Appendix 4

Somersby Fields Economic Assessment and Proposed Contributions to the Community

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1 EXECUTIVE SUMMARY

There is a looming supply shortage of fine to medium-grained construction sand for the Sydney market, which has been well documented by both government and industry sources since about 1990. The two largest sources of this type of sand currently supplying the Sydney market are at Kurnell Peninsula (up to 1.5Mtpa) and Penrith Lakes (up to 0.6Mtpa). The production of fine sand from Penrith Lakes is expected to cease within the next 2 or 3 years. The long term security of supply of fine-grained sand from Kurnell Peninsula is uncertain, whilst it is noted that coarse sand from Penrith Lakes will continue to be produced until about 2011. As the supply of coarse sand diminishes from Penrith Lakes, greater reliance would be placed by quarry operators upon producing "manufactured sands" (ie. fine materials produced from hard rock crushing operations), however, for technical as well as economic reasons, natural fine to medium-grained sand will still need to be blended with such products in the manufacture of concrete.

The Somersby Plateau contains large quantities of fine-grained sand and is located close to the F3 Freeway about 75km from existing Sydney markets and within 25km from virtually the entire central coast market.

Somersby Fields is the closest sand deposit on the Somersby Plateau (by road) to the F3 Freeway. While all potential supply sources within 100km of Sydney have some environmental issues, those affecting the Somersby Fields Project Site have been closely studied and, as presented elsewhere in this report, can be managed to satisfy government and industry standards.

The project's main economic benefit would arise from adequate fine sand availability at a low transport cost for the 15 to 18 year project life. This benefit would be important if the Gosford LGA is to continue to grow and develop in an efficient manner.

Additionally, the project would benefit the region through its contributions to various standard Council rates and charges as well as the purchase of capital equipment (mainly road trucks and off-road mobile plant) from local suppliers. Over the life of the project, these purchases would, based on current prices for new equipment, exceed $25 million.

A noticeable economic benefit would be recognised throughout the Somersby community following the commencement of the Somersby Fields Project. Apart from the immediate boost to the community from the site establishment and construction stage (for both the wash plant as well as the development of the site for sand removal) there would be a long term permanent work force of approximately 33 people. The wages paid to these employees (15 on site and 18 drivers) could add approximately $2M per year to the local economy. Additional maintenance, consumables and fuel items could add a further $2.3M per year to the Somersby and district community.

The Somersby Fields Partnership is committed to being a positive participant in the community both economically and in other ways, including opening its operations to the Somersby Public School for environmental programs and geography / science excursions.

2 SAND DEMAND / SUPPLY TO SYDNEY AND CENTRAL COAST MARKETS

Sydney consumes about 7 million tonnes of construction sand annually, about 55% of which is fine-grained sand. The central coast sand market is about 10% of the Sydney market, ie. about 700 000 tonnes per annum. The major uses of fine-grained sand are for concrete manufacture, mortar for bricklaying, roof tile and fibre cement manufacture, plastering and concrete product production.

The price and demand for particular forms of sand are determined by use and distance from the source to the market.

Figure A4-1 shows the location of the main potential fine-grained sand resources that could supply the Sydney market over the next 20 years. It demonstrates the potential importance of Somersby fine sand to the central coast market over the same period.

Figure A4-1 lists each of these significant resources and indicates their distance from the Sydney CBD. There are a few other smaller sources of sand around Sydney but their production is quite low and their output is all consumed locally.

The Department of Primary Industries (Mineral Resources) assessed in 2001 (Whitehouse and Pienmunne) that around 10 million tonnes of sandstone was likely to be excavated over the next 15 years from a variety of road, railway and site infrastructure projects. Most would be used in mortar sand, fill material with very little being suitable for concrete manufacture due to the inconsistent quality and variability in supply. This material is therefore unlikely to make a significant long term consistent contribution to solving the supply shortages of fine sand in the Sydney market.

Government sponsored studies of current and potential sources of construction sand for Sydney have confirmed that fine sand sourced within the Sydney basin will soon be in critical short supply.

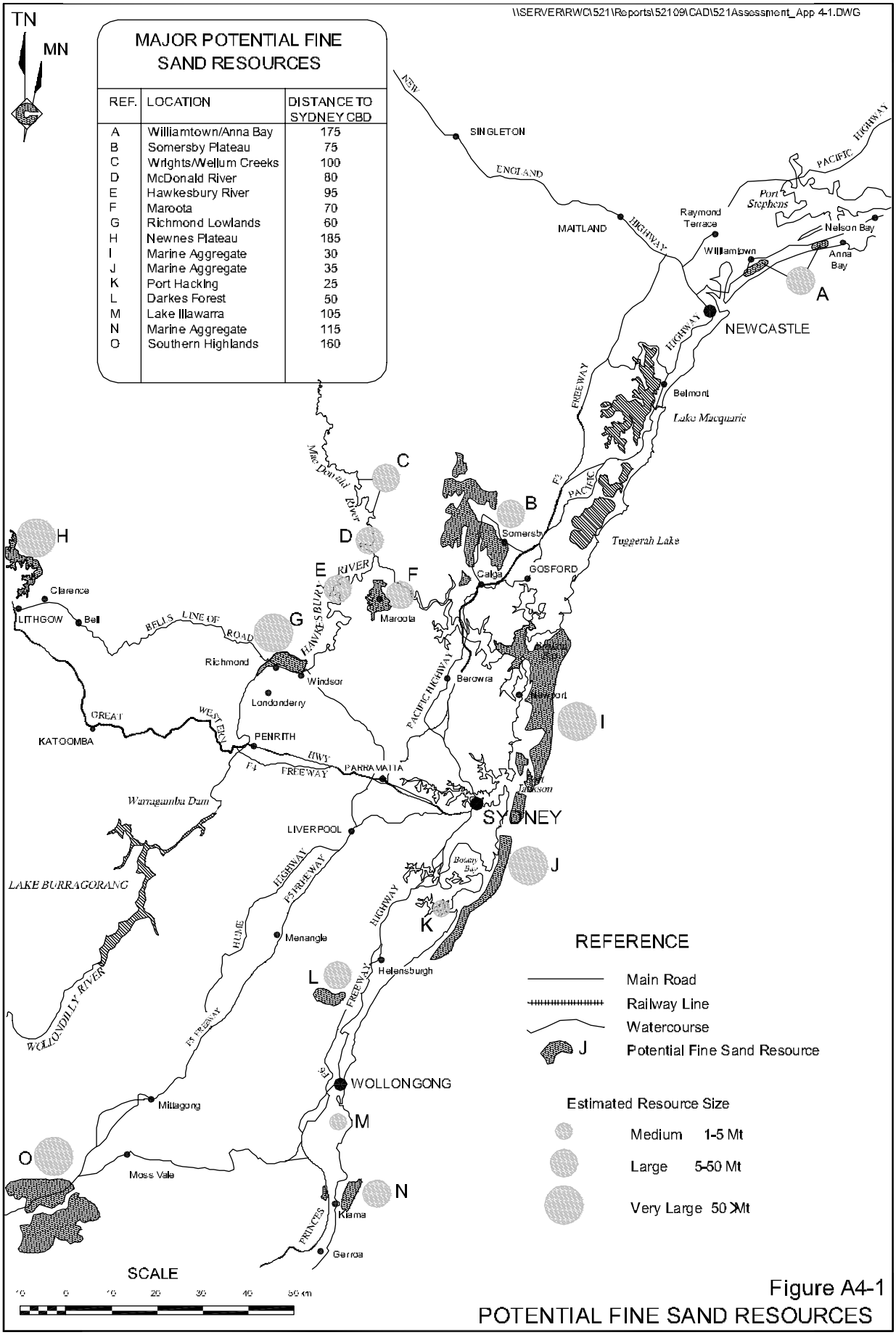

Figure A4-1
POTENTIAL FINE SAND RESOURCES

The extent of the shortfall depends on the future of the Kurnell fine sand operations and the remaining fine sand reserves at Penrith Lakes. At Kurnell, sizeable reserves exist, but with increasing environmental issues associated with sand dune extraction, the likelihood of continued government approval of extraction from the Kurnell sand dunes is in doubt. At Penrith Lakes, reserve assessments appear to confirm that coarse sand reserves will either be largely depleted or not economically obtainable from about 2011.

The 1995 study of Oakes, Lishmund and Paterson from the NSW DPI (MR) considered all potential sources of sand capable of supplying the Sydney market. It concluded, in part, that the Somersby Plateau is a major source of fine to medium grade sand to the northern Sydney region and the Central Coast. Since that report in 1995, there have been a number of developments which have resulted in some land areas no longer being available for sand supply while others have become more attractive for consideration as strategic sand sources for Sydney:

- offshore marine sand sources have been rejected by the government as a source of sand and remain uncertain due to their potential environmental impact;
- some sites, such as Richmond Lowlands, are recognised as being increasingly environmentally sensitive and quite difficult to develop as sand resources;
- technological developments in sand production have advanced allowing fine to medium-grained sand processing with increased washing efficiency thereby requiring a fraction of the water consumption of older style sand washing plants. These developments have reduced the prior sand production impacts on the site of the reserves, and
- on the Somersby Plateau, work in the late 1990s by the Department of Agriculture, in conjunction with the Department of Mineral Resources, confirmed and recommended the controlled establishment of sand extraction operations in areas of poor agricultural value.

Finally, while some fine crushed rock ("manufactured sand") is now being used to replace some coarse sand in concrete mixes, such material would still need to be blended with fine natural sand. Concrete technologists prefer the use of rounded sand grains in concrete mixes used for high rise buildings particularly where the concrete is to be pumped. The rounded sand grains provide for greater pumping efficiencies, reduce the proportion of cement in the concrete mix and increase the workability during placement.

In short, Sydney and the Central Coast both require reliable, good quality fine-grained sand for use in the construction industry. Sydney, in particular, will lose its second largest supply within three years and its major supply source is at risk.

Somersby Plateau has been identified as a major potential supply source. The Somersby Fields Project would access 7.4 million tonnes of fine to medium sand and is well located to provide low cost and reliable quality sand to these two markets. All known sand resources have to deal with environmental issues and the Somersby Fields Partnership believes it can professionally address and manage the issues at its proposed sand removal site.

3 VIABILITY OF SOMERSBY FIELDS PROJECT

As at January 2007, market surveys of the main Sydney and Central Coast markets for fine to medium-grained grades of sand show that prices have increased rapidly since 2000 although the rate of increase has slowed in the last year. Prices have increased much more quickly than inflation due mainly to the high demand in the face of supply restrictions and, to a lesser extent,major cost increases in fuel.

Currently, prices in these two markets are as follows.

	Sydney ($/per tonne)	**Central Coast ($/per tonne)**
Ex-bin Price	14-15	14-15
Transport Cost	9-10	4-5
Prices being charged	23-25	18-20

These prices reflect sales to "third parties". It is not known what "internal transfer prices" are used by vertically integrated operators.

The Somersby Fields Project would have about a $2 per tonne transport cost disadvantage into its proposed Sydney market area compared to Kurnell and Penrith Lakes. Hence, it would be expected to achieve an ex-bin price of some $12-13 per tonne for sales to the northern areas of Sydney and about $14-15 per tonne for sales to the Central Coast. A "blended" sales price of sand of about $13 per tonne ex-bin at Somersby would be expected in the current market conditions.

When Penrith Lakes withdraws from the market, further price increases for sand are highly likely. However, a current real ex-bin sand price of $13 per tonne is regarded as achievable over the longer term. This is a conservative assumption based on recent prices movements in the industry.

Production cost estimates for Somersby Fields, operating at about the mid range capacity of 300 000 tonnes per annum with a full depreciation charge on new plant and equipment indicates a cost structure on a fully absorbed basis of around $9 per tonne. The costs on a "per tonne" basis will, of course, vary depending on volume. The plant size used for the above calculation would be capable of processing the annual maximum capacity sought for the project.

The Somersby Fields Partnership is confident of being able to sell the maximum capacity being sought (450 000tpa), after the normal "ramp-up" phase involved in commissioning for two reasons.

1. The supply shortage of fine sand has a high degree of probability since it is based on known technical attributes of premixed concrete. Hence the shortfall in supply is entirely capable of being forecast as explained earlier. This is well documented by a wide range of industry and government sources.
2. The Proponent has had preliminary discussions with several, potential large customers for Somersby Fields fine sand. On the basis of these negotiations, together with some written confirmation, sales of the tonnages being sought in this application should be possible at the market prices indicated.

In short, the viability of the project is secure, even using conservative assumptions for prices, volumes and cost structure. The evidence for the ability to sell the project tonnages as well as the price levels and cost structures of the project, all give considerable support to the fact that the product is needed by the market and can be supplied profitability by the Proponent.

4 REGIONAL ECONOMIC BENEFITS

The Gosford City Statistical Region is the eight largest in NSW with 162 000 people (Most recent census in 2001). It has a strong building / construction industry with in excess of $400 million of building construction work in June 2006. However, it has somewhat higher unemployment and a lower full-time home ownership level than the State averages. The importance of the area to NSW was recognised by the appointment some years ago of a Minister for the Central Coast by the New South Wales Government.

The project's main contribution to the region would be in three ways.

1. It would ensure the building and construction industry has access to high quality fine sand supply for at least the next 15 to 18 years. With delivery costs representing around half the total price of fine sand in the Sydney market the price of fine sand on the Central Coast from Somersby Fields is likely to be, and to remain, well below comparable prices in Sydney.

   Access to the Central Coast market by Somersby Fields would be via the F3 Freeway and main highway routes. Somersby Fields would be very competitive with other fine sand supplies to the Central Coast due to its location close to the market (low transport costs) together with the use of new, efficient sand processing technology.

2. Somersby Fields Partnership is committed to purchasing capital equipment, especially road trucks, from local suppliers. During the 15 to 18 year life of the project, 45 large road transport rigs would be required at a total cost for new vehicles of around $16 million. Site establishment, infrastructure and initial plant cost would be about $6 million. Off-road mobile equipment would have a value of around $7 million over the life of the project. In short and in today's value, $25-30 million of new capital investment would be involved in the project over its life.

3. The project would contribute to Gosford City Council's rates and income as required under the various approval requirements. While these are not significant as individual items, they would nevertheless further diversify the Council's rating system and provide an opportunity for the Council to justify additional work servicing the local Somersby community.

5 LOCAL (SOMERSBY AREA) ECONOMIC BENEFITS

The major economic contribution of the Somersby Fields Project to the Somersby area would be through the creation of 33 permanent jobs, 15 for truck drivers and 18 for on-site operators. The annual wages for these employees at Somersby in the first full year would be $2.0 million. Additionally, local contractors / suppliers would be used for maintenance services, consumables and fuel and oil. In total, expenditure on these items would exceed $2.3m/year.

The most recent Australian Bureau of Statistics Census data (2001) provides information on the 584 people residing in the immediate area around Somersby Fields. **Figure A4-2** shows the boundaries of this area. This is the most detailed economic information available. The census shows the area as:

- 95% only speak English whilst 10% were born overseas;
- with 71% of people reporting both parents born in Australia, there is a clear Australian white Anglo-Saxon orientation in the community. Indeed, of the 59 residents born overseas, only 10 arrived in Australia in the last 20 years with the remainder arriving here before 1986;
- 96% live in a "separate house", with 69% living at the same address for at least the last five years; and
- 4.4% were unemployed, the median weekly family income was $800 to $999 with the median age being 38.

Of the 584 people in the collection district, exactly 200 reported they were in full-time employment. The project's 33 new full time and those indirectly employed through the provision of support services would obviously be a significant new alternative for employment in the immediate area.

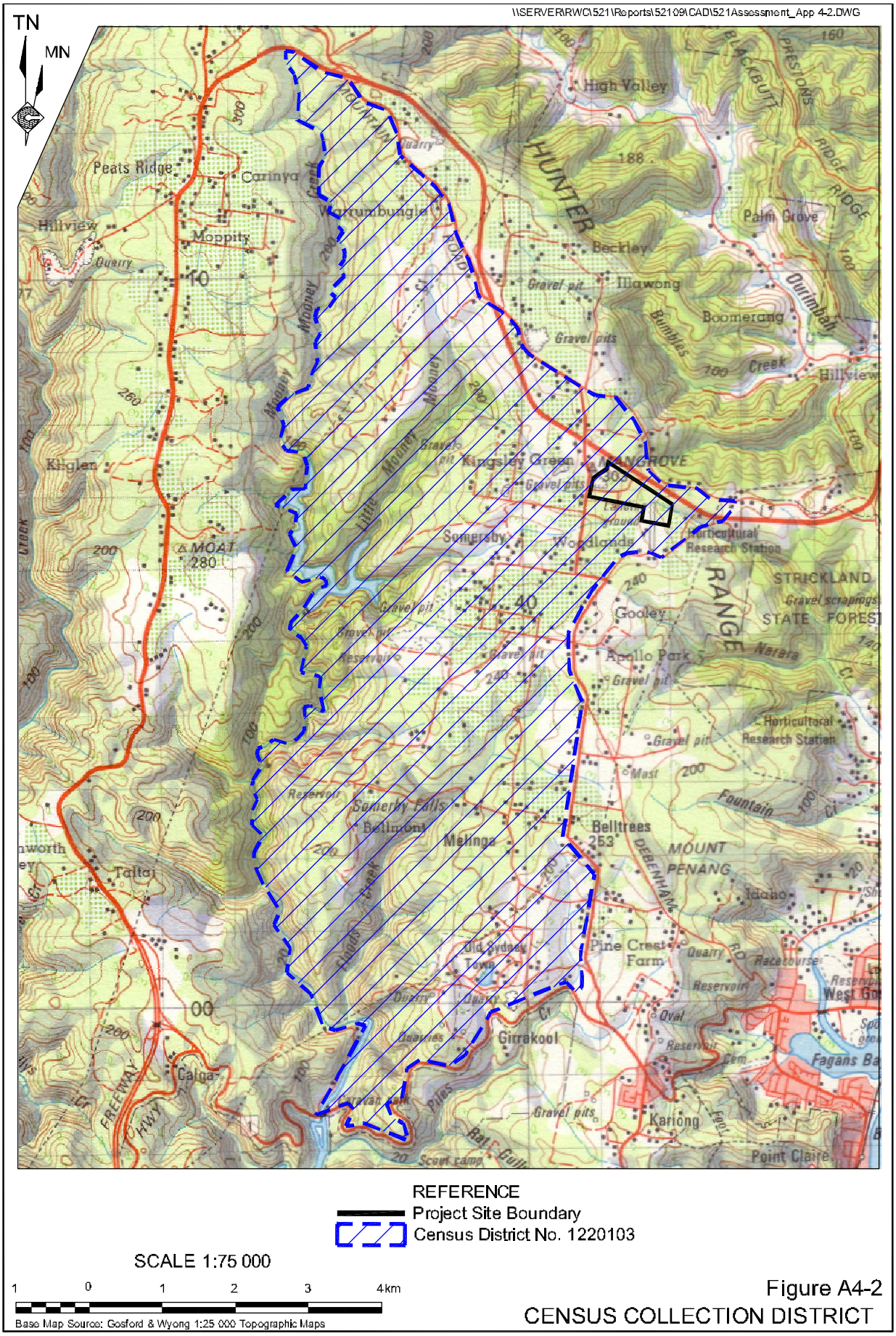

Figure A4-2
CENSUS COLLECTION DISTRICT

In addition to this raw census material, observation and knowledge of the area gives the following description of economic activity in the Somersby community.

- A 90 pupil primary school.
- A single local fast food / newspaper shop.
- A fuel and mechanical repairs garage.
- A government agricultural research station.
- Scattered small primary producing operators with poultry farming and mineral water extraction and flower / plant nurseries being the main activities.
- Two sand extraction operations (Hanson / Jones).
- Rural-residential properties most of which are not used for any significant income producing purpose.
- A small unsealed light airplane airstrip.
- A number of telecommunication / television relay towers.

Approximately 5km to the south of the Project Site towards Gosford is the Somersby Industrial Park which is a major local source of employment for a wide range of positions from unskilled factory positions to technical / highly skilled levels. This industrial park is not regarded as part of the immediate local community of the Somersby area which is dominated by the school / local shop at the intersection of Peats Ridge Road and Wisemans Ferry Road.

The stable employment of 33 people at the Somersby Fields Project Site would, together with the research station, existing Hanson and Jones sand operations and some horticultural activities, provide the majority of employment opportunities in the local community.

Given the size of the immediate economy in the Somersby area, it is not worthwhile to quantify the multiplier effect on it. However, the direct injection of over $4.0 million wages and purchases into the community each year would provide a considerable strengthening in other businesses with consequent flow-on effects.

6 COMMUNITY INVOLVEMENT

The Somersby Fields Partnership has proposed two major benefits to the community in the end use of the site. The first option involved progressive handing over to the community of the entire site for a major sporting and recreational facility and the second option involved a smaller scale “village green” which would be constructed and handed over to the local community at the start of the project.

The Proponent has been unable to gain the support of both the community and Gosford City Council in relation to these proposed end uses.

It is therefore proposed, subject to any different response from the Gosford City Council and the local community that the end use of the site be "rural-residential" for which the site is currently appropriately zoned.
The Proponent continues to work towards providing community benefits and as such wishes to assist in providing a contribution to the environmental/ ecological education experiences for pupils at the Somersby Public School. To implement such a program would require discussions with the Department of Education and Training, the Principal and others concerned. However, the Proponent believes that an educational program on its site could include field trips to the site, especially the Voluntary Conservation Area along with student participation in the monitoring and rehabilitation programs. It could also involve additional teaching support in these areas at the Somersby Public School.

As one of the major employers in the immediate area, Somersby Fields intends to become involved in as many community activities as is appropriate and would encourage its employees to do so as well.

The need for continuous consultation and communication with the community is recognised and accepted by the Proponent. This should provide a strong bridge between the project and the community and should assist to build a basis for trust and a positive working relationship in the future.

7 CONSEQUENCES OF "DO NOTHING" OPTION

The preceding sections have demonstrated that there is a current and continuing need for fine-grained sand within the construction industries of Sydney and the Central Coast, ie. in the order of 3.85Mtpa (55% of 7Mtpa – see Section 2). It has also been identified that within the next 1 to 3 years, existing sources of fine grained sand currently being supplied to Sydney markets will be exhausted and require replacement in order to maintain this supply. Therefore, not to proceed with the Somersby Fields Project would remove an important source of fine sand from the future supply to the Sydney and Central Coast markets, and ultimately impact on the cost of the fine sand, as customers are forced to obtain sources further outside the region.

It is acknowledged that there are a number of existing and proposed sand extraction operations on the Somersby Plateau which, if the Somersby Fields Project does not proceed, may be able to "make up" the 450 000tpa of sand that would be produced by the Somersby Fields Project, albeit after obtaining modifications to their approved levels of production. Each of these alternative sources would have similar and in a number of cases greater specific environmental and traffic-related impacts than that of the Somersby Fields Project. As an example, the impacts on the groundwater table of the proposed sand recovery activities on the Somersby Fields Project Site have been considered in great detail. Notably, the level of impact is predicted to be far less than that of an extension to the nearby Rindean Quarry, approved by Gosford City Council in 2006. The minor nature of the predicted impact for the Somersby Fields Project is exemplified through the modelling undertaken by RCA Australia (2006),

which predicts that when cumulative impacts are considered to the south of the Project Site, the contribution of the Somersby Fields Project is negligible (see RCA Australia, 2006 – Section 8.1.2).

The Somersby Fields Project is located in an area of the Somersby Plateau where the identified resources have been recognised through local and regional planning instruments. Importantly, it has been designed to meet best practice of the extractive industry and would implement technology, safeguards and controls which, if approved, could be used as the 'yard stick' for future sand extraction operations on the Somersby Plateau and throughout NSW. For example:

- a formal Voluntary Conservation Agreement is to be established to safeguard the local population of *Prostanthera junonis*;
- advanced filter press technology is to be used to maximise the recycling of water;
- the sand recovery area is to be developed in two stages, with Stage 2 only proceeding if all environmental criteria are satisfied during Stage 1; and
- the sand recovery area has been designed to provide for the ongoing use of the site for a combination of rural / residential and nature conservation land uses.

It is further noted that the Somersby Fields Project Site is the closest sand removal site (by road) to the F3 Freeway, a feature of considerable merit given community concerns relating to trucks on local roads.

The "do nothing" approach would therefore overlook these important attributes and the opportunity to establish a best practice sand recovery operation in favour of existing and other proposed operations which have demonstrated and / or predicted impacts greater than those that would be attributable to the Somersby Fields Project.

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