

SECTION 2

NEED FOR THE PROPOSED DEVELOPMENT AND ALTERNATIVES

The following section provides a description of the need for the proposed RDC and the alternatives considered. Alternatives include transportation modes, site location, design and layout. It also evaluates the proposal in terms of site suitability criteria.

2.1 PROJECT OBJECTIVE

Sydney's main local sources for construction materials, particularly the PLDC Scheme are being rapidly depleted. The PLDC through the Penrith Lakes Scheme currently supplies the bulk of construction materials into the Sydney market. This is a joint venture extractive industries project between Readymix, Boral Pty Ltd (Boral) and Hanson Australia Pty Limited (Hanson) with joint production from the scheme peaking at 6.73 Mtpa in 1999/2000. Since this time production has fallen to 5.05 Mtpa in 2003/04 and is projected to be only approximately 4.6 Mtpa in 2004/05. Production is expected to continue to gradually fall until closure of the operation in around 2010-12. As construction material sources close to Sydney become exhausted it will be necessary to source construction materials from outside the Sydney Basin.

Consequently Readymix has been required to find alternative sources of quarry materials to meet existing and expected demand in the Sydney Region. In order to replace production from the PLDC Scheme, Readymix is looking to source material from outside of the Sydney area, and transport that material into the Sydney market place. Quarry sites outside the Sydney Basin have been identified and planning to develop these sites is underway. Rail is considered the preferred option for bulk transport of construction material to Sydney as it allows use of existing rail infrastructure, is cost effective and has less impact on the environment than road transport.

The proposed RDC at Rooty Hill would receive construction materials sourced from quarries outside the Sydney Basin, store and blend these materials and distribute them to customers in the Sydney market on a longterm basis. The proposed development includes a Concrete Batching Plant to supply concrete to the local region.

The site has been designed to comply with the principles of ESD to minimise adverse or irreversible environmental damage resulting from the proposed development. The development complies with the principles of ESD in the short and long term. The proposed RDC design includes best practice design and operating procedures and would use the latest technology to provide efficient water and energy use and minimise environmental impacts

2.2 NEED FOR THE PROPOSED DEVELOPMENT

Construction materials are used in concrete, asphalt, gravel, structural rock, rail ballast, manufactured sand and other building products. Large quantities of these materials are used in the building and construction industry. During 2001-2, NSW used approximately 34 Mt of construction material, worth approximately \$394 million. About half of this was used in the Newcastle-Sydney-Wollongong regions (DMR 2004). The demand for construction materials is particularly high in the Sydney metropolitan area due to increasing population growth.

Over recent years the Sydney region has increasingly imported material to meet construction and building demands. The region currently imports approximately 13% of its construction sand requirements and 23% of coarse aggregate requirements (DMR 2004). There will be an increasing reliance on imports in the future as the current local sources at Penrith Lakes and Kurnell are

depleted. The PLDC is the major source of construction materials in the Sydney Basin. Production at Kurnell and from the Prospect Quarry will be restricted in the medium term.

The NSW construction industry is of major economic importance to NSW. In 2002-3 the industry contributed 6.2% of the Gross State Product with a value of \$22,098 M (ABS 2004). It employed approximately 243,000 people in 2002-3 which was 7.8% of the State workforce. The continued supply of construction materials to this industry will be required if this contribution to the NSW economy is to continue.

The “do nothing” option was considered. This strategy is not in accordance with the Readymix business plan. It would result in the loss of employment for existing employees at or associated with the Readymix PLDC operations. For these reasons the option of not proceeding with the proposed RDC was not considered further by Readymix.

2.3 TRANSPORTATION ALTERNATIVES

In reviewing the location of source materials, Readymix also reviewed alternative modes of transport for delivery of these materials to the Sydney market. Delivery of materials will require long haul transportation from country regions to the Sydney Metropolitan area and the distribution of the materials to customers including Concrete Batching Plants and Asphalt Plants.

Readymix has identified potential sources of quarry materials located approximately 160km from Sydney by road and 190 kms from Rooty Hill by rail. Transportation of the materials to the Sydney market directly from the quarry to customers would require about 121,000 loads per year, assuming the total quantity required at the proposed RDC is 4 Mtpa. Total truck kilometres travelled would be approximately 39 million km.

This option is a high cost option due to the increased truck fleet required and the high cost of road transportation compared to the alternative use of rail when transporting large quantities of bulk materials over long distances.

The alternative of hauling material by rail to Rooty Hill and then local distribution by truck to customers would require approximately 1100 trains per annum totalling 418,000 rail km. Assuming that the materials had to be transported a further 30 km on average to customers from Rooty Hill by truck, 121,000 loads would be required per year totalling approximately 7.3 million truck km.

The reduction in truck kilometres resulting from the use of the long haul rail instead of road only would be approximately 31.5 million truck km.

In addition, given the more central location of Rooty Hill to the Sydney market compared to the PLDC there would be approximately 3.6 million truck km less than the current situation.

The use of rail and the corresponding reduction in truck kilometres travelled has significant socio-economic and environmental benefits.

Rail transportation provides safety and cost benefits to the community. Austroads and Bureau of Transport Economics data indicates the following comparative accident rates (ACIL 2001) (ACIL Consulting 2001. Rail in Sustainable Transport – A Report to the Rail Group of the Standing Committee on Transport):

- Road freight : 3.8 fatalities per 10⁹ tonne kilometres; and
- Rail freight : 0.55 fatalities per 10⁹ tonne kilometres.

In addition the lower frequency of rail accidents is reflected in cost savings to individuals, industry and the community.

Environmentally the benefits of rail include reduced resource consumption and air emissions, in particular greenhouse gas emissions. Compared to freight transport by road, a freight train uses one third of the fuel to move 3000 tonnes of freight (ACIL 2001). Average energy efficiencies for rail freight vary between 0.15 and 0.40 MJ (megajoules) per tonne Kilometre while truck transportation varies between 1.50 and 3.10 MJ per tonne Kilometre. This has flow-on air emission benefits. Since 1990 rail transport emissions have decreased by nine percent despite increased freight and passenger numbers. By comparison road transport emissions have increased by 18 percent over that period (Australian Greenhouse Office 1999).

For long haul transport of bulk materials, rail transportation was identified as the preferred means of transferring the materials to Sydney prior to local delivery to customers by road in the Metropolitan Area.

The NSW Government has established the Freight Infrastructure Advisory Board which is advising the government on infrastructure that would be needed to move freight off Sydney's roads. The Board will provide expert advice on a number of matters including:

- The design of an intermodal terminal network to improve freight distribution;
- Infrastructure required to service the intermodal network; and
- Potential changes to work practices to maximise the efficiency of truck haulage.

In order to capitalise on the benefits of bulk rail transportation, distribution facilities are required within Metropolitan areas to facilitate the efficient transfer of the materials from road to rail, for final transportation of the customer. Without such distribution facilities the benefits and economies of scale achieved via the use of rail transport are lost and the only basic alternative would be long distance haulage direct to customers in the metropolitan area. This is not a preferred option and not in accordance with State Government Policy in relation to freight transport and handling. Distribution centres also have the benefit of being able to receive materials from multiple quarry sources by rail.

The Metropolitan Freight Strategy which is being developed by the NSW Government is based around the following elements:

- Intermodal depot network and road and rail network improvements;
- Effective movement of freight; and
- Implementation of regulatory policy to enforce this strategy.

The development of the proposed RDC including the transportation of construction materials into the Sydney Region by rail and the distribution of those materials to the market from the RDC by truck would be consistent with the aims of the Freight Infrastructure Advisory Board and the strategy being developed.

Readymix has lodged a development application for the development of a quarry at Marulan. This quarry would be one of the supply options for the proposed RDC.

2.4 SITE SELECTION CRITERIA

The importation of bulk construction materials by rail into the Sydney region requires the establishment and operation of a distribution centre at which the materials would be unloaded from rail wagons, temporarily stored on site, blended to meet customer requirements and transferred to trucks for distribution to customers within the Sydney region.

The key criteria for the selection of a site for the RDC include:

- Availability of land with a suitable size for an RDC;
- Location within an established industrial area with appropriate zoning;
- Central location for efficient distribution to the current and future Sydney market;
- Direct access to a main railway line;
- Direct access to the main transportation network in the Sydney region, particularly with direct road links to the Sydney Motorway network;
- Road links between the RDC site and the Motorway network to avoid residential areas;
- Use of the site for the RDC to be compatible with existing adjoining land uses;
- Environmental impact of development of the site to be able to be managed so as to meet the legislative requirements and community expectation; and
- Development to be in accordance with State and Local Government policies in relation to regional investment, employment and business development.

In addition it was considered preferable if the site would enable the construction of a Concrete Batching Plant as part of the RDC to minimise local transportation of construction materials and to supply concrete to the local region. The suitability of the site for a Concrete Batching Plant would consequently have to be in accordance with the site suitability criteria specified in Table 1 of the Concrete Works EIS Guidelines (DUAP 1996).

2.5 SITE ALTERNATIVES

Four sites were identified in the Sydney Metropolitan Area that potentially meet the site selection criteria, they include:

- St Mary's Rail Siding

This location has an existing rail siding operated by Pacific National. There is no direct access to the Sydney Motorway network from the site. The capacity of the rail siding and depot is considered insufficient for the scale of the proposed RDC;

- Glenlee

This location in Sydney's South West is within an industrial zoned area and is serviced by an existing railway siding. The site however does not have the direct access to the Sydney Motorway network and its location within the Greater Sydney Region does not provide for efficient distribution to the overall Sydney market. Because it is not a central location it

would require additional truck kilometres to service the Sydney market and would have cost and safety implications;

- Chullora

This location adjoins an existing rail line and is owned by RailCorp. There is no direct access to the Sydney Motorway network from the site. Rail access to the site from the south is logistically complex. The site has been identified by the NSW Government as a potential small freight intermodal site for freight handling.

The major limiting factor for development of a distribution centre at Chullora is transporting materials on the Hume Highway for approximately 5-6 kilometres to the north or south before entering the Motorway system. This would include passing adjoining residential areas. Material from the proposed RDC at Rooty Hill only needs to be transported between 600 m and 2 km through industrial areas to access the Motorway system;

- Rooty Hill

This location is of sufficient size for the RDC and has direct access to rail and the M7 Motorway which opens up the overall Sydney Motorway network. Readymix already have operations at Rooty Hill and own land adjoining the Main Western Railway line. It is located in an expanding industrial area within Greater Western Sydney and is a suitable location for the proposed facility.

A further alternative would be the establishment of several smaller distribution centres within Sydney. These distribution facilities would be placed in strategic locations as to provide the most efficient coverage to a certain area of the Greater Sydney Region. Difficulties arise with this option when trying to locate several areas in Sydney that have direct access to the Motorway network and access to a rail siding. Due to the smaller quantities arriving at each distribution facility in comparison to a single RDC the economies of scale provided by rail transport decrease if this option were to be pursued.

The proposed development site at Kellogg Road, Rooty Hill was identified as the preferred site for the RDC due to its unique access opportunities in relation to the road and rail system. The site is located adjacent to the main western Sydney rail system and provides direct ready truck access onto the M7 Motorway system, through an industrial area, for highly efficient distribution of materials around the Sydney road network.

2.6 SUPPLY ALTERNATIVES

As a major supplier of construction materials, Readymix is investigating potential quarry resources on an ongoing basis. For the Sydney market, these investigations include deposits within 350 kilometres of Sydney, as any greater distance is likely to result in supply to Sydney being uneconomical. Whilst geological deposits that are potentially suitable for generating construction materials are not especially rare, it is difficult to find large deposits that are economically viable and that are not significantly constrained by surrounding land uses.

In order to replace production from the Penrith Lakes Scheme, Readymix requires a large scale resource to ensure long term economic viability. Resources of this scale within the Sydney basin are constrained due the extent of urban development and therefore it is necessary to find a resource that is a viable distance from Sydney. Such resources are typically located at least 100 kilometres from Sydney metropolitan area. At this distance from the target market and due to the volumes of material required to be transported, it becomes necessary to use rail transportation to ensure economic viability and limit environmental impacts. Without the establishment of the

proposed distribution centres in the Sydney Metropolitan area, such as the proposed Rooty Hill RDC, the use of rail transport would not be viable.

2.7 PREFERRED SITE

Readymix assessed available sites in the Sydney Region in terms of the criteria identified in Section 2.4. The only site which met the criteria was the proposed development site at Rooty Hill. The site is of adequate size for the proposed RDC incorporating a Concrete Batching Plant. It adjoins the Main Western Railway Line with an area available for the construction of a suitable railway siding. It is adjacent to the M7 Motorway now under construction with access to and from the motorway on roads which only pass through existing industrial areas. The development on the proposed site is in accordance with the NSW State Government and Blacktown City Council strategic direction policies for the local area and specific requirements in terms of investment, employment and freight transport. Blacktown City Council has identified the company's existing Humes operation as a significant corporate citizen (BCC 2005). In addition Blacktown City Council has identified the City of Blacktown as a popular location for manufacturing based companies to use as a venue for Distribution Centres which store and distribute product.

If the growing demands of the Metropolitan area in terms of residential, commercial and industrial development are to be met, the RDC will need to be positioned around the growth centres. Population increases generally lead to increased demand for new homes as well as commercial, industrial and infrastructure developments. These projects cause an increase in the demand for concrete. Placing the concrete plant close to growth areas would benefit the community by decreasing truck haulage on local roads and infrastructure, as well as creating employment opportunities within the local community.

The assessment undertaken for preparation of this EAR indicates that the environmental impact of development and operation of the site for an RDC would be able to be managed so as to minimise environmental impacts and meet relevant planning and environmental requirements.

2.8 SITE LAYOUT ALTERNATIVES

Technical requirements and environmental constraints were the key determinants in the location of the various components of the proposed RDC on the development site.

Environmental constraints on the proposed development site primarily related to the location of Angus Creek and associated vegetation communities. In addition the southern section of the site is located within the 1:100 year flood zone which placed a limitation on the extent of development possible on that part of the site. The proximity of Nurragingy Reserve was also taken into account in the location of facilities.

Technical requirements for operation of the RDC included access to the Main Western Railway line for delivery of materials, suitable area for the storage of materials on site, capacity to allow easy and safe movement of trucks on site and space for car and truck parking required for operation of the facility. The existing access arrangement on Kellogg Road needed to be maintained.

The site development plan shown in Figure 1.3 ensures that the maximum area of native vegetation and associated habitat adjacent to Angus Creek is maintained and where possible a 40m buffer zone has been established adjacent to the creek.

Alternative layouts which located major RDC components south of Angus Creek were rejected on the likely impact they would have on Angus Creek flood levels. Only the rail siding, unloading station and conveyor are located in this area adjacent to the Main Western Railway line. The site of the conveyor / service road crossing of Angus Creek is at the location of a previous creek

crossing and the route of the conveyor and road to it on the southern side of the creek largely follow the access track to the old crossing.

Alternative locations and layouts for the rail siding and unloading station were considered. The constraints were the need to minimise impacts on the Nurragingy Reserve and Eastern Creek to the east and on the residential and commercial areas of Rooty Hill to the west. The proposed layout avoids a crossing of Eastern Creek, locates the unloading station away from the Nurragingy Reserve and restricts the movement of locomotives west of the M7 Motorway.

The storage and loading facilities, Concrete Batching Plant and other infrastructure are located north of the riparian vegetation associated with Angus Creek with easy access to Kellogg Road. Site management would ensure the protection of areas of native vegetation and associated habitat from site activities.

Mitigation measures have been included in the design of the facility including noise walls to ameliorate impacts, enclosure of conveyors and storage facilities to minimise dust emissions and landscape planting to reduce visual impacts. These measures are discussed further in Section 6.

Various site designs were investigated including:

- Open type stockpiles with concrete division walls, fed by overhead tripper conveyor system and unloaded to truck by front end loader, and reclaim conveyor;

This system would be located north of Angus Creek. This option was not favoured due to the inflexibility of the system, and the potential environmental impacts as a result of dust emissions from such a large open space. The proposed system incorporates enclosure of conveyors, main storage systems and unloading facilities.

- A system of ground storage bins, with concrete division walls separating materials and fed by tripper conveyor. Located south of Angus Creek with a conveyor system of withdrawal feeding small truck loading bins north of creek;

This system was not favoured due to its large disturbance footprint in the native vegetation to the south of Angus Creek and also its location in the flood zone.

- A large concrete bin system, north of Angus Creek, fed by conveyor and discharging direct to truck; and

This system was not favoured due to its large visual impact and the inflexibility of its location limited the infrastructure surrounding it.

- The current concept and location utilising the approximate 2000t main storage bins was adopted as the best solution, as it addressed all environmental and operational requirements, gave the best flexibility, best traffic movement layout and was subsequently identified as the preferred option.

A number of options for the rail siding were considered including a parallel siding with multiple unloading stations. This was discounted because this system only allowed for continuous unloading, and as the trains would be carrying multiple products would need to have an indexed system of unloading.

The preferred option was to have a parallel siding and a single rail unloading system with a transfer conveyor system only, on the southern side of Angus Creek minimising the impact on both the vegetated area and flood zone.

2.9 SUITABILITY OF THE SITE FOR DEVELOPMENT

The Director General's Requirements require that the EAR be prepared in accordance with the Department's EIS Guideline: Concrete Works. Consequently the suitability of the site has been assessed in accordance with Table 1 of the Concrete Works EIS Guidelines (DUAP, 1996).

Suitability of the Site for the Development

Operational Requirements

The site provides sufficient land area for site development. There is access off Kellogg Road, which links to the regional road network including the M7 Motorway. All required services can be provided to the site.

Topographical & Meteorological Assessment

Local rainfall and prevailing winds would not cause any constraints.

Local climatic conditions in combination with topography of the site would not result in adverse micro-climatic conditions. Earthworks and use of the stockpile material would result in a topographical change with the landform being returned to a more natural contour.

Water Issues

There is adequate opportunity to manage on site processes and stormwater. There would be sufficient separation between Angus Creek and the potential sources of water contamination to minimise risk of pollution. There is no risk of groundwater pollution as a result of the proposed development.

The location and design of the proposed RDC and the extent of proposed filling on site has taken site flooding potential into account.

Flora and Fauna Issues

The proposed development would require the removal of a small area of remnant vegetation. The location of the components of the RDC has been planned to maintain core vegetative communities within the site and along Angus Creek. The EMP would include provisions for the protection and enhancement of these communities. Landscape planting of the development site would mitigate potential impacts.

Geological and Soil Issues

Geological and soil issues can be appropriately managed as part of the development.

Transport Issues

The site has existing access to Kellogg Road. Traffic studies have been undertaken to assess the potential impacts and develop mitigation measures. Access arrangements within the facility have been designed to minimise potential conflicts for users on the site.

Community Issues

The development has been designed to be compatible with the adjacent land uses. Special attention has been paid to the interface of the site with the Nurragingy Reserve. The development would not pose any health risks. The site is not highly visible from adjacent areas. Visual screening

is proposed including along the boundary of the site adjacent to the Reserve. There are no heritage sites or items on the land involved.

Cumulative Issues

Any potential cumulative issues can be managed by relevant mitigation measures.

The Public Interest

The provision of construction materials to meet the demand for residential, commercial, industrial and infrastructure developments in the Sydney region is in the public interest. The employment and income generated by the development would also provide significant community and economic benefits, to the local, regional and state communities.

The transportation of the bulk materials by rail, minimising truck numbers on major routes into Sydney is in accordance with NSW State Government policies and the public interest.