

Proposed Design and Place State Environmental Planning Policy: Cost Benefit Analysis

Department of Planning, Industry and Environment
7 December 2021

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1 Background

1.1 Purpose of this document

This document provides an overview and outcomes of the economic evaluation undertaken to assess the impact of the proposed Design and Place State Environmental Planning Policy (DP SEPP) package including the supporting policy instruments and guides.

This is a summary document. It aims to provide a brief and accessible overview of a range of other detailed analyses and reports relating to DP SEPP. These other analyses and reports will be updated as the DP SEPP develops. In particular, the components of this analysis relating to the Apartment Design Guide are based on the findings from detailed designs, feasibilities and costings prepared for five apartment sites.

The results outlined in this document are based on inputs available and analysis undertaken as at 7 December 2021. It is likely that further refinements to the analysis will be undertaken in the future which may affect both the estimated costs and benefits. These refinements would most likely relate to inputs and assumptions relating to housing forecasts as well as, potentially, updated financial inputs for some geographic regions.

1.2 The Design and Place State Environmental Planning Policy

The proposed DP SEPP is part of the broader review of all SEPPs and aims to simplify and consolidate previous policies and update legislative requirements to maximise public benefit. The goal of the DP SEPP is to promote the design of healthy and prosperous places that support the wellbeing of people, community, and the country. In addition, the DP SEPP establishes and strengthens a place-based approach to better designs, building on enhancing the attraction of the many unique places across New South Wales.

1.3 Economic evaluation

The purpose of an economic evaluation is to provide an evidence-based assessment of the impacts of proposed policies (in this case, the DP SEPP) by considering the costs and benefits of a range of options, including non-regulatory options. An economic evaluation can help identify preferred policy options as well as clarify which areas of a policy could be adapted to enhance overall outcomes.

A cost benefit analysis examines all the monetary and non-monetary or intangible costs and benefits of a proposal from the point of view of society as a whole, including economic, social, environmental and other outcomes. It is a tool for determining whether or not the societal benefits of an investment are outweighed by the societal costs, and, if so, to what extent.

This cost benefit analysis of the DP SEPP was undertaken in line with the following government requirements and guidance documents:

- Office of Best Practice Regulation: *Cost-benefit analysis guidance note*
- NSW Treasury: *TPP17-03 NSW Government Guide to Cost Benefit Analysis*.

Undertaking a cost-benefit analysis in accordance with these guidelines involves four key steps.

1. Defining a base case and project case and, as relevant, project delivery options.
2. Identifying the costs and benefits of the project.
3. Quantifying the time series path of each cost and benefit, wherever possible, or qualitatively acknowledging costs and benefits that cannot be quantified.
4. Ascertaining the net present value (NPV) of the time series path for each cost and benefit.

The results presented in this report are underpinned by stakeholder consultation and preliminary feasibilities for **five case study locations** in Greater Sydney. These preliminary feasibilities studies were conducted in order to understand the revenue and cost impacts under the

proposed revisions of the Apartment Design Guide (ADG) inside the broader DP SEPP. Costs and revenues based on these hypothetical development feasibility studies are summarised in the Appendix of this report.

This cost benefit analysis builds on and utilises previous work around the DP SEPP, including previous economic studies such as that of SGS Economics & Planning for Government Architect New South Wales (GANSW) in relation to DP SEPP.

2 Policy Overview

SEPPs are instruments that address planning issues on a state-wide level. The NSW Department of Planning Industry & Environment (DPIE) regularly undertakes a review of SEPPs to help modernise, simplify and improve the effectiveness and usability of policies. Development of DP SEPP is part of the broader review of all SEPPs and aims to simplify and consolidate how to deliver good building and place design in NSW. The overarching goal of the DP SEPP is to promote the design of healthy and prosperous places that support the wellbeing of people, community, and country. Alongside, it seeks to set clearer benchmarks for development, leading to simpler and clearer approval pathways.

The proposed DP SEPP will repeal and replace State Environmental Planning Policy No 65—Design Quality of Residential Apartment Development (SEPP 65) and State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 (BASIX SEPP), with the intention to integrate previous policies and update legislative requirements to maximise public benefit. The DP SEPP is the first principles-based regulation that incorporates considerations and guidance to encourage innovative design that maximises public benefit.

2.1 Key policy issues

The proposed DP SEPP aims to address **five key issues** associated with the current regulatory framework.

1. **A fragmented planning policy framework.** Existing design guidance and regulation in NSW lacks coherence and is disjointed across numerous instruments, leading to high level of uncertainty, risk and transaction costs for developers. The DP SEPP consolidates these regulations utilising a principles-based policy framework.
2. **Inflexible design standards.** Some design standards and requirements in NSW are excessive, inflexible, redundant or otherwise not fit for purpose, creating unnecessary cost in the development process.
3. **Low design standards leading to potential environmental cost.** The existing planning policies are not aligned with the broader strategic goals of NSW emissions reduction policy and Environment Planning Act.
4. **Unsatisfactory design outcomes having negative impact on living standards.** Poor design outcomes in precincts and large sites reduces community health and wellbeing, negatively impacting on quality and standards of living.
5. **Foregone cultural value.** There has been limited engagement with First Nation's people in urban design, planning and development. This has led to development of cities with little connection to Country and as a result denying citizens the cultural enjoyment and appreciation of the places they live and visit.

2.2 Need for the Design and Place State Environmental Planning Policy

The proposed DP SEPP aims to integrate sustainable and culturally considerate planning directions in order to become consistent with broader policy frameworks such as *Connecting for Country* and NSW's net zero policies. As such, the DP SEPP pursues a design-led, place-based approach to regulation, following five key principles:

- Deliver beauty and amenity to create a sense of belonging for people.
- Deliver inviting public spaces and enhanced public life to create engaged communities.
- Promote productive and connected places to enable communities to thrive.
- Deliver sustainable and greener places to ensure the well-being of people and the environment.
- Deliver resilient, diverse places for enduring communities.

These principles underpin the design and assessment framework for developments across NSW. The DP SEPP will apply to all development excluding class 1A buildings, consolidation or subdivision of two lots, exempted and complying development and non-urban land.

The proposed DP SEPP aims to achieve greater benefits to the wider NSW community through strengthening a place-based approach to developments. These proposed elements include increased open space, improved public amenity (i.e. increased tree plantings, cooler urban places) and encourage decreased private car usage and overriding health benefits. There will also be increased individual outcomes through increased provision of sustainable housing, increased access to services and transport options and better urban patterns and connectivity. Developers will also have increased certainty through improved early design work, greater transparency and decision making.

2.2.1 Role of DP SEPP in enhancing productivity in NSW

The proposed DP SEPP seeks to address the NSW Productivity Commission White Paper's (2021) recommendation 7.2 "to both identify where regulation is justified and ensure it applies proportionate responses, including non-regulatory approaches wherever possible". This includes investigating issues where there is no particular market failure, such as in the case of car parking provision and apartment sizes.

The DP SEPP addresses the Recommendation 7.2 of the Productivity Commission's White Paper by:

- **Simplifying the planning policy framework:** the integration of planning policies and instruments such as BASIX and SEPP 65 along with supporting the simplification and consolidation of design requirements in NSW. The addition of policy guidance such as the UDG and LGDRPM to the SEPP further support the consolidation of design requirements into a single, comprehensive policy response to address a fragmented and overly complex planning framework.
- **Adopting a principle-based policy approach:** a principle-based approach to planning policies is less prescriptive as it supports innovation and promotes better design outcomes without prescribing a solution in the policy response. This includes outlining the principles that councils should use to guide their implementation of the standards, where flexibility is needed.
- **Maximising flexibility through the DP SEPP:** design requirements within the Urban Design Guide and Apartment Design Guide are objectives based. Provisions in the DP SEPP will allow the objectives of each guide to be met in a flexible manner by satisfying the objective, either through the applicable design criteria and guidance, or by proposing suitable alternative solutions. For example, the ADG provides design guidance on minimum rates for bicycle parking in residential apartment buildings. Where these minimum rates cannot be met, the ADG provides alternative design responses which promotes active transport and reduced private car usage. Alternative design responses include the implementation of the Green Travel Plan and providing multiple car share services within 400m of the primary building entry. To maximise flexible application of the Guides, consent decisions that are based on the Guides do not establish a precedent for future applications. This means all decisions will be based on just the application, its site conditions and the Guides.
- **Leveraging other regulatory standards to maximise flexibility within the DP SEPP:** developers are able to offer alternative design responses to design criteria and guidance within the Urban Design Guide and Apartment Design Guide through the application of the flexibility provision on the proposed policy initiatives.

2.3 The need for government action

To determine if government action is necessary, it is important to establish if a problem exists and the size and nature of that problem. The need for government action has been formally recognised in the SEPPs review program, which aims to simplify and improve the NSW planning policy framework. Previous interventions by government through the introduction of new policies and priorities, although individually having merit, have resulted in a complex and fragmented design planning governance framework in NSW.

This demonstrates a strong need for regulatory reform to simplify the NSW planning system, bringing together disparate policies and regulatory instruments concerning design into a single document. An inconsistent and fragmented regulatory framework has led to inefficiencies and complexities in the design planning process.

There are also a number of potential market failures that could arise in the absence of the amendments made to the DP SEPP. These provide a rationale for government intervention in the management of good urban design, local amenity and the sustainable management of the State's built environment in addition to maintaining flexibility within the regulatory framework. Taken together there is a clear need for government regulation to balance the trade-offs between providing flexibility to maximise private land value, and welfare for NSW residents, businesses, and the environment through the DP SEPP.

2.3.1 Nature of the good

2.3.1.1 Public goods

The DP SEPP is a large package of reforms which addresses a range of market and non-market goods. While a large proportion of these reforms are related to market goods such as dwellings, a range of policy initiatives provide guidance for appropriate levels of public goods such as open space, green space, tree canopy requirements as well as visual and private amenity.

2.3.1.2 Common pool resources

Provisions under the DP SEPP, especially the ADG, provide guidance on the design, quality and number of facilities within an apartment such as elevators, communal and open space, car share parking, bike parking and storage requirements. These resources within an apartment can be treated as common pool resources which are prone to undervaluation because they are non-excludable but can be subject to congestion and overuse. There is a need for regulatory oversight over basic design quality for shared resources within developments, without which underinvestment can reduce amenity and liveability outcomes.

2.3.1.3 Externalities

Built environments can exert a significant negative externality on the environment that are not managed within the private market. This includes noise, light, and air pollution from construction activity as well as the contribution of the built environment on greenhouse gas emissions and exacerbating the urban heat island effect. These negative externalities detract from local amenity, deplete natural resources, and contribute to climate change by increasing carbon emissions in the atmosphere. Regulatory intervention is needed to help mitigate the impacts of these negative externalities such that an economically efficient outcome where all costs and benefits (including externalities) beyond private value are considered.

2.3.2 Availability of information

2.3.2.1 Information failure

The current planning framework provides inconsistent and fragmented information resulting in slow approval processes, poor housing affordability and lower housing supply. This is an information and communication failure, preventing the market from achieving efficient outcomes. Better regulatory oversight is required to adequately communicate the necessary information to minimise inefficient market outcomes.

2.3.3 Treatment of risks and benefits realisation

2.3.3.1 Low probability, high impact events

Market led investment will underinvest in preparation for low probability high impact events such as fire, flood, cyclone, pandemic etc. There is need for regulatory oversight to ensure adequate investment into preparation and preparedness initiatives as well as to future proof NSW's built environment. Initiatives which aim to improve design quality and build resilient infrastructure that can withstand damages from natural hazards in the DP SEPP are important to ensure these provisions are adequately invested in.

2.3.3.2 Present bias, matching costs and future option value

Present bias refers to the notion that individuals fail to fully consider ongoing costs and future needs when making decisions. An example is the long-term cost of energy consumption.

Regulatory intervention can support an early energy transition, reducing the future cost of a steeper transition curve for individuals.

Furthermore, Apartment considerations today must factor in future trends to provide adequate housing supply. Noting that population growth will increase pressures on housing supply, a shift towards families living in apartments is expected to occur. Proposed regulations within the DP SEPP enable developments to be more adaptable to future needs of a growing population, through measures which support family living.

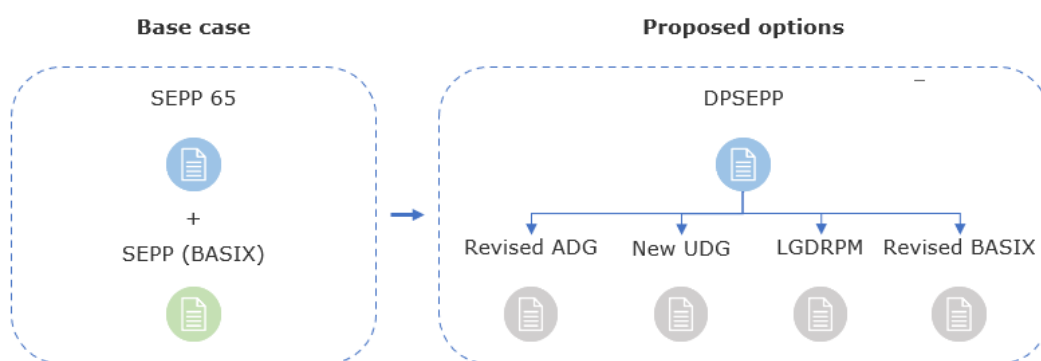
2.3.3.3 Future option value

The option value refers to the extent to which design decisions are irreversible. For example, larger spaces have an option value of being split into smaller spaces in the future. The reverse, aggregating smaller spaces into larger ones, is often cost prohibitive. Regulations around dwelling mix and yield need to be considered carefully in order to minimise the loss of future option value.

A lack of regulation can lead to a reduction in green space, which is 'locked in' and irreversible. In this sense the DP SEPP policy can help secure future option value by ensuring adequate open space, green space and building requirements are considered within the regulatory framework.

2.4 Supporting policies and guides

The DP SEPP will be supported by a revised Apartment Design Guide (ADG), a new Urban Design Guide (UDG) and Local Government Design Review Panel Manual (LGDRPM) and revisions to BASIX.



2.4.1.1 Apartment Design Guide (Revised)

The Apartment Design Guide (ADG) is a resource to improve the planning and design of residential apartment development in NSW. This replaces the 2015 version of the Apartment Design Guide. The ADG will help to achieve better design and planning for residential apartment development, by providing benchmarks for designing and assessing these developments.

There is a close and integrated relationship between this ADG and the DP SEPP. The DP SEPP refers to some parts of the ADG that must be applied when assessing development applications. Revisions to the ADG aim to address concerns around inflexible planning requirements with regards to solar access, natural ventilation, noise, apartment size and layout, deep soil and landscape design as well as car parking.

2.4.1.2 Urban Design Guide (New)

The NSW Urban Design Guide (UDG) will complement the NSW DP SEPP by facilitating place-based design approaches to planning projects considered at the scale of the city or town, the neighbourhood and the block or large sites. The UDG supports the aim of the DP SEPP in creating healthy and prosperous places for people, community and Country.

2.4.1.3 Local Government Design Review Panel Manual (New)

The Local Government Design Review Panel Manual (LGDRPM) provides advice on how to convene, conduct and participate in design review panels that are consistent, independent, expert, and timely. The LGDRPM supports the requirement within the DP SEPP for design review conducted by a design review panel (DRP) to form part of the planning approvals process for certain projects.

2.4.1.4 Building Sustainability Index (Revised)

The Building Sustainability Index (BASIX) is a scheme introduced by the NSW Government in 2004 to regulate the energy efficiency of residential buildings. The DP SEPP will replace *SEPP Building Sustainability Index: BASIX 2004* and will continue to drive sustainability targets for energy and water efficiency for housing in NSW.

2.5 Key policy initiatives for economic evaluation

The DP SEPP replaces two existing State environment planning policies namely SEPP No 65 – Design Quality of Residential Apartment Development and SEPP (Building Sustainable Index: BASIX) 2004. The relevant provisions from existing State environmental planning policies are transferred to the DP SEPP.

Additionally, the DP SEPP also establishes new guidance in the form of an Urban Design Guide and a Design Review Guide to provide a streamlined, consistent, and robust framework to address key issues and respond to each of the five principles identified for the design and assessment of places in urban and regional New South Wales.

This reform results in revisions to existing provisions under the Apartment Design Guide and BASIX. Together, this package of reforms concerns a number of existing, revised, and new policy initiatives.

Deloitte Access Economics worked with DPIE, NSW Treasury and industry experts to identify key policy initiatives from the package of policy initiatives proposed under the DP SEPP using an established set of criteria. An initiative was shortlisted as a 'key initiative' if it was considered to have a significant cost or benefit impact, or if it met the following criteria:

- involved a high degree of regulatory prescription (as per DPIE's assessment)
- had potential for high compliance costs
- was amended or new policy position (not just a continuation of existing policy settings)
- covered the full breadth of policy principles guiding the SEPP package
- was relevant to the CBA, especially with reference to the quantitative analysis.

This approach was taken as a pragmatic response to appropriately consider the range of policy initiatives proposed in the DP SEPP for the purposes of the modelling the impact of the policy in a cost-benefit analysis (CBA). Narrowing the list of policy initiatives into a priority list of key initiatives was integral to examine and quantify the incremental impacts of the proposed reform. This allowed for better identification of the types of benefits and costs applicable to each of the key initiatives, as well as guiding policy development to key areas of impact. Initiatives that were likely to impose a significant burden or elicit a strong response from certain stakeholders were included in the modelling.

After identifying key policy initiatives, Deloitte Access Economics grouped these initiatives into one of six 'impact categories' based on the similarity between costs, benefits, and stakeholders affected. Each key policy initiative was assigned to the impact category it best aligned with.

The six impact categories are identified in Table 2.1. The impact categories were designed to be mutually exclusive and comprehensively exhaustive (i.e., the impact categories listed should capture the full range of effects the key initiatives will have on the market).

Table 2.1: Description of impact categories used to group key initiatives proposed in the Design and Place SEPP

Impact Category	Description
Build requirements / due diligence	Includes initiatives that require industry to design or construct dwellings in a certain way. This also includes initiatives in the DP SEPP which reference additional application requirements to be fulfilled by developers.
Environment - energy, water and emissions	Refers to environmental initiatives that involve a requirement to incorporate water/energy sustainability elements into a design. In particular, this group includes a number of initiatives which seek to improve environmental outcomes from reducing greenhouse gas emissions.
Environment - other	Refers to initiatives that reduce the impact of developments on the environment through impacts other than the reduction of greenhouse gas emissions. In particular, initiatives in this category relate to green infrastructure requirements that reduce the impact of urban heat island effect or initiatives which seek to reduce waste. As such, this group encompasses initiatives which seek to improve sustainability and environmental outcomes, where the major impact is not emissions reduction.
Social and cultural consideration	Refers to initiatives that improve the social/cultural impact of a development, i.e., improve connection to place, empower indigenous engagement and provide social cohesion benefits.
Mobility / connectivity	Groups those initiatives that improve walkability and connectivity between places in urban precincts by prescribing certain design characteristics of those precincts.
Amenity	Refers to initiatives that improve the features or facilities of the development site and surrounds, including open space requirements and passive design goals. These initiatives provide guidance or instruction on how to improve amenity by conforming with good design practice.

Source: Deloitte Access Economics

2.6 Options considered for this analysis

In line with NSW Treasury guidelines, this report considers a base case, a non-regulatory option, and two other potential policy options.

2.6.1 Base case

The **base case** is defined as 'business as usual' with no change to the current regulatory system, meaning that the two existing SEPPs, namely SEPP No 65 – Design Quality of Residential Apartment Development and SEPP (Building Sustainable Index: BASIX) 2004 would not be repealed and replaced by the DP SEPP. No additional provisions to these SEPPs will be made and no new guidance in the form of an Urban Design Guide or a Design Review Guide will be provided.

2.6.2 Other options

The options for analysis in this cost benefits study are informed by the recommendations made by the NSW Productivity Commission in its White Paper on "Rebooting the Economy" published in May 2021. The White Paper finds that current design regulations under SEPP No 65 are "overly complex, prescriptive, and inflexible to the changing needs of business and residents." An inconsistent and fragmented regulatory framework has led to declining housing supply, slow approval processes and poor housing affordability in NSW.

Under Recommendation 7.2, the White Paper recommends a review and revision of SEPP No 65 to maximise flexibility while maintaining minimum basic quality for dwellings in NSW. The options considered in this analysis explore a spectrum of policy positions to improve flexibility in design regulations whilst maintaining the minimum basic quality.

2.6.3 Option 1: Proposed Design and Place SEPP without the flexibility provision

Under option 1, developments are subject to the full set of provisions proposed under the DP SEPP. This includes the revised targets for BASIX and the ADG as well as new provisions under the UDG and DRG. Importantly, no additional flexibility would be provided to meet new design requirements other than what is already available to applicants within the proposed DP SEPP.

Revisions to the ADG aim to increase flexibility while maintaining minimum basic quality for its residents. Some elements of the ADG, although prescriptive in nature, aim to meet the changing needs for business and residents. For example, apartment mix regulations introduced in the revised ADG which alter the ratio of 1-, 2-, 3-, and 4-bedroom apartments in a development where an LGA does not already prescribe a mix, aim to mitigate future demand shortages resulting from an observed increase in families living in apartments rather than standalone dwellings. A shift towards families living in apartments will reduce demand for studios and one-bedroom apartments, which currently dominate the apartment mix in most developments. Revisions to BASIX and new provisions under the UDG aim to improve environmental outcomes and reduce greenhouse gas emissions to decarbonise residential developments and future proof urban design requirements. Finally, regulations within the DRG aim to increase transparency and reduce inconsistency in design regulations.

2.6.4 Option 2: Proposed Design and Place SEPP with the flexibility provision

Under option 2, the impacts of a flexibility provision on the proposed policy initiatives under the DP SEPP are considered. While the provisions under the DP SEPP and accompanying instruments remain unchanged in this option, the flexibility provision provides applicants with some flexibility in the application of design criteria. If a design proposal which varies design criteria can meet the objectives of the design criteria in the zone in which the development is proposed and the applicant can demonstrate the departure will result in improved planning outcomes, the applicant may deviate from prescribed design criteria.

The ability to vary design criteria, based on approval by the design assessment authority, provides applicants with additional flexibility in the implementation of the policy initiatives proposed under the DP SEPP. Furthermore, previous exclusion of regulatory guidance such as BASIX will no longer be exempt from the application of the flexibility provision.

2.6.5 Option 3: Proposed Design and Place SEPP with the flexibility provision and adjustments of selected policy initiatives

Option 3 considers a variation of Option 2 – SEPP with flexibility provision – and with adjustments to selected initiatives inside the SEPP, ADG and UDG. Many of these are existing policy provisions, not new ones proposed as part of the DP SEPP package. Adjustments to initiatives were developed in consultation with NSW Treasury and Deloitte Access Economics. Generally, those initiatives which are expected to significantly increase construction costs or impose stringent minimum standards are adjusted in this option. It is understood the initiatives also have a significant impact on reduction of amenity for consumers. Initiatives relating to open space and green space requirements as well as sustainability standards are adjusted where other regulations are expected to achieve the same impact or the initiatives in the DP SEPP exceed national standards.

3 Policy outcomes

Cost-benefit analysis (CBA) modelling is being undertaken to determine if the benefits derived from the policy outweigh the costs imposed. A summary of the interim CBA approach and results is provided in Sections 0 and 3.2.

The impacts of the flexibility provision have been considered for the most prescriptive policy initiatives within the DP SEPP and its accompanying instruments. This includes build requirements in the ADG pertaining to apartment mix, storage requirements and natural ventilation and the UDG in relation to deep soil requirements and open space regulations.

Deloitte Access Economics assumes that while significant costs related to construction activity will reduce, the administrative and compliance burden on developers and government authorities will increase as a result of the flexibility provision. Although the proposed amendments to the DP SEPP maintain that variations to development standards should meet the objectives of the development standards, there is a small reduction (5%) in the full realisation of benefits associated with provisions related to build requirements and open space requirements as a result of the flexibility provision.

3.1 Costs and benefits included in the study

Table 3.1 and Table 3.2 below summarise the costs and benefits quantified in this analysis.

Table 3.1: Quantified cost categories considered in this analysis

Cost category	Description	Impact category
Higher administrative costs: design review	Additional number of dwellings (for LGAs who do not currently have a design review panel) to undergo design review panel and local council approval process	Build requirements / due diligence
Higher compliance costs (including indigenous engagement)	Additional cost to developer and regulators for complying with regulatory requirements, applied on a per precinct/large site project basis. Not applicable to approved master plans.	Build requirements / due diligence
Construction costs – (estimated from WT)	Higher construction costs from changes to the ADG quantified by WT estimates.	Build requirements / due diligence
Higher construction cost - design	Higher construction costs arising from energy efficiency improvements.	Environment - energy, water and emissions
Higher construction costs - greenspace	Higher construction cost from those initiatives that increase open space requirements and impose higher quality standards. Green infrastructure costs arising from additional tree requirements to improve urban design.	Environment - other
Higher construction costs - noise attenuation	Higher construction cost arising from noise attenuation measures applied to residential developments that are in centres located in the night-time economy.	Environment - other
Cost of public open spaces	Construction cost associated with providing private versus public open spaces to residents.	Environment - other
Cost of car parking	Construction cost change associated with changes to car parking requirements under option 3.	Build requirements / due diligence
Cost of EV car parking provision	Additional construction cost associated with infrastructure to provide 'EV ready' car parks.	Environment – energy, water and emissions

Source: Deloitte Access Economics

Table 3.2: Quantified benefit categories considered in this analysis

Benefit category	Description	Impact category
Realised reserve development capacity	Increased yield due to increase in density regulations	Build requirements / due diligence
Reduced developer risk	Reduce uncertainty in building requirements such that the developers can mitigate against unexpected costs/project contingencies during the approval process.	Build requirements / due diligence
Reduced build cost	Reduction in car parking requirements will reduce number of parks built – reducing construction costs.	Environment – energy, water and emissions
Reduced crime	Passive design requirements which seek to improve walkability and connectivity, help reduce crime.	Environment - other
Reduced urban heat island	Reduced urban heat island effect due to additional tree canopy and deep soil requirements.	Environment - other
Improved green space aesthetics	Aesthetic value of additional trees per dwelling on urban realm. This relates only to the aesthetic value of street trees in urban spaces.	Environment - other
Increased walkability and health benefits	Initiatives geared at improving walkability and connectivity will also serve health benefits for residents.	Mobility/Connectivity
Lower operational costs	Improvements to amenity as a result of increased energy efficiency – calculated as a premium for green buildings and associated lower operational costs. Considers the reduction in embodied carbon emissions.	Environment – energy, water and emissions
Reduced greenhouse gas emissions	Reduction in greenhouse gases due to a reduction in residential car spaces. Reduction in greenhouse gasses due to increased walkability.	Environment – energy, water and emissions
Improved social cohesion	Considers the mental health and social interaction benefits for residents from improvements to urban and apartment design.	Social and cultural considerations
Improved connection to place	Increased connection to place with reference to consideration for country and Indigenous engagement.	Social and cultural considerations
Improved private amenity	In comparison to other benefits, this particular benefit captures the impact of four amenity features considered in the study were access to outdoor open space (courtyard or balcony), orientation, cross-ventilation, and open views on apartment prices	Amenity
Energy efficiency benefits	Energy cost savings for residents resulting from additional guidance on energy efficient buildings.	Environment – energy, water and emissions

Source: Deloitte Access Economics

3.2 Cost benefit analysis results

Table 3.3 below outlines the results of the CBA in 2021-dollar net present value terms (NPV) and incremental to the base case. Over 30 years, **Option 2** returns an NPV of \$980 million across NSW and a benefit-cost ratio (BCR) of 1.42. The BCR of 1.42 means that for every dollar of costs imposed by the policy, 1.42 dollars of benefit are realised.

Table 3.3: CBA results for Option 2 (NPV \$2021 \$'000 – incremental to the base case) – whole of NSW

Cost-benefit analysis 2021 to 2052 (\$'000)	
Results are incremental to the base case	
	Option 2
Costs	
Total costs	2,347,546
Total benefits	3,327,481
NPV	979,935
BCR	1.42

Source: Deloitte Access Economics

Limitation of our work

General use restriction

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