

21st August 2006

Our Ref: C06011

**Burns Bridge
Level 9, 8-10 Loftus Street
Sydney NSW 2000**

Northmead Redevelopment Project– Economic Multipliers & Employment Generation

1. Purpose

Burns Bridge Services Pty Limited, Coca Cola Amatil's (CCA's) project manager, has commissioned Hill PDA to prepare a report to demonstrate the economic impact of the proposed development of a high bay warehouse facility at Northmead, together with the conversion of current warehouse accommodation to provide three further soft drink production lines. The report is intended to be used as a supporting document to an Environmental Assessment Report responding to the Director General's requirements.

As instructed by Garry Silk from Burns Bridge, we have quantified both employment and economic multiplier benefits generated from construction and the likely production impacts of the high bay warehouse on the national economy. In addition to the construction multiplier effect, we have been instructed by our client to undertake an assessment of the economic benefit that would come from the installation of three additional production lines.

2. Development Proposal

CCA propose to erect a high bay warehouse site at Northmead, in so doing freeing up existing warehouse space on the site, such that it can increase production by introducing three additional soft drink canning or bottling lines. CCA is therefore preparing a Project Application for the Department of Planning for the expansion of its Northmead plant in the local government area of Parramatta.

Approval is sought for the following works at Northmead:

- Demolition;
- site preparation works, including excavation and bulk earthworks;

Sydney
3rd Floor, 234 George Street
Sydney, NSW, 2000

Telephone: 02 9252 8777
Facsimile: 02 9252 6077
EMAIL: sydney@hillpda.com

Canberra
Level 1, 65 Constitution Avenue
Campbell, ACT, 2612

Telephone: 02 6230 1715
Facsimile: 02 6230 0453
EMAIL: canberra@hillpda.com

independent
property **Hill PDA**
consulting

- construction and use of a new 32 metre high and 128 metre long automated high-bay warehouse;
- adaptation of an existing warehouse to accommodate three new production lines and manufacturing services including boiler, refrigeration plant and compressor;
- building envelope for a new building to house a canteen, offices and training facilities;
- building envelope for a new gatehouse and driver amenities;
- upgrading of the on-site stormwater drainage system;
- implementation of access and traffic circulation improvements, including parking and new entrances; and
- site landscaping.

Consent will be sought at a later date for the following auxiliary works in relation to the second and third production lines. These works, while costing approximately \$30 million, are therefore not part of this letter/report:

- expansion/replacement of the water treatment plant;
- expansion/replacement of the waste treatment plant;
- construction of a new syrup room; and
- construction of new raw materials storage.

We have been advised that the total cost of the warehouse is estimated at around \$90 million including the cost of the cranes, creating 15 full time high grade jobs.

Each new manufacturing line will cost around \$20 million in 2006 dollars and employ 30 people each. Therefore, total investment in the three lines is \$60 million.

The wholesale value of output for each of the three proposed production lines in 2006 dollars is \$141 million per line as at 2015.

3. Economic Multipliers

Multipliers refer to the level of additional economic activity generated by a source industry.

Input-output multipliers are summary measures used for predicting the total impact on all industries in an economy of changes in the demand for the output of any one industry. They describe average effects, not marginal effects, and thus do not take account of economies of scale, unused capacity or technological change.

The construction industry is a significant component of the economy accounting for 5.3% of GDP as at December 2005. The industry has strong linkages with other sectors, so its impacts on the economy go further than the direct contribution of construction.

The three types of categories used in the calculation of multiplier effects are:

- Initial effects:
 - The initial requirement for an extra dollar's worth of output of a given industry.
- Production induced: which is made up of:

- first round effect: which is all outputs and employment required to produce the inputs for construction; and
- an industrial support effect which is the induced extra output and employment from all industries to support the production of the first round effect; and

- Consumption induced: which relates to the demand for additional goods and services due to increased spending by the wage and salary earners across all industries arising from employment

It should be noted that all estimates on economic benefits and employment generation is based on current dollars and no escalation has been included. The source of the multipliers adopted in this report is ABS and Australian National Accounts: Input-Output Tables 1996-97 (ABS Catalogue 5209.0 & 5246.0). These tables identify first round effects, industrial support effects and consumption induced multiplier effects for employment (full time equivalent) multipliers and output multipliers, indirect allocation of competing imports.

Note that the multiplier effects are nation wide, and not necessarily local. The ABS notes that “care is needed in interpreting multiplier effects; their theoretical basis produces estimates which somewhat overstate the actual impacts in terms of output and employment. Nevertheless, the estimates illustrate the high flow-on effects of construction and manufacturing industry to the rest of the economy.

A large proportion of the construction will necessarily boost the economy of Western Sydney. Much of the materials (except for the imported crane and racking) such as concrete etc. will be sourced locally and the construction will predominately employ local labour.

4. Methodology

We have divided the economic impact into two separate components, the impact on the economy from the output generated through the construction, capital investment and operation of the production facility. Secondly, we considered the impacts on employment through the construction and operation of the proposal.

We are advised by Burns Bridge that the works for which consent is currently being sought total approximately \$150 million comprising of \$90 million for the high bay warehouse and \$60 million for three additional production lines.

From the total capital cost of \$150 million we have extracted those elements that we do not believe will have any impact on the NSW economy – elements such as the cranes and racking for the warehouse that will be manufactured in Europe and elements of the production plant that will be manufactured interstate and overseas – to arrive at net construction figures of \$62M including \$17M for installation of machinery. Using these figures we then applied ABS sourced multipliers that are detailed further in the following sections of the report.

From the \$60 million for the three additional production lines we have extracted 50% as an estimate of overseas components giving a net \$30 million, all of which could be expected to benefit the economy of NSW and in particular Western Sydney.

In terms of the ongoing operation of the plant we note that CCA source a majority of its materials for its Northmead operation from Western Sydney businesses such as aluminium cans from Warwick Farm, cardboard cartons from Revesby, PET bottles from Kings Park and sugar from Granville.

5. Output Multipliers

This section quantifies output generated by construction and operation of the Northmead production facility. The output multiplier for an industry, say Construction, is defined as the total value of production by all industries of the economy required to satisfy one extra dollar's worth of final demand for that industry's output.

5.1 Construction Multiplier

The total cost of construction for the development of Northmead bulk warehouse facility, is estimated to be approximately \$62 million. This amount is apportioned by allowing \$45 million for the construction of the high bay warehouse, and a further \$17 million for the installation of the cranes and racking.

Table 1 - Economic Multipliers from Construction

	Initial Effects	Production Induced Effects		Consumption Induced Effects	Total
		First Round Effects	Industrial Support Effects		
Output multipliers	1	0.466	0.438	0.962	2.866
Output (\$million)	\$62	\$29	\$27	\$60	\$178

Data Sources: Australian National Accounts: Input-Output Tables 1996-97 (5209.0), Price Index of the Output of the Building Industry - Producer Price Indexes (6427.0), CPI All Groups - RBA Bulletin (Table G2)

Therefore the \$62m cost in construction translates to a further \$56m activity in production induced effects and \$60m in consumption induced effects. Total economic activity generated is equivalent to \$178m.

5.2 Wholesale Value Output Multiplier

We are advised by Burns Bridge that each of the three proposed production lines, in 2006 dollars, is likely to produce \$141 million per line as at 2015 or a total of \$423m for three production lines. We have applied the soft drinks, cordials and syrups output multiplier to the total amount of forecast production from each line of \$423m.

Table 2 - Economic Multipliers from Wholesale Value Output

	Initial Effects	Production Induced Effects		Consumption Induced Effects	Total
		First Round Effects	Industrial Support Effects		
Output multipliers	1	0.764	0.97	1.572	4.306
Output (\$million)	\$423	\$323	\$410	\$665	\$1,821

Data Sources: Australian National Accounts: Input-Output Tables 1996-97 (5246.0),

The forecast \$423m of total wholesale value output derived from the three additional production lines, produced at the plant translates to a further \$733m activity in production induced effects and \$665m in consumption induced effects. Total economic activity generated is equivalent to \$1.821 billion dollars by 2015.

5.3 Capital Investment Multiplier

It is envisaged that each new production line would cost around \$20 million in 2006 dollars and employ 30 each. However, because approximately half of the cost is likely to be incurred abroad we have adjusted the total net capital investment to \$30 million. We have therefore applied the other machinery and equipment output multiplier to the total amount of capital investment of \$30 million.

Table 3 – Economic Multipliers from Capital Investment

	Initial Effects	Production Induced Effects First Round Effects	Industrial Support Effects	Consumption Induced Effects	Total
Output multipliers	1	0.587	0.821	1.902	4.31
Output (\$million)	\$30	\$18	\$25	\$57	\$129

Data Sources: Australian National Accounts: Input-Output Tables 1996-97 (5246.0),

The \$30m of net capital investment in plant and machinery for the production plant translates to a further \$43m activity in production induced effects and \$57m in consumption induced effects. Total economic activity generated from the assembly of three production lines is equivalent to \$129m.

6. Employment Generation

This section quantifies employment generated by construction and operation of the Northmead production facility.

The employment multiplier relate to an extra \$1million of output. For example, for an extra \$1 million of output from the soft drinks, cordials and syrups industry, initially an extra 2 persons are employed by that industry. Or one extra worker is employed by the soft drinks, cordials and syrups industry for an extra \$500,000 (i.e \$1,000,000/2) of output from that industry.

For the construction multiplier it is estimated that one full time construction position for 12 months is created for every \$159,468 of construction work undertaken.

6.1 Construction Multiplier Impacts

The 1996-97 ANA Input-Output Tables identified employment multipliers for first round, industrial support and consumption induced effect of 0.33, 0.45 and 2.33 respectively for every job year in direct construction. We adjusted these multipliers to March 2005 using the building price index and these are provided in the following table.

Table 4 - Construction Multiplier Effect

	Initial Effects	Production Induced Effects First Round Effects	Industrial Support Effects	Consumption Induced Effects	Total
Employment No. per \$million adjusted to Mar-05 dollars	6.27	2.07	2.82	14.61	25.77
Total employee years created	389	128	175	906	1,598

Data Sources: Australian National Accounts: Input-Output Tables 1996-97 (5209.0), Price Index of the Output of the Building Industry - Producer Price Indexes (6427.0), CPI All Groups - RBA Bulletin (Table G2)

Based on an estimated construction cost of \$62m the development proposal will therefore directly generate a total of 1,598 jobs.

6.2 Employment multipliers

The employment multipliers relate to an extra \$1 million of output. The employment coefficients are calculated by dividing the number of employed persons in a given industry by the level of production generated by that industry. The employment (full time equivalent) multiplier for the soft drinks, cordials and syrups industry was adopted in table 5 to demonstrate that total number of jobs created through the employment of 90 persons in the production facility.

Table 5: Employment Multiplier

	Initial Effects	Production Induced Effects		Consumption Induced Effects	Total
		First Round Effects	Industrial Support Effects		
No. per \$m output	2	5	5	10	22
Employment FTE	90	225	225	450	990

Data Sources: Australian National Accounts: Input-Output Tables 1996-97 (5246.0),

Therefore, total long term employment of 90 full time equivalent employees would result in 450 additional jobs in production induced effects and a further 450 in consumption induced effects, totalling 990 jobs through production and consumption induced effects.

7. Summary

In summary the construction of an industrial warehouse on the subject site over 18 months will generate the following benefits:

- \$178 million worth of economic impacts directly in construction and through multiplier impacts from the building of the high bay warehouse;
- \$1.821 billion of economic impacts by 2015 directly through the wholesale output and through multiplier impacts;
- \$129 million worth of economic impacts directly through capital investment into three production lines and through multiplier impacts.
- 1,598 jobs directly in construction and through production and consumption induced effects;
- 990 ongoing jobs through operation of the production facility and through production and consumption induced effects;

Yours sincerely,



Adrian Hack
BTP (Hons), MLE, MPIA
Principal
Hill PDA



Chris Stening
Property Consultant
Hill PDA

Definitions

Multipliers: is additional activity (measured in dollars) and employment (jobs) in other industries resulting from increased production in a particular type of industry.

Initial Effects: The initial requirement for an extra dollar's worth of output of a given industry.

Production Induced Multiplier: refers to all the outputs and employment required by other industries to produce the inputs for the subject industry

Consumption induced Multiplier: which relates to the demand for additional goods and services due to increased spending by the wage and salary earners across all industries arising from employment

Job Year: refers to one full time job over one year