NDIA SDA Pricing Review 2022-23

Technical Report - Geographic Variation in Construction Costs

Reliance Restricted

29 March 2023 | Final Report

Building a better working world

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Ernst & Young (“EY”) was engaged on the instructions of National Disability Insurance Agency (“NDIA”) to assist in undertaking technical research and analysis to support the Specialist Disability Accommodation (“SDA”) Pricing Review (“Project"), in accordance with the contract dated 26 September 2022.

The results of Ernst & Young’s work, including the assumptions and qualifications made in preparing the report, are set out in Ernst & Young's report dated 29 March 2023 ("Report"). The Report should be read in its entirety including this notice, the applicable scope of the work and any limitations. A reference to the Report includes any part of the Report. No further work has been undertaken by Ernst & Young since the date of the Report to update it.

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We highlight that our analysis and Report do not constitute investment advice or a recommendation to you on a future course of action. We provide no assurance that the scenarios we have modelled will be accepted by any relevant authority or third party.

Our conclusions are based, in part, on the assumptions stated and on information from both publicly available information and other sources used during the course of the engagement. The modelled outcomes are contingent on the collection of assumptions as agreed with NDIA and no consideration of other market events, announcements or other changing circumstances are reflected in this Report. Neither Ernst & Young nor any member or employee thereof undertakes responsibility in any way whatsoever to any person in respect of errors in this Report arising from incorrect information provided by the NDIA or other information sources used.

The analysis and Report do not constitute a recommendation on a future course of action.

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1 Executive Summary

Purpose and Findings

Purpose

Ernst & Young ("EY") has been engaged by the National Disability Insurance Agency ("NDIA") to assist in undertaking technical research and analysis to support the Specialist Disability Accommodation ("SDA") Pricing Review. This report will examine geographic variation in construction costs as a key input to assist the NDIA in developing new SDA benchmark prices. Further information on the SDA Pricing Review can be found on the NDIS website (NDIS website).

Location Factor Index Findings

Construction costs vary across geographic locations due to the difference in labour rates, materials prices, building activity, transport costs and other factors.

- The historic SDA Pricing Model "historic model" allows for a location multiplier based on State and Territory and level of remoteness sourced from Rawlinson's Australian Construction Handbook.
- We have considered the 2022 Rawlinson's Australian Construction Handbook as well as the Quantity Surveyor (QS), MBMpl Pty Ltd's ("MBM"), cost database (informed by actual build costs from both Government and private sector projects nationally) to assess a reasonable location multiplier.
- The Quantity Surveyor's geographic indices have been adopted over Rawlinson's due to the following reasons:
    2. The database provides information on geographic variation in costs at a more granular level, allowing the index to be produced at a Statistical Area 4 level ("SA4"). Having the index at an SA4 level allows for increased accuracy of geographic construction costs by lessening the impact of averages and outliers within the data, two examples of this have been provided within the historic Index Comparison on pages 25 and 26. Further, the use of SA4 regions aligns to the historic Model's land value measure and other NDIA published SDA data.
    3. The database is based on actual build cost data that is more recent than the latest avalible Rawlinson's data
    4. When compared to the Rawlinson's Regional Index they do not appear unreasonable.
- No additional multiplier has been provided for Build Types or Design Categories as although SDA developments have speciality requirements the main cost differentials are not proportionality more expensive across regions. Additionally, the location multipliers are applied to the Benchmark Construction Cost which have higher costs for speciality SDA requirements and this will be reflected in the geographic price increase.

Cyclone Allowance Findings

- The historic Cyclone Allowance of 15% applied in the historic model falls within our research range, therefore it is reasonable for the Cyclone Allowance to remain unchanged at 15%.
- The historic Model applies the Cyclone Allowance to the entire SA4 region, when some SA4 regions are only impacted by additional cyclone related construction costs within 50km of the coastline. The NDIA could consider an alternative approach rather than automatically applying the Cyclone Allowance to the whole SA4 region.

Geographic Variation Results

Table 1 provides a summary of the geographic variation in construction cost indices which we recommend is utilised in the SDA Pricing Review by the NDIA. As the current SDA Pricing Model by NDIA continues to apply the Cyclone Allowance to the entire SA4 area, we have provided both the standard Geographic Variation in Construction Cost Index, and an Index including Cyclone Allowance where applicable.

Table 1: Geographic Variation in Construction Cost Index

SA4	Classification	Index	Index including Cyclone Allowance where applicable
New South Wales			
Capital Region	Outer Regional	1.09	1.09
Central Coast	Inner Regional	1.07	1.07
Central West	Outer Regional	1.18	1.18
Coffs Harbour - Grafton	Outer Regional	1.11	1.11
Far West and Orana	Remote	1.32	1.32
Hunter Valley exc Newcastle	Outer Regional	1.05	1.05
Illawarra	Outer Regional	1.05	1.05
Mid North Coast	Outer Regional	1.08	1.08
Murray	Outer Regional	1.04	1.04
New England and North West	Outer Regional	1.07	1.07
Newcastle and Lake Macquarie	Outer Regional	1.04	1.04
Richmond - Tweed	Outer Regional	1.12	1.12
Riverina	Outer Regional	1.09	1.09
Southern Highlands and Shoalhaven	Outer Regional	1.08	1.08
Sydney - Baulkham Hills and Hawkesbury	Inner Regional	1.05	1.05
Sydney - Blacktown	Major City	1.00	1.00
Sydney - City and Inner South	Major City	1.00	1.00
Sydney - Eastern Suburbs	Major City	1.00	1.00
Sydney - Inner South West	Major City	1.00	1.00
Sydney - Inner West	Major City	1.00	1.00
Sydney - North Sydney and Hornsby	Inner Regional	1.01	1.01
Sydney - Northern Beaches	Major City	1.01	1.01

Source: MBM Cost Estimate Report, 2023, EY analysis

SA4	Classification	Index	Index including Cyclone Allowance where applicable
Sydney - Outer South West	Inner Regional	1.02	1.02
Sydney - Outer West and Blue Mountains	Inner Regional	1.06	1.06
Sydney - Parramatta	Major City	1.00	1.00
Sydney - Ryde	Major City	1.00	1.00
Sydney - South West	Major City	1.00	1.00
Sydney - Sutherland	Major City	1.00	1.00
Victoria			
Ballarat	Outer Regional	0.98	0.98
Bendigo	Outer Regional	0.98	0.98
Geelong	Inner Regional	0.98	0.98
Hume	Outer Regional	1.02	1.02
Latrobe - Gippsland	Inner Regional	0.99	0.99
Melbourne - Inner	Major City	0.98	0.98
Melbourne - Inner East	Major City	0.98	0.98
Melbourne - Inner South	Major City	0.98	0.98
Melbourne - North East	Major City	0.98	0.98
Melbourne - North West	Inner Regional	0.98	0.98
Melbourne - Outer East	Major City	0.98	0.98
Melbourne - South East	Inner Regional	0.98	0.98
Melbourne - West	Major City	0.98	0.98
Mornington Peninsula	Major City	0.98	0.98
North West	Outer Regional	1.04	1.04
Shepparton	Outer Regional	0.99	0.99
Warrnambool and South West	Outer Regional	1.01	1.01
Northern Territory			
Darwin	Major City	1.29	1.48
Northern Territory - Outback	Remote	1.87	2.15

Source: MBM Cost Estimate Report, 2023, EY analysis

SA4	Classification	Index	Index including Cyclone Allowance where applicable
Western Australia			
Bunbury	Outer Regional	1.33	1.33
Mandurah	Inner Regional	1.07	1.07
Perth - Inner	Major City	1.07	1.07
Perth - North East	Major City	1.07	1.07
Perth - North West	Major City	1.07	1.07
Perth - South East	Inner Regional	1.27	1.27
Perth - South West	Major City	1.14	1.14
Western Australia – Outback (North and South)	Remote	1.65	1.87
Western Australia - Wheat Belt	Outer Regional	1.26	1.26
Australian Capital Territory			
Australian Capital Territory	Major City	1.00	1.00
Tasmania			
Hobart	Major City	1.04	1.04
Launceston and North East	Outer Regional	1.1	1.1
South East	Outer Regional	1.2	1.2
West and North West	Outer Regional	1.18	1.18

Source: MBM Cost Estimate Report, 2023, EY analysis

SA4	Classification	Index	Index including Cyclone Allowance where applicable
Queensland			
Brisbane - East	Major City	0.97	0.97
Brisbane - North	Major City	0.97	0.97
Brisbane - South	Major City	0.97	0.97
Brisbane - West	Major City	0.97	0.97
Brisbane Inner City	Major City	0.97	0.97
Cairns	Outer Regional	1.05	1.21
Central Queensland	Outer Regional	1.15	1.32
Darling Downs - Maranoa	Outer Regional	1.07	1.07
Gold Coast	Inner Regional	0.97	0.97
Ipswich	Inner Regional	0.97	0.97
Logan - Beaudesert	Inner Regional	1.12	1.12
Mackay - Isaac – Whitsunday	Outer Regional	1.12	1.29
Moreton Bay - North	Inner Regional	1.01	1.01
Moreton Bay - South	Inner Regional	0.99	0.99
Outback	Remote	1.65	1.90
Sunshine Coast	Inner Regional	0.98	0.98
Toowoomba	Outer Regional	0.99	0.99
Townsville	Outer Regional	1.09	1.25
Wide Bay	Outer Regional	1.03	1.03
South Australia			
Adelaide - Central and Hills	Major City	1.02	1.02
Adelaide - North	Inner Regional	1.16	1.16
Adelaide - South	Major City	1.08	1.08
Adelaide - West	Major City	1.12	1.12
Barossa - Yorke - Mid North	Inner Regional	1.31	1.31
Outback	Remote	1.54	1.54
South East	Inner Regional	1.17	1.17

Source: MBM Cost Estimate Report, 2023, EY analysis

2 Introduction

11 Background and Purpose

Background, Scope and Limitations

Background

EY has been engaged by the NDIA to assist in undertaking technical research and analysis to support the SDA Pricing Review. This report will examine construction costs as a key input to assist the NDIA in developing new SDA benchmark prices.

The geographic variation in construction costs form a key assumption within the SDA Pricing Model by NDIA in determining funding for new build SDA properties built outside of the benchmark region. The assumption incorporates an allowance within the model to factor in the expected discount or premium that an SDA owner/investor would be reasonably required to pay when developing SDA in different geographic regions.

Scope

This report presents the findings from research and analysis on geographic variation of construction costs for SDA in response to the below report scope provided by the NDIA.

1. Develop a methodology to estimate the differences in construction costs between geographic regions (SA4).
2. Consider whether it is appropriate to use the same relative construction cost multiplier for all Building Types and Design Categories in a given region.

Limitations

Based on the scope of work and the information available to us we have performed a like-for-like comparison. To enable this, certain assumptions have also been made. This Report is limited in time and scope, other more detailed reviews or investigations may identify additional issues or considerations than this Report has noted. The results of this work are limited by the availability and quality of data. The results of this work and procedures performed do not constitute an audit, a review or other form of assurance in accordance with any generally accepted auditing, review or other assurance standards, and accordingly EY does not express any form of assurance.

Our findings are based, in part, on the assumptions stated and on information from both publicly available information and other sources used during the course of the engagement. The modelled outcomes (where appliable) are contingent on the assumptions as agreed with the NDIA and no consideration of other market events, announcements or other changing circumstances are reflected in this Report. Neither Ernst & Young nor any member or employee thereof undertakes responsibility in any way whatsoever to any person in respect of errors in this Report arising from incorrect information provided by the NDIA and other information sources used.

Methodology

EY undertook this work in collaboration with our consortium partner Quantity Surveyor (QS), MBMpl Pty Ltd ("MBM") who bring a depth of experience in SDA cost estimation through their work across feasibility studies for both Government and private sector clients. Additional information on MBM's experience and qualifications can be found in our Benchmark Construction Cost Technical Report.

The approach in undertaking the Geographic Variation in Construction Cost research methodology is detailed below.

1. Historic Assumptions

- Identified historic assumptions utilised within the historic SDA Pricing Model used to inform construction cost multipliers including:
  - Original construction cost benchmark region and rationale (i.e. benchmark region).
  - Adjustments to build type and design categories.
  - Adjustments to regional location and cyclone prone area allowance.

2. Collect and Process Data

- Rawlinson Construction Cost Guide (Rawlinson) – Location Factor Indices tracked at a State and Territory level and classified by region (i.e. Major City, Inner Regional, Outer Regional and Remote).
- Quantity Surveyor build cost and location escalation data by geographic region.

3. Analysis of Data and Key Findings

- Provided an overview of the historic methodology and the application of the assumptions within the historic SDA Pricing Model.
- Considered suitableness of the historic approach in assessing and applying geographic variation factors between geographic regions, building types and design categories.
- Reviewed consultation submissions and feedback regarding market identified issues and considerations within locational multipliers.
- Identified a suitable benchmark/baseline region in conjunction with the QS and Architects having regard to national building and planning requirements.
- Reviewed and considered current Rawlinson location factor indices (including any additional relevant datasets) and identify variances from the historic assumptions.
- Created a schedule of locational multipliers based of actual build cost data by geographic region and identify/consider adjustments based on building types, design categories and regions (where applicable).
- Identified a preferred methodology and locational multiplier dataset and establish key attributes for indices (i.e. minimum scale, updates, compatibility against benchmark and SA4 regions).
- Outlined key findings based on historic review, market research and consultation feedback.

4 Background

15 Historic Methodology and Assumptions

Historic Methodology and Assumptions

The Specialist Disability Accommodation Pricing and Payments Framework (originally released in 2016, with an update provided in June 2020), identified geographical location as a special factor to be applied to the benchmark price of SDA. This recognises that construction costs can be higher or lower in various locations and therefore need to be adjusted within the model.

The SDA Pricing Model "historic Model" developed by NDIA considers the base cost to build a new SDA dwelling within the benchmark region of metropolitan Melbourne, therefore all other geographic regions were indexed against Melbourne.

The historic Geographic Variation in Construction Costs assumptions were informed based on consideration of the following:

- State and Territory cost indices sourced from Rawlinson's Australian Construction Handbook 2016
- Remoteness cost indices sourced from Rawlinson's Australian Construction Handbook 2016
- Cyclone prone area allowance based on additional building requirements under AS/NZS1170.2:2011

The remoteness index and the state capital index were treated as multiplicative, the impact of combined state and remoteness indices formed the geographic cost variation matrix.

No adjustment or consideration was given to how build type or design category costs may be impacted across geographies.

Table 2 outlines the geographic variation in construction cost assumptions adopted within the historic Model.

Table 2: Geographic Indices used in Historic Model

State	Major city	Inner regional	Outer regional	Remote
NSW	1.03	1.08	1.13	1.24
Vic	1.00	1.05	1.10	1.20
QLD	0.97	1.02	1.07	1.16
SA	1.02	1.07	1.12	1.22
WA	1.07	1.12	1.18	1.28
Tas	1.04	1.09	1.14	1.25
ACT	1.06	1.11	1.17	1.27
NT	1.26	1.32	1.39	1.51

Source: Historic Model, 2016

5 Analysis – Geographic Variation in Construction Costs

Rawlinson Benchmark Regional Indices

Research has been undertaken into industry benchmarks for construction cost variations between capital cities, regional and remote areas across Australia. The 2022 Digital Rawlinson's Australian Construction Handbook ("Rawlinson's") building price indices were used for this purpose. Rawlinson's building price indices are based on historical data and are intended as a guide to estimate the effect of labour rates, materials and building activity at any time on building costs.

The table on the top right shows the difference in construction cost across each capital city, with Brisbane having the lowest location factor and Darwin having the highest.

The table on the bottom right shows how the location factor is impacted across each State and Territory when construction is required outside the major city in a regional or remote area.

There are no material changes in the 2022 Rawlinson indices compared to the assumptions adopted in the historic Model.

Table 3: Rawlinson 2022 Capital City Cost Index

State	Capital City	Rawlinson Index
NSW	Sydney	1.00
Vic	Melbourne	0.99
QLD	Brisbane	0.98
SA	Adelaide	1.02
WA	Perth	1.06
Tas	Hobart	1.04
ACT	Canberra	1.02
NT	Darwin	1.26

Source: Rawlinson's Australian Construction Handbook, 2022

Table 4: Rawlinson 2022 Regional Index

State	Major city	Inner regional	Outer regional	Remote
NSW	1.00	1.05 - 1.08	1.10 - 1.20	1.20 - 1.35
Vic	1.00	1.01 - 1.03	1.03 - 1.05	1.05 - 1.08
QLD	1.00	1.15	1.15 - 1.25	1.25 - 1.85
SA	1.00	1.15 - 1.18	1.25 - 1.30	1.40 - 1.50
WA	1.00	1.10 - 1.25	1.35 - 1.55	1.6
Tas	1.00	1.05	1.05 - 1.10	1.15 - 1.30
ACT	1.00	N/A	N/A	N/A
NT	1.15	1.17 - 1.30	1.45	1.65

Source: Rawlinson's Australian Construction Handbook, 2022

Quantity Surveyor Location Factors

The Quantity Surveyors, MBM, have a cost database informed by actual build costs from both Government and private sector projects nationally.

All costs within the Benchmark Construction Cost Technical Report are based on Sydney Metropolitan cost estimates, therefore the adopted benchmark region is Sydney, New South Wales. If the benchmark region is required to remain Melbourne Metropolitan in line with the historical assumption, the location factors are able to be used to adjust all detailed cost estimates in the Benchmark Construction Cost report to Melbourne Metropolitan costs.

All other geographical locations require a location multiplier to ensure the construction costs are reflective of that regions labour and material costs.

The location factors include geographic variation in costs pertaining to:

- Build costs
- Material prices
- Labour costs
- Shipping to remote areas

The location factors do not consider regional planning differences or location dependant specification requirements.

Table 5 on the following page is a guide to determining geographic variation in construction cost in different locations across Australia. The values shown are indicative and to be used for benchmark cost estimating purposes. They are not particular to a specific site or location within the region stated.

Granularity of Location Factors

The benefit of MBM's cost database is that it is not confined to only outputting indices based on a broad remoteness level. The historic model assessed land value at a SA4 level and has the capability to also assess geographic variation at the same granularity.

Therefore, MBM has provided the geographic index at an SA4 level, providing 88 different location factors compared to the historic index providing 32.

The MBM index has been provided on the following pages, which we have adopted as the new geographic variation location index factors.

New Geographic Variation Index Input

Table 5 outlines the MBM location factors which we have adopted as the new geographic variation location index factors.

Table 5: Geographic Variation in Construction Cost Index

SA4	Classification	Index
New South Wales		
Sydney - Blacktown	Major City	1.00
Sydney - City and Inner South	Major City	1.00
Sydney - Eastern Suburbs	Major City	1.00
Sydney - Inner South West	Major City	1.00
Sydney - Inner West	Major City	1.00
Sydney - Parramatta	Major City	1.00
Sydney - Ryde	Major City	1.00
Sydney - South West	Major City	1.00
Sydney – Sutherland	Major City	1.00
Sydney - North Sydney and Hornsby	Inner Regional	1.01
Sydney - Northern Beaches	Major City	1.01
Sydney - Outer South West	Inner Regional	1.02
Murray	Outer Regional	1.04
Newcastle and Lake Macquarie	Outer Regional	1.04
Hunter Valley exc Newcastle	Outer Regional	1.05
Illawarra	Outer Regional	1.05
Sydney - Baulkham Hills and Hawkesbury	Inner Regional	1.05
Sydney - Outer West and Blue Mountains	Inner Regional	1.06
Central Coast	Inner Regional	1.07
New England and North West	Outer Regional	1.07
Mid North Coast	Outer Regional	1.08
Southern Highlands and Shoalhaven	Outer Regional	1.08
Capital Region	Outer Regional	1.09
Riverina	Outer Regional	1.09
Coffs Harbour - Grafton	Outer Regional	1.11
Richmond - Tweed	Outer Regional	1.12
Central West	Outer Regional	1.18
Far West and Orana	Remote	1.32
Victoria		
Ballarat	Outer Regional	0.98
Bendigo	Outer Regional	0.98
Geelong	Inner Regional	0.98
Melbourne - Inner	Major City	0.98
Melbourne - Inner East	Major City	0.98
Melbourne - Inner South	Major City	0.98
Melbourne - North East	Major City	0.98
Melbourne - North West	Inner Regional	0.98
Melbourne - Outer East	Major City	0.98

Source: MBM Cost Estimate Report, 2023

SA4	Classification	Index
Melbourne - South East	Inner Regional	0.98
Melbourne - West	Major City	0.98
Mornington Peninsula	Major City	0.98
Latrobe - Gippsland	Inner Regional	0.99
Shepparton	Outer Regional	0.99
Warrnambool and South West	Outer Regional	1.01
Hume	Outer Regional	1.02
North West	Outer Regional	1.04
Western Australia		
Mandurah	Inner Regional	1.07
Perth - Inner	Major City	1.07
Perth - North East	Major City	1.07
Perth - North West	Major City	1.07
Perth - South West	Major City	1.14
Western Australia - Wheat Belt	Outer Regional	1.26
Perth - South East	Inner Regional	1.27
Bunbury	Outer Regional	1.33
Western Australia – Outback (North and South)	Remote	1.65

SA4	Classification	Index
Queensland		
Brisbane - East	Major City	0.97
Brisbane - North	Major City	0.97
Brisbane - South	Major City	0.97
Brisbane - West	Major City	0.97
Brisbane Inner City	Major City	0.97
Gold Coast	Inner Regional	0.97
Ipswich	Inner Regional	0.97
Sunshine Coast	Inner Regional	0.98
Moreton Bay - South	Inner Regional	0.99
Toowoomba	Outer Regional	0.99
Moreton Bay - North	Inner Regional	1.01
Wide Bay	Outer Regional	1.03
Cairns	Outer Regional	1.05
Darling Downs - Maranoa	Outer Regional	1.07
Townsville	Outer Regional	1.09
Logan - Beaudesert	Inner Regional	1.12
Mackay - Isaac – Whitsunday	Outer Regional	1.12
Central Queensland	Outer Regional	1.15
Outback	Remote	1.65

Source: MBM Cost Estimate Report, 2023

SA4	Classification	Index
South Australia		
Adelaide - Central and Hills	Major City	1.02
Adelaide - South	Major City	1.08
Adelaide - West	Major City	1.12
Adelaide - North	Inner Regional	1.16
South East	Inner Regional	1.17
Barossa - Yorke - Mid North	Inner Regional	1.31
Outback	Remote	1.54
Tasmania		
Hobart	Major City	1.04
Launceston and North East	Outer Regional	1.10
West and North West	Outer Regional	1.18
South East	Outer Regional	1.20
Northern Territory		
Darwin	Major City	1.29
Northern Territory - Outback	Remote	1.87
Australian Capital Territory		
Australian Capital Territory	Major City	1.00

Source: MBM Cost Estimate Report, 2023

"Other Territories" Consideration

No location factor has been provided for SA4 901 Other Territories due to the limited real construction data avalible and difference in location covered by this category. Other Territories span a vast geographical area including:

- Jervis Bay
- Norfolk Island
- Cocos (Keeling) Islands
- Christmas Island

There is currently no SDA within Other Territories and it is unlikely that SDA would be developed as they each have special considerations such as being reserved for government purposes and not for general residential use.

Cyclone Considerations

Australian Standard AS/NZS1170.2:2011 provides detail on what specifications are required based on the wind region, terrain category, shielding factor and topography effect to ensure compliance with the Building Code of Australia. Terrain, shielding and topography are site specific consideration, however wind speed impacts all dwellings within a region and therefore has been considered within the geographic variation in construction costs.

Wind Regions C and D in Figure 1 have additional design and engineering requirements as they are prone to cyclone level winds. While the specific requirements will vary depending on each Region, Build Type and building methodologies, it is likely that a cost premium will be realised in these locations.

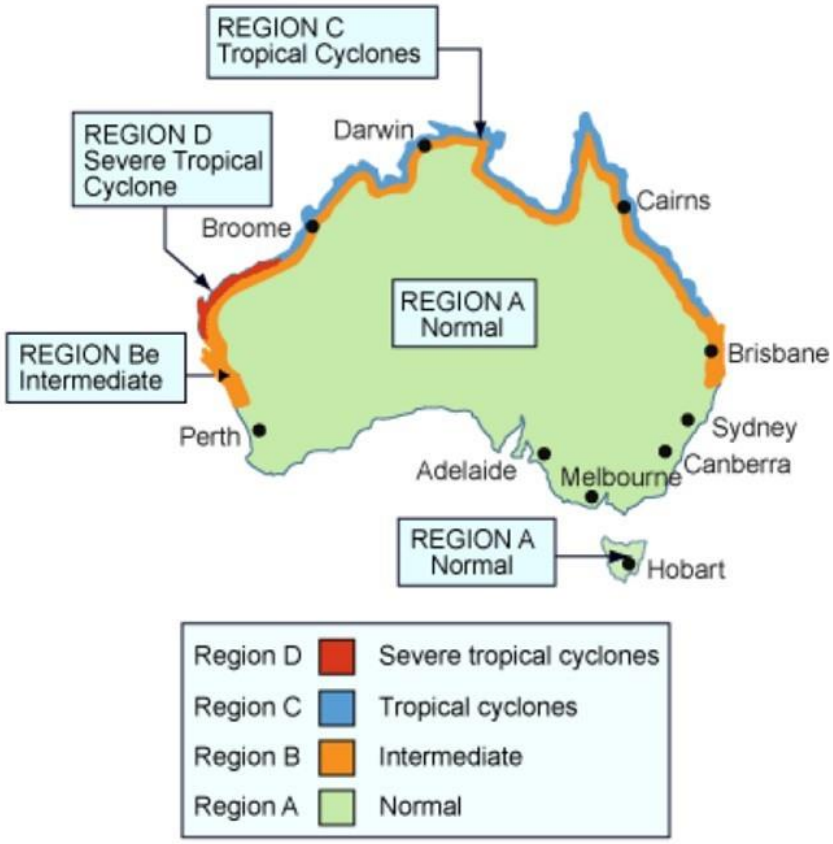
The cost premium relates to additional works including window protection, increased specification to various construction elements, increase in structural requirements and additional roof framing. These increase elements over and above what we considered in the Benchmark Construction Cost Technical Report.

Cyclone Allowance

MBM have reviewed their cost database for developments in Region C and D and found a cost premium ranging from 9% and 22% is apparent. The upper end of this range relates to more extensive structural adjustments while the lower end allows for localised cyclone resistant elements such as windows, roofing and framing for any services on the outside of the dwelling.

The historic Cyclone Allowance of 15% falls within the MBM provided range, therefore we are comfortable in this assumption remaining unchanged.

Figure 1: Cyclone Region Map



Source: SDA Model Manual, 2016

Historic Model Cyclone Allowance Findings

Cyclone Allowance Applied to Whole SA4

As shown on the map on the previous page, Cyclone Region C and D apply only to properties from the coastline to 50km inland across the Northern Territory, Queensland and northern Western Australia. Therefore the additional Cyclone Allowance should only apply to SDA dwellings constructed within the 50km wide cyclonic wind zone.

The historic Model does not have the functionality to determine the location of an SDA dwelling to the required level of granularity and applies the Cyclone Allowance automatically to whole SA4 area. This results in all SDA Dwellings within these SA4 regions receiving pricing with a location factor inflated by 15%.

We understand the complexity with having granular functionality in the model to account for the actual locations within Region C and Region D. The NDIA could consider the addition of a “toggle” or “switch” within the SDA Pricing Model to apply the Cyclone Allowance, rather than automatically applying it to whole SA4 regions. This may be reliant on providers declaring if their development is in a cyclone region or not.

As the SDA Pricing Model continues to apply the Cyclone Allowance to the entire SA4 area, we have provided both the standard Geographic Variation in Construction Cost Index, and an Index including Cyclone Allowance where applicable.

Additional SA4 Areas to be Considered for Cyclone Allowance

Further, the coastline of the below SA4 regions are also impacted by Region C and D but are not afforded the Cyclone Allowance within the historic Model:

- WA - Outback (North)
- WA - Outback (South)
- NT – Outback
- QLD – Outback

The NDIA could consider applying the Cyclone Allowance to these additional SA4 areas as well. It is noted that the entire SA4 region may not require the Cyclone Allowance.

SA4 Locations Impacted by Cyclone Allowance

Our analysis of Cyclone Region C and D shows that the below SA4 regions are fully or partially impacted by additional cyclone related construction costs.

Table 6: SA4 Locations Impacted by Cyclone Allowance

SA4 Region	Impacted Area
QLD - Cairns	NT - Darwin
QLD - Central Queensland	NT – Outback
QLD - Mackay - Isaac – Whitsunday	WA - Outback (North)
QLD – Townsville	WA - Outback (South)
QLD – Outback	

Source: EY analysis

Other Considerations

Design Category Considerations

Similarly to Build Type, the cost differential for Design Category has been considered within the benchmark construction costs. The differences between each category have been considered line by line in the capital cost estimates, with each measurement and cost considering the specific requirements of each Design Category.

Speciality equipment such as hoists which may need to be transported to some locations, fall under participant specific funding rather than construction costs, and therefore have not been considered.

The main drivers of construction cost difference between SDA Design Categories and a standard house include:

- Gross Floor Area
- Commercial grade materials, fixtures and fittings
- Speciality consultants
- Fire sprinklers
- Allowance for speciality equipment

None of the above drivers would contribute to a disproportionate cost increase and require a speciality geographic location factor to be applied. Market maturity and the availability of builders with experience in developing SDA may result in a cost premium in some locations. This is covered through the multiplier as the benchmark construction costs for the SDA Design Categories are higher than the standard costs, therefore the location factor is being applied to a higher base price.

Build Type Considerations

Separate to Build Type considerations based on Participants needs, the geographical location of a development is a factor when choosing which Build Type to develop. Local planning regulations and zoning may prohibit certain build types, or impact the scale and size of the development. However, based on actual build cost data, the development of all Build Types (houses, group homes, villas and apartments) falls within the same geographical location multiplier.

The estimated benchmark construction cost is the base which the geographical location multiplier is applied to, therefore the variation in Built Type has been considered. No additional difference in multiplier is required.

Environmental Considerations

Building on bushfire prone land, flood hazard areas or other locations impacted by specific environmental issues often requires modification of construction material used, design, different height requirements, geotechnical advice, development approval requirements and other considerations above that of a standard development. This may contribute to increased construction cost, above what has been considered within the Benchmark Construction Cost Technical Report cost estimates.

No additional cost allowance has been considered for SDA built on sites with environmental requirements. This is on the basis that the intent of the NDIS Pricing Arrangements for SDA is to provide a fair price to providers to develop, maintain and hold SDA assets nationally to ensure support for the SDA market. The pricing ensures SDA providers can develop SDA within a SA4 area, but does not consider whether all parcels of land are suitable under SDA.

Historic Regional Index Comparison

Comparison between the historic model's regional index and MBM's location factors has been assessed to provide additional insight into the impact the updated geographic variation index may have. To ensure we are assessing the indices on a like-for-like basis, MBM have also provided the location factors with Melbourne Metropolitan as the base index region. Further, the like-for-like comparison excludes the Cyclone Allowance, due to the differences outlined on page 23.

A full comparison between the historic and MBM assumption is provided in the Annexure B. Overall the comparison shows:

- 47% of SA4 regions have less than 0.02 increase/decrease
- 40% of SA4 regions have between 0.03 and 0.10 increase/decrease
- 13% of SA4 regions have over 0.11 increase/decrease

There are several factors which may be impacting the difference between the historic Rawlinson's index and MBM's location factors, these include:

- Change to geographic regions with increased granularity to SA4
- Change in construction costs across various regions as a result of external impacts such as COIVD-19, material shortages, market activity and demand
- Utilising a cost database informed by actual build costs

We have provided analysis of a sample of the index comparisons in Table 7. Overall the index provides increased accuracy for regions where there is a variance.

Table 7: Sample Index Comparison 1

State and SA4	Classification	Historic	MBM Index	Difference
QLD - Central Queensland	Outer regional	1.07	1.17	0.10
QLD - Mackay - Isaac – Whitsunday	Outer regional	1.07	1.14	0.07
QLD - Townsville	Outer regional	1.07	1.11	0.04
QLD - Darling Downs - Maranoa	Outer regional	1.07	1.09	0.02
QLD - Cairns	Outer regional	1.07	1.07	0.00
QLD - Wide Bay	Outer regional	1.07	1.05	-0.02
QLD - Toowoomba	Outer regional	1.07	1.01	-0.06

Source: EY analysis

The table above shows each of the SA4 regions classified as outer regional in Queensland, which all had the same historical index assumption. When comparing to the MBM location factors, differences range between -0.02 to 0.10, showing the variation in costs across the region. Using the more granular approach provides increased geographic variation accuracy.

Comparison Legend	>0.10	0.03 – 0.10	<0.02

Table 8: Sample Index Comparison 2

State and SA4	Classification	Historic	MBM Index	Difference
WA - South West	Major city	1.07	1.14	0.07
WA - Inner	Major city	1.07	1.07	0.00
WA - North East	Major city	1.07	1.07	0.00
WA - North West	Major city	1.07	1.07	0.00

Source: EY analysis

The table above shows each of the SA4 regions classified as major city in Western Australia, which all had the same historical index assumption. When comparing to the MBM location factors, three out of the four SA4 regions have no change. The South West region has increased by 0.07, indicating that either:

- Since 2016 build costs have increased in South West
- And/ or the historical remoteness index reduced South West as it was an outlier within the major city region

This provides confidence that the more granular approach of using SA4's increases the accuracy of the index.

Table 9: Sample Index Comparison 3

State and SA4	Classification	Historic	MBM Index	Difference
QLD - Outback	Remote	1.16	1.67	0.51

Source: EY analysis

The table above shows that there is only one SA4 region in Queensland classified as remote, meaning that this is an exact like-for-like comparison in geographical location factors. This SA4 region recorded the highest difference between the historic and MBM index. Reasons for the increase may include:

- Outback region covers over half of that state of Queensland and due to its large size has recorded large variances in build costs. As shown on Page 14, Rawlinson's 2023 records costs ranging from 1.25 - 1.85 for the region, with Mornington Island and Torres Straight Islands recording up to 2.05.
- Since 2016 build costs have increased in Outback, a portion of this likely due to the impact of COVID-19 and transportation costs
- Limited evidence of construction cost in this area

Given MBM's index of 1.67 falls within Rawlinson's range for this area we consider it a reasonable location factor.

Comparison Legend	>0.10	0.03 – 0.10	<0.02

6 Appendices

Annexure A: Glossary

Term	Meaning
Building Type	The Design Category as per the SDA Framework - Apartment, Duplex/Villa/Townhouse, House or Group Home.
Apartment	Self-contained units that are part of a larger residential building.
Duplex, Villa, Townhouse	Separate but semi-attached properties within a single land title or strata titled area. This also includes stand-alone villas or granny-flats.
House	Detached low-rise buildings with garden or courtyard areas with fewer than 4 bedrooms.
Group Home	Houses that have 4 or 5 bedrooms.
Design Category	The Design Category as per the SDA Framework - Basic, Improved Liveability, Fully Accessible, Robust or High Physical Support.
Basic	Housing without specialised design features but with other important SDA characteristics (e.g. location, privacy, shared supports).
Improved Liveability (IL)	Housing that has been designed to improve 'Liveability' by incorporating a reasonable level of physical access and enhanced provision for people with sensory, intellectual or cognitive impairment.
Fully Accessible (FA)	Housing that has been designed to incorporate a high level of physical access provision for people with significant physical impairment.
Robust	Housing that has been designed to incorporate a high level of physical access provision and be very resilient, reducing the likelihood of reactive maintenance and reducing the risk to the participant and the community.
High Physical Support (HPS)	Housing that has been designed to incorporate a high level of physical access provision for people with significant physical impairment and requiring very high levels of support.
Enrolled Dwelling	A dwelling enrolled under section 26 of the *NDIS (Specialist Disability Accommodation) Rules 2020* to provide SDA.
NDIA	National Disability Insurance Agency.

Term	Meaning
NDIS	National Disability Insurance Scheme.
SA4	Statistical Areas Level 4 (SA4) are geographical areas . The SA4 regions are the largest sub-State regions in the Main Structure of the Australian Statistical Geography Standard (ASGS). A minimum of 100,000 persons was set for the SA4s, although there are some exceptions to this. In regional areas, SA4s tend to have populations closer to the minimum (100,000 - 300,000). In metropolitan areas, the SA4s tend to have larger populations (300,000 - 500,000).
SDA	Specialist Disability Accommodation.
SDA Type	The SDA type under the SDA Framework - Existing, Legacy, New Build or New Build (refurbished).
New Build	An SDA dwelling that was built (has a certificate of occupancy dated) after 1 April 2016 and meets all of the requirements under the SDA Rules and NDIS Price Guide.
Existing	Dwellings built before 1 April 2016 that were used as disability related supported accommodation under a previous State, Territory or Commonwealth scheme. Existing dwellings must substantially comply with the requirements of a new build, and must meet the maximum resident requirement (5 residents or less).
Legacy	Existing dwellings that do not meet the maximum resident requirement of 5 residents or less. Over time, the NDIA will stop making SDA payments towards Legacy dwellings.
New Build (refurbished)	A dwelling that was built before 1 April 2016 but has been significantly refurbished since and now meets all of the requirements for a new build in the SDA Rules and NDIS Price Guide. In order to qualify for as a New Build (refurbished) providers must spend a minimum amount. These minimum amounts are specified per dwelling type in the SDA Price Guide.
Historic Model	2016 SDA Pricing Model developed by NDIA.

Annexure B: Historic Geographic Variation in Construction Cost Comparison

The tables below provide a comparison between the historic regional index and MBM's location factors. It is exclusive of any consideration of the Cyclone Allowance.

Classification
1 Major city
2 Inner regional
3 Outer regional
4 Remote

State and SA4	Classification	Historic	MBM Index	Difference
QLD - Outback	4	1.16	1.67	0.51
NT - Northern Territory - Outback	4	1.51	1.89	0.38
WA – Outback (North and South)	4	1.28	1.65	0.37
SA - Outback	4	1.22	1.56	0.34
SA - Barossa - Yorke - Mid North	2	1.07	1.33	0.26
WA - Bunbury	3	1.18	1.33	0.15
WA - Perth - South East	2	1.12	1.27	0.15
QLD - Logan - Beaudesert	2	1.02	1.14	0.12
SA - Adelaide - West	1	1.02	1.14	0.12
SA - South East	2	1.07	1.19	0.12
SA - Adelaide - North	2	1.07	1.18	0.11
NSW - Far West and Orana	4	1.24	1.34	0.10
QLD - Fitzroy	3	1.07	1.17	0.10
WA - Wheat Belt	3	1.18	1.26	0.08
SA - Adelaide - South	1	1.02	1.10	0.08
TAS - South East	3	1.14	1.22	0.08
QLD - Mackay - Isaac – Whitsunday	3	1.07	1.14	0.07
WA - Perth - South West	1	1.07	1.14	0.07
NSW - Central West	3	1.13	1.20	0.07

State and SA4	Classification	Historic	MBM Index	Difference
NSW - Central West	3	1.13	1.20	0.07
TAS - West and North West	3	1.14	1.20	0.06
NT - Darwin	1	1.26	1.31	0.05
QLD - Townsville	3	1.07	1.11	0.04
QLD - Darling Downs - Maranoa	3	1.07	1.09	0.02
QLD - Brisbane - East	1	0.97	0.99	0.02
QLD - Brisbane - North	1	0.97	0.99	0.02
QLD - Brisbane - South	1	0.97	0.99	0.02
QLD - Brisbane - West	1	0.97	0.99	0.02
QLD - Brisbane Inner City	1	0.97	0.99	0.02
SA - Adelaide - Central and Hills	1	1.02	1.04	0.02
TAS - Hobart	1	1.04	1.06	0.02
QLD - Moreton Bay - North	2	1.02	1.03	0.01
NSW - Central Coast	2	1.08	1.09	0.01
NSW - Richmond - Tweed	3	1.13	1.14	0.01
QLD - Cairns	3	1.07	1.07	0.00
NSW - Sydney - Northern Beaches	1	1.03	1.03	0.00
VIC - Melbourne - Inner	1	1.00	1.00	0.00
VIC - Melbourne - Inner East	1	1.00	1.00	0.00

Source: Historic Model, 2016, MBM 2023, EY analysis

Comparison Legend: >0.10 | 0.03 – 0.10 | <0.02

State and SA4	Classification	Historic	MBM Index	Difference
VIC - Melbourne - Inner South	1	1.00	1.00	0.00
VIC - Melbourne - North East	1	1.00	1.00	0.00
VIC - Melbourne - Outer East	1	1.00	1.00	0.00
VIC - Melbourne - West	1	1.00	1.00	0.00
VIC - Mornington Peninsula	1	1.00	1.00	0.00
WA - Perth - Inner	1	1.07	1.07	0.00
WA - Perth - North East	1	1.07	1.07	0.00
WA - Perth - North West	1	1.07	1.07	0.00
NSW - Sydney - Outer West and Blue Mountains	2	1.08	1.08	0.00
NSW - Coffs Harbour - Grafton	3	1.13	1.13	0.00
QLD - Moreton Bay - South	2	1.02	1.01	-0.01
NSW - Sydney - Blacktown	1	1.03	1.02	-0.01
NSW - Sydney - City / Inner South	1	1.03	1.02	-0.01
NSW - Sydney - Eastern Suburbs	1	1.03	1.02	-0.01
NSW - Sydney - Inner South West	1	1.03	1.02	-0.01
NSW - Sydney - Inner West	1	1.03	1.02	-0.01
NSW - Sydney - Parramatta	1	1.03	1.02	-0.01
NSW - Sydney - Ryde	1	1.03	1.02	-0.01
NSW - Sydney - South West	1	1.03	1.02	-0.01
NSW - Sydney - Sutherland	1	1.03	1.02	-0.01
NSW - Sydney - Baulkham Hills and Hawkesbury	2	1.08	1.07	-0.01
QLD - Wide Bay	3	1.07	1.05	-0.02
QLD - Sunshine Coast	2	1.02	1.00	-0.02
NSW - Capital Region	3	1.13	1.11	-0.02
NSW - Riverina	3	1.13	1.11	-0.02
TAS - Launceston and North East	3	1.14	1.12	-0.02
QLD - Gold Coast	2	1.02	0.99	-0.03
QLD - Ipswich	2	1.02	0.99	-0.03
NSW - Mid North Coast	3	1.13	1.10	-0.03
NSW - Southern Highlands and Shoalhaven	3	1.13	1.10	-0.03
ACT - Australian Capital Territory	1	1.06	1.02	-0.04
VIC - Latrobe - Gippsland	2	1.05	1.01	-0.04
VIC - North West	3	1.10	1.06	-0.04
NSW - Sydney - Outer South West	2	1.08	1.04	-0.04

Comparison Legend	>0.10	0.03 – 0.10	<0.02

Source: Historic Model, 2016, MBM 2023, EY analysis

State and SA4	Classification	Historic	MBM Index	Difference
NSW - New England / North West	3	1.13	1.09	-0.04
VIC - Geelong	2	1.05	1.00	-0.05
VIC - Melbourne - North West	2	1.05	1.00	-0.05
VIC - Melbourne - South East	2	1.05	1.00	-0.05
NSW - Sydney - North Sydney and Hornsby	2	1.08	1.03	-0.05
WA - Mandurah	2	1.12	1.07	-0.05
QLD - Toowoomba	3	1.07	1.01	-0.06
VIC - Hume	3	1.10	1.04	-0.06
NSW - Hunter Valley exc Newcastle	3	1.13	1.07	-0.06
NSW - Illawarra	3	1.13	1.07	-0.06
VIC - Warrnambool and South West	3	1.10	1.03	-0.07
NSW - Murray	3	1.13	1.06	-0.07
NSW - Newcastle and Lake Macquarie	3	1.13	1.06	-0.07
VIC - Shepparton	3	1.10	1.01	-0.09
VIC - Ballarat	3	1.10	1.00	-0.10
VIC - Bendigo	3	1.10	1.00	-0.10

Comparison Legend | >0.10 | 0.03 – 0.10 | <0.02

Source: Historic Model, 2016, MBM 2023, EY analysis

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