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APPENDIX A: SUPPLEMENTAL ECONOMIC BENEFITS

Urbis was engaged by Meriton Group to assess the potential supplemental economic benefits associated with the proposed Little Bay development, including impacts on the supply and price of housing in the Sydney Basin, avoided or reduced public infrastructure spending, and enhanced public amenity. The following document outlines the key results of this assessment, as well as the underlying methodology and assumptions used in the analysis.

HOUSING AFFORDABILITY

The Little Bay development is expected to have a positive impact on housing affordability in the area by increasing the supply of residential housing and putting downward pressure on housing prices.

Assessing the quantum of this impact requires an estimate of the elasticity of demand in the Sydney Basin. Elasticity of demand is the percentage change in demand for housing that occurs in response to a percentage increase in supply of housing. The change in demand for housing in response to additional housing being available in a region is reflected in a change in housing prices in that region.

Estimates of the elasticity of demand have been derived at a national level in previous studies conducted by Saunders and Tulip (2019) and Abelson, Joyeux, Milunovich and Chung (2005). These estimates use national level data on housing supply and prices.

Estimates of the long run impact of the Little Bay development on housing affordability were derived from the best practice model of the Australian Housing Market elasticity of demand developed by the Reserve Bank of Australia (RBA) (Saunders and Tulip, 2019). This model indicates that a 1.00% rise in housing approvals leads to a long run 2.06% fall in house prices. This estimate is calculated as the ratio of the long-term change in real housing prices from a 10% increase in total building approvals (-0.33%) to the long-term increase in dwelling stock resulting from a 10% increase in total building approvals (0.16%).

In order to estimate the proportional impact of the Little Bay development on housing stock in the Sydney Basin, the expected number of new dwellings was compared to the number of existing dwellings in Sydney Basin. The Sydney Basin has been defined as including the following local government areas (LGAs):

- Bayside (amalgamation of Rockdale and Botany Bay)
- Inner West
- Lane Cove
- Mosman
- North Sydney
- Northern Beaches
- Randwick
- Sydney
- Waverley
- Woollahra

The number of dwellings in the Sydney Basin was estimated using 2016 Census data available from the Australian Bureau of Statistics (ABS) on the total number of private dwellings across the included LGAs (ABS, 2016). In 2016 there were 535,173 private dwellings in the Sydney Basin.

Quarterly dwelling completions data was used to account for additions to the housing stock in the relevant LGAs between the third quarter of 2016 and the third quarter of 2019 (New South Wales Department of Planning and Environment, 2020). Over this period 61,832 dwellings were completed in the Sydney Basin.

As such, the total dwelling stock in the Sydney Basin is currently calculated to be 597,005 - the cumulative sum of the Census figures in 2016 and the number of completions to the third quarter of 2019. The Little Bay development is expected to add 1,909 dwellings to the existing stock of 597,005 in the Sydney Basin, representing a 0.32% increase.

Assumptions

Our estimate of the impact is underpinned by the following assumptions:

- No other unexpected shocks move the long-term trajectory of house prices in the Sydney Basin.
- Estimates obtained at a national level are applicable on a local/city level.

Result

Multiplying the percentage change in supply of 0.32% by an elasticity of demand of 2.06 results in an effective impact of a 0.66% reduction in house prices. Therefore, approving the Little Bay development is projected to lead to housing prices being **0.66% lower in the Sydney Basin** in the long-term than they otherwise would be if the development did not proceed**.**

Sensitivity analysis

The housing price impact is highly dependent on the RBA's estimate of elasticity of demand from Saunders and Tulip (2019). In the international literature there is variation in the estimates for elasticity of demand. These studies include research conducted by:

- Abelson et al. (2005) study conducted in 2005 using Australian data
- An Oxford Economics (2016) study for the United Kingdom
- A study by Giroud, Kennedy, van den Noord and André (2006) for the OECD, and
- A study using data from the United States by Albouy, Ehrlich and Liu (2016).

The variation in estimates is significant enough that it is appropriate to consider using the highest and lowest estimates of elasticity of demand from these studies to assess the sensitivity of the house price response to changes in supply. The results of this sensitivity analysis are outlined in Table 1 below.

Table 1: Housing affordability impacts sensitivity analysis

	Development situation	**Action**	**Estimated impact**
Lower Bound	Demand is relatively less elastic in the Sydney Basin than elsewhere in Australia	Use the elasticity of demand of -1.8 estimated by Oxford Economics (2006) as a lower bound	**0.58% lower housing prices**
Upper Bound	Demand is relatively more elastic in the Sydney Basin than the rest of Australia	Use the elasticity of demand of -3.5 estimated by Abelson et al. (2005) as an upper bound	**1.12% lower housing prices**

Acknowledgment of Limitations

It should be acknowledged that house prices are impacted be a multitude of factors separate to housing supply such as household incomes, access to and cost of finance, population levels and consumer preferences. The impact on housing prices estimated through elasticity of demand is intended to estimate the impact of housing supply, holding all other factors constant. Therefore, interpretation of the estimate is limited to the relative impact of the development in comparison to the base case in which the development does not proceed and all other factors impacting housing prices are held constant.

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AVOIDED INFRASTRUCTURE COSTS

The site on which the Little Bay development is located is currently well connected to existing infrastructure and is projected to require substantially less public investment than an equivalent greenfield development. A review of the Australian and Overseas Literature by SGS Economics (2016) found that infrastructure provision to greenfield lots costs approximately 2-4 times more than urban redevelopment. The exact multiplier figure depends on the capacity of existing infrastructure to support additional people.

Most estimates of the avoided cost of brownfield development compared to greenfield development in Australia are based on the work of Trubka, Newman and Bilsborough (2010). Trubka et al. (2010) provide estimates of the upfront public investment costs required for the development of a new lot across a variety of investment classes including roads, electricity and police services using a review of 22 studies across Australia, the United States and Canada. Trubka et al. (2010) also provide these initial capital costs broken down by inner city and urban fringe. For the purposes of the current analysis, inner city capital costs have been treated as equivalent to a brownfield development and urban fringe has been treated as equivalent to a greenfield development setting. The analysis provided by Trubka et al. (2010) implies that greenfield development costs are 2.6 times that of urban redevelopment.

Cost estimates for both brownfield and greenfield developments from Trubka et al. (2010) have been adjusted for inflation from 2007 to 2019 figures using the Consumer Price Index for Sydney (ABS, 2019) and are summarised in the Table 2. Avoided government infrastructure cost is calculated as the difference between the necessary investment for a greenfield lot and a brownfield lot, demonstrating the financial benefit in developing a housing lot on a brownfield over a greenfield site.

Table 2: Upfront development costs per lot

Investment Class	Necessary Brownfield Investment	Necessary Greenfield Investment	Avoided Government Infrastructure Cost
Roads	$6,693	$39,974	$33,281
Water and Sewerage	$19,406	$29,445	$10,040
Telecommunications	$3,390	$4,884	$1,494
Electricity	$5,371	$12,759	$7,388
Gas	$0	$4,857	$4,857
Fire and Ambulance	$0	$398	$398
Police	$0	$511	$511
Education	$5,126	$43,617	$38,491
Health	$26,468	$42,564	$16,096
Total	**$66,454**	**$179,010**	**$112,556**

Source: Urbis calculations

In order to calculate the avoided infrastructure costs for the Little Bay development the avoided cost estimates in Table 2 were multiplied by the number of lots in the Little Bay development.

Assumptions

Our estimate of the impact is calculated on the assumption that Little Bay fits the 'Urban Redevelopment' classification outlined in Trubka et al. (2010). As described in their study, examples of inner city/core LGAs where values are applicable to the classification of Urban Redevelopment include South Sydney, Sydney CBD and Leichhardt. Examples of LGAs which should be defined as fringe (greenfield) developments include the Blue Mountains, Penrith, Camden and Gosford.

This is a reasonable assumption as the key characteristics of the Little Bay development site, and the Randwick LGA in which it is situated, such as transit accessibility and urban density are similar to the LGAs used as examples of inner city/core LGAs.

Result

Multiplying the average avoided cost of $112,556 by the 1,909 lots in the Little Bay development site produces an **overall infrastructure cost saving of $214,868,601** in avoided upfront costs in public infrastructure investment compared to a greenfield development of a similar size.

Sensitivity analysis

A plausible range for the extent to which infrastructure costs may be avoided was identified in the review of the Australian and Overseas Literature by SGS Economics (2016). Sensitivity analysis of the avoided infrastructure costs was undertaken using upper and lower bound estimates taken from this review.

Table 3: Sensitivity analysis of avoided infrastructure cost estimates

	Development situation	Action	Value
Lower Bound	The level of existing infrastructure in the Little Bay area is **lower** than the typical urban redevelopment. It is therefore relatively **less capable** of handling the increased number of lots.	Apply a lower bound 'greenfield to brownfield avoided cost' multiplier of 2 from SGS Economics (2016).	**$126,860,659** in avoided costs
Higher Bound	The level of existing infrastructure in the Little Bay area is **greater** than the typical urban redevelopment. It is therefore relatively **more capable** of handling the increased number of lots.	Apply an upper bound 'greenfield to brownfield avoided cost' multiplier of 4 from SGS Economics (2016).	**$380,581,978** in avoided costs

Source: Urbis calculations

IMPROVED PUBLIC AMENITY

The Little Bay development is expected to increase public amenity by providing over 3 hectares or 35,670 square metres (sqm) of publicly available open space on the coast, which is currently restricted to private access. This open space is proposed to be of similar characteristics and quality to surrounding recreational areas.

Provision of open space is outlined in the Randwick City Plan (2017) as a goal of Randwick City Council. The provision of open space in the Little Bay development creates an avoided cost to Council, who would otherwise be responsible for providing a similar amount of open space to residents in the local area.

In order to estimate the cost to Council of providing an equivalent amount of recreational area to Little Bay residents, New South Wales Valuer General (2019) data on the size and value of recreational areas in the Randwick LGA was used to estimate the per sqm value of recreational land. Available data was obtained on recreational area lots classified as public or private recreation zones by the Valuer General (RE1 and RE2) in the bordering suburbs of Matraville, La Perouse, Little Bay, Malabar, Phillips Bay and Chifley. Analysis of this data produced an average land value estimate of $203.73 per sqm.

Assumptions

Our estimate of the impact is underpinned by the following assumptions:

- The development creates public open space which remains publicly accessible for the long-term i.e. the open space can be regarded as a 'permanent' increase
- The value provided by the land is compared to a base case or status quo, in which no publicly accessible open space is currently provided on the site.

Results

The average land value of $203.73 per sqm was multiplied by the 35,670 sqm of open space provided by the Little Bay development to estimate cost savings to government. Approving the Little Bay development is projected to lead to an additional **$7,266,941 in public amenity and open space**, representing an effective cost saving to government.

Sensitivity analysis

In order to account for variability in the value associated with the provision of open space, a sensitivity analysis was conducted using upper and lower bound assumptions for the sqm value of recreational area. As outlined in Table 4, the upper and lower bounds for the land value have been set at a 50% reduction and a 50% increase in value respectively.

Table 4: Sensitivity analysis for the value of public amenity

	Development Situation	**Action**	**Value**
Lower Bound	Recreational area in Little Bay is harder to access or not as attractive as existing open space in the area and is of lower than average value.	Value of recreational area is worth 50% less per sqm i.e. $101.86	**$3,633,471** in public amenity and open space
Upper Bound	Recreational area in Little Bay provides amenity not otherwise provided in the local area and is of higher than average value.	Value of recreational area is worth 50% more per sqm i.e. $305.59	**$10,900,412** in public amenity and open space

Source: Urbis calculations

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