2014-23/guideline_brm_rehabilitation.pdf



7.3 OPERATING HOURS

Operating hours are generally between 5am and 5pm, 6 days a week, however may vary for instance major infrastructure projects may require operations on Sunday. Operating hours may be addressed by a condition of approval.

7.4 CONSERVATION VALUES

BRM operations have the potential to disturb native vegetation, including Declared Rare Flora (DRF) and priority flora, as well as threatened and priority fauna species. Clause 51C of the EP Act outlines circumstances when the clearing of native vegetation is permitted.

7.5 WATER SUPPLY AND AVAILABILITY

Water is needed for cleaning machinery and trucks, domestic uses and in processing BRM. Access to scheme water is usually required.

- BRM operations may also impact on nearby surface water and groundwater resources. *Water Quality Protection Note 15 Extractive industries near sensitive water resources*, produced by the Department of Water and Environmental Regulation (DWER), contains information on operations near sensitive water resources. If located in a Public Drinking Water Source Area *Statewide policy no. 1: Policy and guidelines for construction and silica sand mining in public drinking water source areas* (DWER) should be adhered to.
- Dewatering may be included in the proposal. DWER Water Quality Protection Note 13 provides best management practices for the dewatering of soils.

A licence to dewater or to gain access to water may be required under the *Rights in Water and Irrigation Act 1914*.

- Determination of extraction finished levels should consider advice regarding groundwater levels.

7.6 BUFFERS AND SEPARATION DISTANCES

Buffer distances are influenced by site characteristics, the proposed location of infrastructure, access routes, pits and stockpiles and the extraction method.

- Separation between extractive industries and sensitive land uses in accordance with EPA's *Separation Distances between Industrial and Sensitive Land Uses (GS3)* should guide the establishment of formal buffers to protect community health, safety and amenity. These are available on:
http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/GS3-Separation-distances-270605.pdf
- Buffers are also required to protect water resources, including water quality in nearby waterways and wetlands. The buffer will depend on the design and layout of the premises, the risk of water contamination, and the technology and management measures used to protect the waterway or wetland.
- Extraction of BRM will normally be subject to achieving vertical separation distances to the groundwater table to protect water quality. The separation distance will vary based on the value of the groundwater resource (for example, public drinking water source areas).

Further information on buffers can be found in SPP 2.4 Basic Raw Materials.

7.7 TRANSPORT MANAGEMENT

Extractive industries can have significant impacts on roads, other road users, community amenity and safety, and the environment. Due to these factors the availability and suitability of road access is an important consideration and may require a Transport Impact Assessment and management plan. These studies are usually undertaken by/on behalf of a proponent and consider the following:

- road suitability and the number of truck movements;
- frequency and size of truck movements;
- load considerations;
- route selection and any road upgrading requirements;
- impacts on sensitive land uses and other roads users;
- likely noise impacts;
- safety and sight distance in both directions from the proposal's access to a road; and
- safety and road crossing.

See Attachment 1.

A pre-assessed Transport Impact Assessment 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.



7.8 VISUAL IMPACTS

Preserving existing vegetation can assist in minimising visual impacts from roads, adjoining properties and other key viewing locations. DWER recommends a vegetative screen of at least 150m between adjoining roads and pits. The WAPC's Visual Landscape Planning in WA (2007) contains detailed guidance on addressing visual impacts, including ways to minimise the visibility of operations.

7.9 NOISE AND DUST

Noise from BRM extraction is subject to the EP Act and the prescribed standards under the *Environmental Protection (Noise) Regulations 1997*. As excavation work may require blasting, the air blast of which is also subject to prescribed standards, the consideration of blasting areas will assist in defining appropriate buffers to reduce disturbance to any neighbouring sensitive land uses.

Dust can be generated in a number of ways including:

- blasting and extraction
- stockpiling of material
- processing of material
- transport movements
- soil erosion.

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

7.10 IMPACTS ON AGRICULTURE

Dust is believed to have a number of both direct and indirect effects on production systems located in an area influenced by elevated dust deposition (McCrea 1990). The proponent may consider the possible effects below:

- reduced photosynthesis leading to loss of plant yield;
- increased pest and disease incidence causing yield losses and reduced quality of horticultural produce;
- dust contamination reducing fruit and vegetable attractiveness;
- dust hindering the pollination of small seeded fruits causing abortion and deformed fruit; and
- the possibility of animal health problems such as ovine pneumonia and pinkeye.

7.11 IMPACTS ON COMMERCIAL ENTERPRISES

Dust can also impact on commercial enterprises that are sensitive to dust, such as spray painting and electronics assembly plants. These commercial activities require a dust-free environment to operate. Elevated dust levels in the area would prohibit their operations.

8 MANAGEMENT PLANS

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

- site description and analysis;
- consideration of statutory and strategic planning;
- management and operations of the proposal;
- consideration and management of impacts on amenity;
- biosecurity measures to prevent the spread of weeds and diseases; and
- 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:

- (a) 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;
- (b) identification and justification of appropriate buffer distances;
- (c) identification of any environmental values requiring protection under Commonwealth and State legislation and appropriate strategies to protect the values.



- (d) in the Perth and Peel Regions, proposals aligned with the BRM resource mapping will help address (c) above.
- (e) details of the proposed use, development and management of the site including the environmental and water resource management standards, quarry areas, 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;
- (f) 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
- (g) consideration of sequential land use by establishing a plan for the progressive and ultimate rehabilitation of the site for its intended long term use.

9 ENVIRONMENTAL LICENSING AND WORK APPROVAL

Under sections 52 and 53 of the EP Act a works approval is required for the construction of prescribed premises or to carry out certain work on existing prescribed premises.

BRM extraction is not listed in Schedule 1 of the *Environmental Protection Regulations 1987*. However some associated operations (for example screening, washing, crushing grinding, sizing or separation of material) may be prescribed and require authorisation under Part 3 Division 2 of the EP Act.

In *Guidance Statement: Land Use Planning* (2015), DWER outlines its policy of assessing applications under Part V Division 3 of the EP Act concurrently with applications for planning approval and making a determination once relevant planning decisions have been made.

9.1 CONDITIONS OF APPROVAL

Approval of an application for an extractive industry may include conditions which cover, but are not limited to:

- minimisation of air, water, noise and visual pollution;
- stabilisation of excavations, stock piles and over-burden dumps;
- protection of the amenity of existing adjacent land uses in the local community;
- protection of the environment and ensuring the rehabilitation of the land is consistent with its long-term future use;

- mitigation measures such as earth mounding, landscaping, or design and construction measures should be incorporated to minimise the adverse impacts associated with noise, dust, vibration, traffic and visual amenity; and
- annual reporting of production to the agency responsible for the administration of the *Mining Act*.



10 OTHER GOVERNMENT ADVICE

State and local government should assist the implementation of SPP 2.4 Basic Raw Materials by:

- giving advice, support and information to the general public in relation to the development and land uses within, adjacent to or in close proximity to *Significant Geological Supplies, Extraction Sites* and associated separation distances/buffers;
- ensuring streamlined exchange of information on the location of extractive industries approved by local government through the establishment of data protocols; and
- monitoring and assessing the application of the policy.



ATTACHMENT 1

Summary - Extracted from Main Roads WA Heavy Vehicle Services Standard Restricted Access Vehicle (RAV) Route Assessment Guidelines.

COMMUNITY CONSIDERATIONS

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

NOISE

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

- areas sensitive to road traffic noise, including residences, schools and hospitals;
- the likely number of RAVs in comparison to existing number of large trucks (three or more axles);
- factors contributing to noise generated by RAVs such as gradients, acceleration/deceleration areas, and road pavement irregularities; and
- 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:

- approved noise reduction request signs;
- a curfew for RAVs during night time hours;

- consideration of alternative routes;
- noise certification of RAVs as a condition of access; and
- speed restrictions.

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

DUST AND DIRT

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:

- distance to buildings and their use;
- likely numbers of RAVs using the route;
- likelihood and amount of dust being produced by RAVs; and
- 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.

COMMUNITY CONSULTATION

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

ALTERNATIVE TRANSPORT MODES

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

FURTHER ASSISTANCE

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