Enclosure 2:
Letter from Mr John Turton
Cement Concrete & Aggregates Australia

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Demand for and Supply of Sand in the Sydney Basin & NSW

Demand

The demand for construction materials (cement, coarse & fine aggregates & premixed concrete) is cyclical and is often a lead indicator of economic activity. In recent years Sydney & NSW has experienced two periods of high demand – in 1999/2000 & 2003/2004. Each of these peaks was followed by periods of low demand – in 2000/01 (post Olympics) & 2009/10 (post GFC).

A March 2012 report by G. Bills "The Demand for Cement & Premixed Concrete in NSW 2011/12 to 2015/16" has been updated to take account of subsequently published ABS data for the 18 month period from July 2011 to Dec 2012. – refer attached "Sydney & NSW Premixed Concrete & Sand Demand - 1999/00 to 2011/12 Actuals & 2012/13 to 2015/16 Forecast"

Note that premixed concrete production in Sydney is forecast to increase from 3,291,300 m^3 in 2009/10 to 4,535,630 m^3 over the next 5 years to 2015/16 ie. 38%
(The NSW forecast is 5,855,200 m^3 in 2009/10 to 7,786,490 m^3 over the next 5 years to 2015/16 ie. 33%)

There are several drivers for this forecast increase in demand – particularly in Sydney::

- Housing (single & multi-unit) due to pent-up demand & the release of land by the state government, eg. Central Park, Broadway
- Non-residential – several large projects have recently been announced eg Barangaroo, Sydney Convention Centre, Darling Harbour upgrade, etc.
- Engineering Construction – N-W Rail link, WestConnex motorway project, 2nd International Airport, F3 to M2 & M5 East Road corridors, F5 widening, Port Botany Road & Rail Upgrades, Northern Sydney Freight Corridor, Moorebank Intermodal Terminal, Southern Sydney Freight Line.

Note that while premixed concrete is a major user of sand (approximately 0.75 tonnes/cubic metre ie. 0.50 tonnes of coarse sand/m^3 & 0.25 tonnes of fine sand/m^3), premixed concrete accounts for only about 50% of all sand produced, with the remainder being used in industrial applications, fill material, cement mortar, rendering for brick & blockwork, concrete blocks, pavers and roof tiles, precast concrete, pipe bedding, filter material, etc.

Year	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Coarse Sand - Sydney	3,291,300	3,320,900	3,575,100	3,360,060	4,002,787	4,234,949	4,535,630
Fine Sand - Sydney	1,645,650	1,660,450	1,787,550	1,680,030	2,001,394	2,117,474	2,267,815
Total Sand - Sydney	4,936,950	4,981,350	5,362,650	5,040,090	6,004,181	6,352,423	6,803,445
Coarse Sand - NSW	5,855,200	5,953,800	6,056,700	6,458,400	6,871,738	7,270,298	7,786,490
Fine Sand - NSW	2,927,600	2,976,900	3,028,350	3,229,200	3,435,869	3,635,149	3,893,245
Total Sand - NSW	8,782,800	8,930,700	9,085,050	9,687,600	10,307,606	10,905,448	11,679,734

Total sand demand in Sydney is therefore estimated to increase from 4,936,950 tonnes in 2009/10 to 6,803,445 tonnes in 2015/16 ie. an increase of 38%.

Supply

Penrith Lakes (PLDC) has been a major source of fine and coarse sand and gravel (coarse aggregate) for the Sydney construction industry since the 1950's. Until recently, the quarry was the largest sand and gravel quarry in Australia and supplied well over 50% of the Sydney market with sand and coarse aggregate.

The two largest sand producers in the Sydney region, Penrith Lakes (the major fluvial sand producer) and Kurnell (the only marine sand producer) now have very limited remaining resources and are expected to cease operating by 2015 & 2018 respectively.

The other major sources of fine & coarse sand in the Sydney region are at Maroota, Somersby Plateau, Tinda Park and Menangle.

Other major identified, undeveloped sand resources include:

- Maroota – 77 Mt friable sandstone and high level sands.
- Somersby Plateau – 3000 Mt friable sandstone. Land use demand is high in this area and it is unlikely that a significant proportion of this resource will get development consent.
- A large resource of fluvial sand at Richmond Lowlands that is unlikely to be developed
- Marine Aggregates - the extraction of large resources of offshore marine sand is currently prohibited.

Outside the Sydney region, the Stockton Bight area has several operators with total remaining resources estimated at 15 Mt, which is predicted to be exhausted by early 2020's.

The Newnes Plateau friable sandstone has less than 60 Mt under consent and a total resource of 583 Mt. The Southern Highlands friable sandstone has less than 19 Mt under consent and more than 900 Mt total resources. The Shellharbour/Kiama area has 2.75 Mt fine to medium grained sand under consent and total resource of around 8 Mt.

Conclusion

The construction industry (which is a major user of aggregates & concrete) is a cyclical industry and total sand (coarse & fine) consumption in Sydney is forecast to increase from 4,936,950 tonnes in 2009/10 to 6,803,445 tonnes in 2015/16 ie. an increase of 38%

The two largest sand producers in the Sydney region, Penrith Lakes and Kurnell have very limited remaining resources and are expected to cease operating by 2015 & 2018 respectively.

Current sand resources in the Sydney region are insufficient to supply forecast demands in the medium to long term. Future resources will need to be sourced from currently undeveloped deposits within and, increasingly, from outside the region. Transport costs will increase and rail will be increasingly for in the transport of both fine and coarse aggregates.

The aggregate industry will change significantly in the next few years and, if supply constraints are to be avoided, both government and industry must cooperate in the identification approval, & development of sand resources in order to meet future demand.

References

- The Demand for Cement & Premixed Concrete in NSW 2011/12 to 2015/16 by G. Bills
- Production of Pre- Mixed Concrete, Australia - Source: Australian Bureau of Statistics, Manufacturing Production [data available on request].
- Where are Sydney's Construction Aggregates - IQA Technical Briefing Paper No. 4 by Helen Ray, Geos Mineral Consultants.

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Sydney & NSW Premixed Concrete & Sand Demand
1999/00 to 2011/12 Actuals & 2012/13 to 2015/16 Forecast

										Data from report by Geoff Bills (March 2012) \including ABS data			Data from report by Geoff Bills (March 2012) adjusted to take account of 2011/12 & Jul-Dec 2012 Actuals		Data from report by Geoff Bills (March 2012) adjusted for changes to 2012/13 data		
Year	Actual 1999-00	Actual 2000-01	Actual 2001-02	Actual 2002-03	Actual 2003-04	Actual 2004-05	Actual 2005-06	Actual 2006-07	Actual 2007-08	Actual 2008/09	Actual 2009/10	Actual 2010/11	Actual 2011/12	6m Actual/ 6m F/cast 2012/13	Forecast 2013/14	Forecast 2014/15	Forecast 2015/16
New Houses										657	641	667	706	761	810	857	918
New Multi-Units										925	825	973	1,059	1153	1,227	1,298	1,390
Renovations										710	678	682	739	773	822	870	931
Non-Residential										2,194	2,358	2,126	1,820	1965	2,091	2,212	2,370
Engineering Constr										1,465	1,353	1,506	1,738	1808	1,924	2,035	2,180
Total Demand										5,951	5,855	5,954	6,057	6,458	6,872	7,270	7,786
PMC Produced										5,951	5,855	5,954	6,057	6,458	6,872	7,270	7,786
% Change										-11.2%	-1.6%	1.7%	1.7%	6.6%	6.4%	5.8%	7.1%
Sydney	4,786,500	3,806,700	4,169,808	4,338,200	4,545,500	4,221,200	4,009,600	3,708,100	3,690,200	3,425,300	3,291,300	3,320,900	3,575,100	3,360,060	4,002,787	4,234,949	4,535,630
NSW	7,449,100	6,096,400	6,742,183	7,139,300	7,558,300	7,200,100	7,049,600	6,751,700	6,702,600	5,950,500	5,855,200	5,953,800	6,056,700	6,458,400	6,871,738	7,270,298	7,786,490
Syd/NSW %	64.3%	62.4%	61.8%	60.8%	60.1%	58.6%	56.9%	54.9%	55.1%	57.6%	56.2%	55.8%	59.0%	58.3%	58.3%	58.3%	58.3%
% of Sydney's 99/2000 output	100.0%	79.5%	87.1%	90.6%	95.0%	88.2%	83.8%	77.5%	77.1%	71.6%	68.8%	69.4%	74.7%	70.2%	83.6%	88.5%	94.8%
Coarse Sand - Sydney	4,786,500	3,806,700	4,169,808	4,338,200	4,545,500	4,221,200	4,009,600	3,708,100	3,690,200	3,425,300	3,291,300	3,320,900	3,575,100	3,360,060	4,002,787	4,234,949	4,535,630
Fine Sand - Sydney	2,393,250	1,903,350	2,084,904	2,169,100	2,272,750	2,110,600	2,004,800	1,854,050	1,845,100	1,712,650	1,645,650	1,660,450	1,787,550	1,680,030	2,001,394	2,117,474	2,267,815
Total Sand - Sydney	7,179,750	5,710,050	6,254,712	6,507,300	6,818,250	6,331,800	6,014,400	5,562,150	5,535,300	5,137,950	4,936,950	4,981,350	5,362,650	5,040,090	6,004,181	6,352,423	6,803,445
Coarse Sand - NSW	7,449,100	6,096,400	6,742,183	7,139,300	7,558,300	7,200,100	7,049,600	6,751,700	6,702,600	5,950,500	5,855,200	5,953,800	6,056,700	6,458,400	6,871,738	7,270,298	7,786,490
Fine Sand - NSW	3,724,550	3,048,200	3,371,092	3,569,650	3,779,150	3,600,050	3,524,800	3,375,850	3,351,300	2,975,250	2,927,600	2,976,900	3,028,350	3,229,200	3,435,869	3,635,149	3,893,245
Total Sand - NSW	11,173,650	9,144,600	10,113,275	10,708,950	11,337,450	10,800,150	10,574,400	10,127,550	10,053,900	8,925,750	8,782,800	8,930,700	9,085,050	9,687,600	10,307,606	10,905,448	11,679,734