ACT Government

Noise in the City Centre Entertainment Precinct

Regulatory Impact Statement

SL2024-17

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1. Introduction

The ACT Government has a vision for Canberra as a city where the night brings exciting opportunities for all Canberrans and visitors to connect, explore culture, work, and have fun. This vision is for a city after dark that is safe, easy to get around and accessible – where there is plenty to see and do, which is visible or easily found. A key part of this vision is for the talents and creativity of businesses, artists, and entrepreneurs to be readily showcased, valued, and supported.[i]

Canberra's city centre is the preeminent nightlife and music destination in the ACT and an identified hub of our night-time economy (NTE).[ii] The city centre plays a significant role in supporting Canberra's live music and entertainment ecosystem, contributing to Canberra's character, economic and cultural identity, and attractiveness for potential residents and tourists. In recognition of this, in November 2023, the ACT Government established the City Centre Entertainment Precinct (CCEP) through the new *Territory Plan*.[iii]

The *Territory Plan* identifies the CCEP as a hub of Canberra's NTE and aims to provide an iconic Canberra nightlife destination in a convenient and accessible location, with clear expectations around amenity for residents and protection of operations for entertainment venues. The *City Plan* identifies a priority direction for the CCEP to consolidate the nightlife character in the city centre to enable the continued growth of the night-time and visitor economy. Live music and entertainment businesses in the CCEP are a critical part of Canberra's NTE ecosystem and the character of Canberra's city centre. Live music and entertainment businesses are also integral to providing opportunities for local artists and are critical for developing Canberra's arts and live music industry, as well as Canberra's cultural identity in line with *Canberra: A Statement of Ambition for the Arts 2021-2026 (Strategy Three).*

However, as seen in other jurisdictions, appropriate Noise Zone Standards will ensure the long-term sustainability of the CCEP. Without them, new and existing residents and other noise sensitive occupants moving into the CCEP could be impacted, live entertainment and music stopped, and existing venues and businesses potentially lost.

Therefore, the ACT Government is investigating making amendments to the *Environmental Protection Regulation 2005* (EP Regulation) to introduce appropriate Noise Zone Standards for the CCEP. This will support and protect the existing businesses, encourage new businesses to establish in the precinct and grow the CCEP as the preeminent nightlife destination in Canberra.

As amending the Noise Zone Standards in the EP Regulation for the CCEP is likely to have an appreciable cost to certain stakeholders, a Regulatory Impact Statement (RIS) has been prepared.[iv]

By supporting the CCEP through fit for purpose Noise Zone Standards, the Government aims to grow and diversify Canberra's NTE, implement its vision for Canberra to be an arts destination, and for it to be an attractive place for people to live, visit and work.

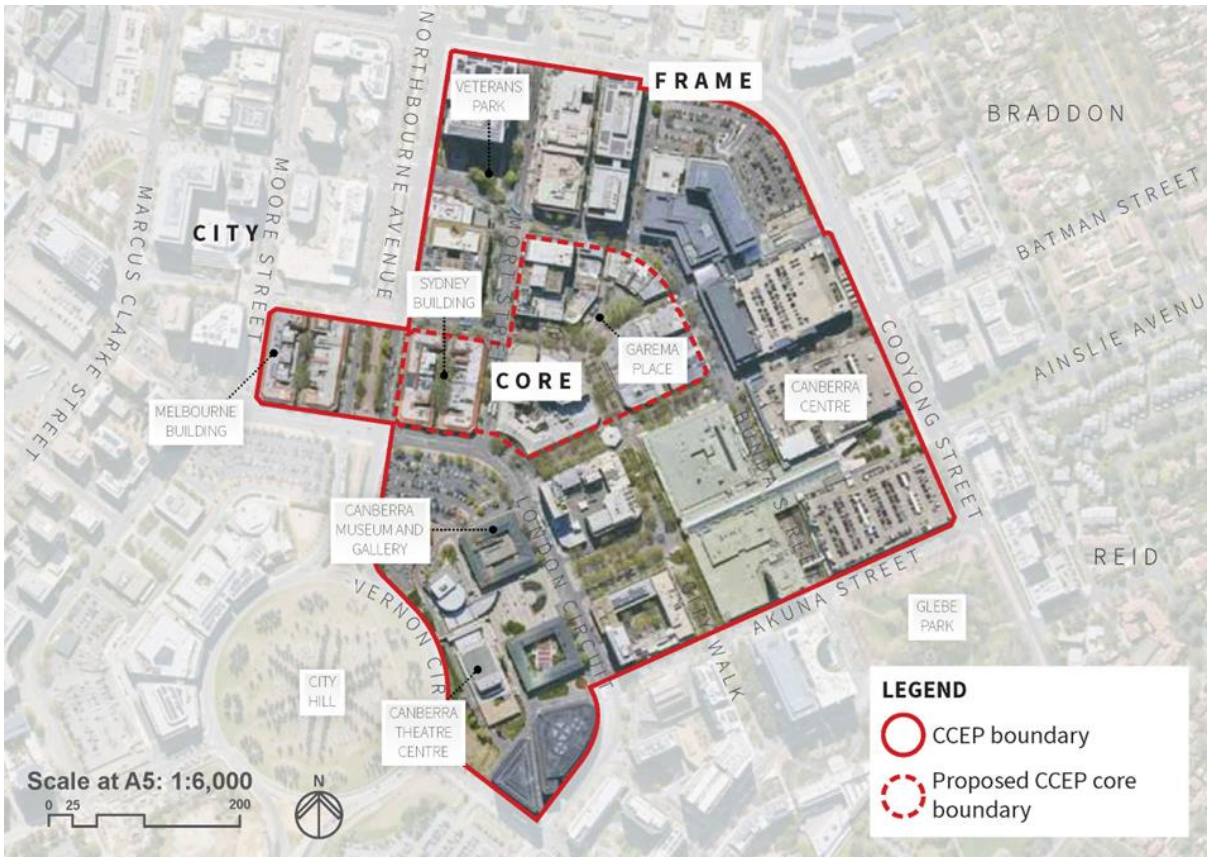
While the objectives for, and outcomes of the CCEP are set out in the *City Plan* and the *Territory Plan (Inner North and City District Policy)*, this work supports and reinforces other existing ACT

Government economic objectives including *CBR Switched On: Mission 3 - Knowledge Based Economic Growth* and the *ACT Tourism Strategy 2022-2030.*

2. Scope

This RIS relates to amending Noise Zone Standards in the EP Regulation for the CCEP. The CCEP is shown below in Figure 1.

Figure 1. City Centre Entertainment Precinct Core Boundary – defined Core, larger Frame



2.1 Core and Frame

The RIS addresses options for amending Noise Zone Standards for Core and Frame components of the CCEP. A Core and Frame in the CCEP enables higher Noise Zone Standards to be set to support:

- an existing cluster of noise emitting venues in the Core, while providing a graduation in the intensity of entertainment uses; and
- the character of an entertainment precinct that integrates with other commercial and residential uses in the city centre and adjacent land uses.

The Frame creates an opportunity for higher Noise Zone Standards to be set compared with other parts of the city centre, but not as high as the Core. The Frame supports entertainment uses while acting as a transitional zone between the Core and the areas adjacent to the CCEP.

Without a Core and Frame, the same Noise Zone Standards would apply across the entire CCEP.

3. Background

This section provides information about the CCEP's current environment and other matters to inform the Options Analysis. This includes:

- the objectives of the CCEP and its current characteristics and features;
- understanding sound and noise; and
- the current noise regulation, noise level and noise complaints within the CCEP.

3.1 City Centre Entertainment Precinct

3.1.1 Objectives

On 27 November 2023, the ACT Government established the City Centre Entertainment Precinct (CCEP) in the new *Territory Plan (Inner North and City District Policy)*.

The CCEP location was selected due to its capacity to meet the following aims and objectives:

- an iconic Canberra nightlife destination in a convenient and accessible location;
- provides a vibrant mix of uses, with an emphasis on entertainment and nightlife;
- provides a distinct, safe, and walkable precinct;
- accommodates organic growth of nightlife options; and
- entertainment, music, and nightlife options can be provided for everyone in diverse venues.

In following best practice from other jurisdictions around Australia (refer Appendix A), the ACT Government has established the CCEP to nurture and promote live entertainment and the NTE balanced with community needs.[v]

Through the *Planning (Inner North and City) District Strategy 2023*, and the *City Plan 2023*, the ACT Government set out its vision for the directions and planning outcomes for the city centre and CCEP to:

- ensure the area continues to be a lively and highly accessible precinct which remains the pre-eminent location for entertainment and night-time activities in the ACT;
- support live entertainment and nightlife, creating a 24-hour city centre; and
- support the expansion of existing retail and entertainment options in the city including art and culture, food and beverage, and retail shops.

While other areas of the city centre have a greater mixed use and residential focus, the ACT Government recognises the need to prioritise the cultural, commercial, entertainment and leisure uses in the precinct.[vi]

The ACT Government's vision for the area identifies the need for a careful approach to residential development to ensure that any future developments complement, and do not conflict with the ACT Government's vision. As a result, future residential development proposals in the precinct will need to consider and be built to a standard that accounts for the noisier environment in the CCEP, particularly regarding low frequency noise associated with amplified music. This approach will

provide assurance for residents, commercial, other occupants and entertainment providers and is consistent with other entertainment precincts in Australia.

Additional information is contained in Appendix B.

3.1.2 Current character and land uses

The CCEP contains a substantial proportion of Canberra's live music and entertainment venues that make it the preeminent destination for live music and entertainment in the ACT. There are a significant number of live music and entertainment venues in the CCEP, including bars, nightclubs, pubs, and live music venues in the Core and Frame. These venues are mostly concentrated within the CCEP Core. However, other significant concentrations can be found in the CCEP Frame, particularly around the Melbourne Building, and the Canberra Centre (refer Appendix C). Surrounding these venues are many cafes and restaurants, retailers, and other hospitality and entertainment services providers.

The CCEP Frame also includes key ACT Government cultural institutions including the Canberra Theatre Centre, Canberra Museum and Gallery (CMAG) and Civic Library. This area is subject to the City Renewal Authority's (CRA) Civic and Cultural District Concept that aims to transform public spaces into vibrant arts and cultural areas.[vii]

Within the CCEP Frame, there are several buildings containing noise sensitive uses including one residential building, hotels, community facilities and commercial office spaces. There are also several residential developments adjacent to the CCEP (refer Appendix C).

3.1.3 Future development

Future developments currently underway in the CCEP include:

- several new commercial buildings including commercial accommodation providers;
- several sites that have been sold or will be released for future mixed use commercial developments;
- the Canberra Theatre Centre expansion; and
- the CRA's proposed Canberra Civic and Cultural District concept which will guide future development and the revitalisation of the area around the Civic Square and Canberra Theatre Centre.

There is currently no specific plans to release land explicitly for residential uses or known proposals to construct residential buildings within the CCEP.

3.2 Understanding sound and noise

Sound level can be defined as a form of pressure due to air particle motion, which is detectable by our ears and measurable with devices. Noise can be defined as *unwanted* sound, or an unwanted

combination of sounds and represents a psychological phenomenon. Sound is most often described in terms of decibels (dB).[1] There are two distinct weightings for decibels mentioned in this RIS:

- **dB(A):** is the most used measure of sound and best indicates how humans hear a given sound. This weighting significantly discounts low frequencies. This means that sound pressure at low frequencies is perceived as "less loud" than an equivalent pressure at mid and high frequencies.
- **dB(C):** is a weighting which applies a significantly smaller correction to sound pressures at low frequencies and correlates better with the human response to high sound levels and so is often used in industrial or amplified music contexts.

Comparison of the two weightings can infer how much low frequency content is present in the measured sound. The comparison is suitable for assessing noise with low frequency prominence, such as music with prominent low frequency sound pressure levels (i.e. electronic dance music) expected to be found in an entertainment precinct. Typically, the greater the difference between dB(C) and dB(A) weighted sound pressure levels, the more prominent low frequency in the measured sound.

Below are examples of common sounds and their dB(A) equivalents at 1 metre from the source:[viii]

- Angle grinder: 100 dB(A)
- Food blender: 90 dB(A)
- Lawn mower: 70 dB(A)
- Vacuum cleaner: 60 dB(A)
- Washing machine: 50 dB(A)
- Leaves rustling: 30 dB(A)

Different styles of music have their own characteristics and subsequent impacts on surrounding potentially noise sensitive receivers. For example, rock bands and similar live acts generally play until midnight or 1am and require sound levels between 100 to 110 dB(A), while electronic dance music typically runs all night and into the morning with sound levels between 100 to 120dB(A) and have distinct low frequency characteristics.[ix]

3.2.1 Changes in noise levels

Noise has different impacts depending on the time a person is subjected to noise, how far away they are from the noise source, and by how much noise levels change.

In general terms, the subjective response of a person to a change in sound levels is:

- less than 3dB change – no perceptible change in noise level;
- change of 3dB – just perceptible change in noise level;
- change of 5dB – clearly perceptible change in noise level; and

[1] Decibels are a ratio of measured sound energy or pressure and a reference sound energy or pressure. It is based on a logarithmic rather than a linear scale. An increase of three decibels is a doubling of sound energy. For example, if one vacuum cleaner measured at one metre is 80 decibels, two vacuum cleaners, measured at the same distance, operating simultaneously would produce 83 decibels.

- change of 10dB – perceived as a doubling or halving of loudness.

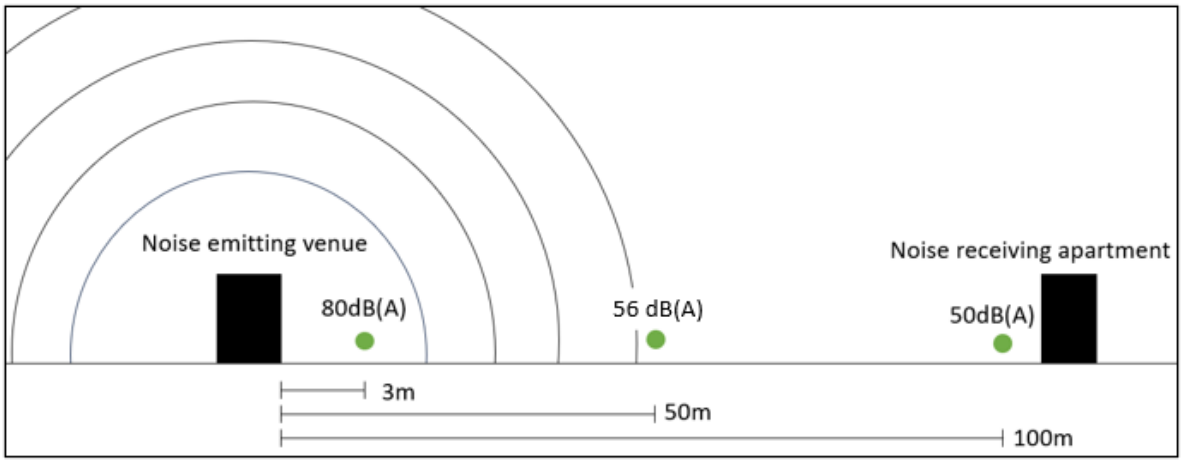
Different sound levels impact people differently over time. Additionally, someone listening to music at 75dB(A) for one hour would be exposed to the same amount of noise as someone listening to 72dB(A) for two hours.[2x]

As sound is emitted, it spreads from a source into the air, and its sound pressure level decreases as it travels further away from the source. According to the World Health Organisation (WHO), this is due to:

- the distribution of acoustic energy over a geometrically expanding area with increasing distance;
- sound absorption by the air;
- interference with the ground surface;
- physical barriers between noise sources and receivers; and/or
- meteorological factors such as wind, temperature gradients and humidity.[xi]

For every doubling of distance, noise from a relatively small source reduces by 6 decibels (dB), in part due to sound obeying the inverse square law as it spreads. An example of this effect is illustrated in Figure 2 where an apartment block 100 metres from a venue emitting 80dB(A) could experience noise levels of 50dB(A) from that source, if none of the points above applied (e.g. weather, barriers, ground surface, sound absorption and other factors). Note that the sound level inside the residential building would also rely on building envelope materials, whether the resident has their window closed, and other factors.[xii]

Figure 2. An example illustration of how noise travels over space, according to the inverse square law



This is for illustrative purposes only and does not reflect reverberation or reflection, meteorological factors, or the impacts of other surfaces. As such, this illustration may not accurately show how sound might travel over distance in a physical situation.

[2] A 3dB increase is equivalent to a doubling of sound energy, meaning that there is a halving of time required to be impacted by noise in the same way.

3.3 How noise is regulated

Most noise in the ACT is regulated under the *Environment Protection Act 1997* (the EP Act) and the EP Regulation. The EP Act and the EP Regulation do not regulate noise from light rail vehicles or other trains, Commonwealth jurisdiction aircrafts, a person using only the person's body, an animal, or a motor vehicle being driven on a road.

The object of the EP Act in relation to noise pollution is to prevent the risk of harm to human health. The largest health risk is the potential impact on sleep and annoyance levels (refer Section 8.3.3 and Appendix G for more information).

3.3.1 Current Noise Zone Standards

The ACT is divided into noise zones, specified in the EP Regulation, based on the zoning in the *Territory Plan*. Each noise zone has its own standards that apply for different hours and days of the week depending on the types of activities that are acceptable in each area (Noise Zone Standards). Noise zones and their respective Noise Zone Standards directly correspond to different planning uses, with higher Noise Zone Standards set for commercial or industrial zones and the lowest Noise Zone Standards set for residential areas. Noise Zone Standards are expressed in dB(A) L_{10} sound pressure levels (refer to Section 3.2) and set a threshold of acceptable noise within that zone.

The current Noise Zone Standards in the city centre (inclusive of the CCEP) are in Table 1 below.

Table 1. Current Noise Zone Standards for the City Centre Entertainment Precinct

Time and day period	**Noise Zone Standard**
Monday to Thursday, 7am – 10pm; Friday and Saturday, 7am - midnight; and Sunday and Public Holidays, 8am to 10pm.	60dB(A) L_{10}
Monday to Thursday, 10pm – 7am; Friday and Saturday, Midnight to 7 am; Sunday and Public Holidays, 10 pm to 8 am.	50 dB(A) L_{10}

A noise complaint may be lodged with the Environment Protection Authority (EPA) via Access Canberra by a person experiencing noise. If the sound pressure level is measured to exceed the Noise Zone Standard prescribed in the EP Regulation for that location, the EPA is able to take action. An affected person is the occupier of an affected place subjected to noise which exceeds the noise standard applying to that place.[xiii]The EPA can only act if an affected person lodges a complaint about the noise, consistent with the EP Regulation.

Entertainment precincts and other town centres may share a noise zone boundary with a lower noise zone than that of the entertainment precinct. It is important to consider the impacts of changing Noise Zone Standards on the surrounding, lower noise zones. The EP Regulation identifies that occupiers of land adjoining a boundary between two noise zones must allow for the different land use on the other side of the boundary. This is achieved by setting the standard at the boundary to the average, rounded up to the nearest dB(A) of standards applying to the two zones at the time the noise was emitted (Section 24(2)(c) of the EP Regulation).

3.3.2 Other measures to manage noise

Like elsewhere in the ACT, noise for licensed venues and other sites in the CCEP can be managed through Noise Management Plans (NMP) and Risk Assessment Management Plans (RAMPs). NMPs may be required under the *Territory Plan* and associated instruments, while RAMPs are a requirement of certain licensees under the *Liquor Act 2010* (not within the scope of this RIS).

A NMP is a document that demonstrates how environmental noise pollution will be managed for a particular site and any developments on that site; the NMP is a plan for how they will manage their noise.

An EPA-endorsed NMP is required as a condition of approval under the *Territory Plan* for certain land uses that are known to be noisy. A NMP must outline measures to prevent, minimise or control noise and vibration impacts. In relation to the CCEP, there are specific assessment outcomes described in the *Territory Plan* (described in Section 3.1) which encourage 24-hour activity and a lively precinct which may be drawn upon for NMPs being developed within the CCEP. The NMP must detail how a noisy use, like entertainment noise, will be managed, including building construction and noise attenuation to meet the Noise Zone Standards at the locations of nearby receivers. For residential developments in commercial areas, it must detail how it will be built to attenuate noise such that the Australian Standard for internal noise is not exceeded.

In addition to NMPs, RAMPs are another a document by which noise from a licensed venue can be regulated. A RAMP will contain several areas of risk management needed, including how noise from the premises will be mitigated.

3.3.3 Noise complaints process

The EPA manages the enforcement policy and process for investigating noise complaints. Before making a complaint, potential complainants are encouraged to try to resolve any issues through discussion with the person responsible for excessive noise. In relation to live music and entertainment noise complaints, the EPA will not investigate complaints related to patron or people noise, as this is not regulated under the EP Act or the EP Regulation.

3.4 Current noise levels in the City Centre Entertainment Precinct

In the context of sound pressure measurements, sound pressure levels are always presented in terms of a weighting and a statistical descriptor. Further information on the sound pressure levels used in this document can be found at Appendix F.

Between Thursday and Saturday, the predominant type of noise occurring in the CCEP is amplified entertainment noise and people noise.[3]

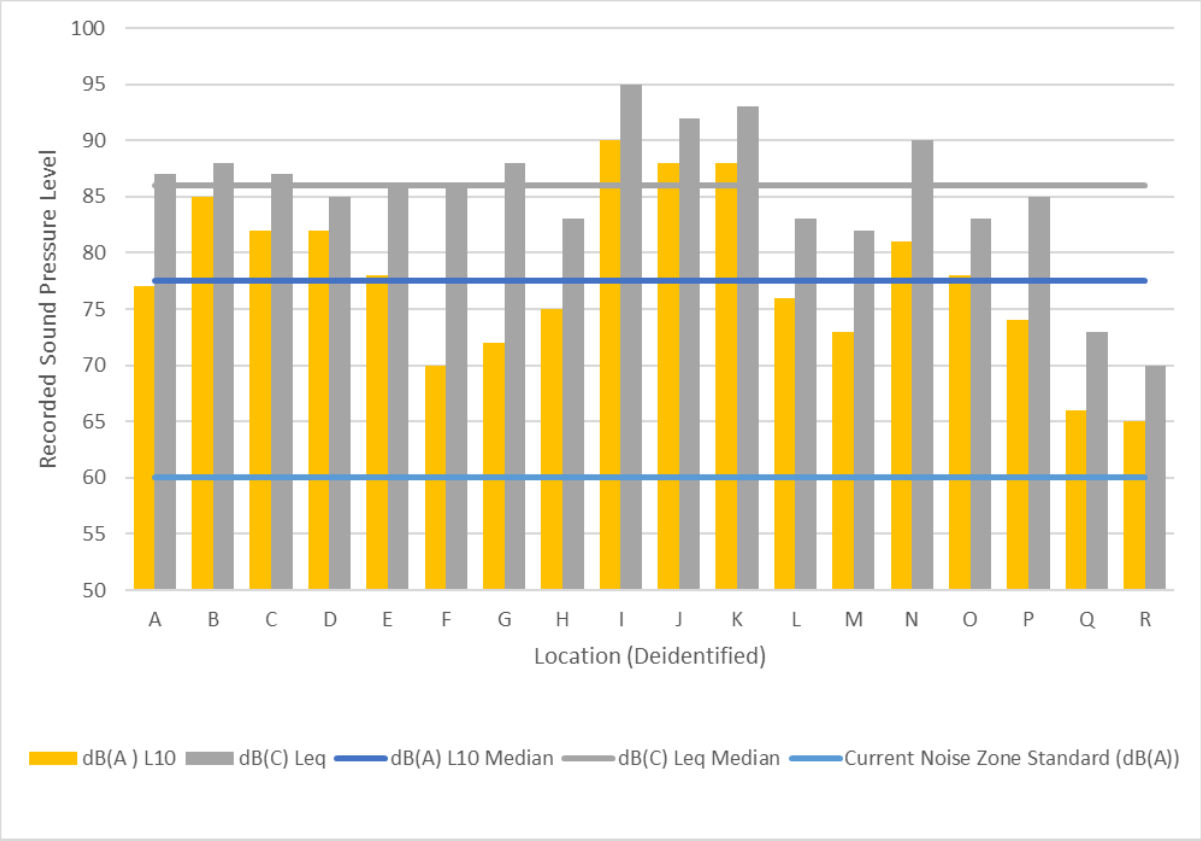
[3] Research from the CCCLM found that NTE businesses usually trade from 6-9pm, typically dropping off after 9pm except for Friday night, which is the day of the week with the highest number of core NTE-businesses open at night (9pm-12am). Only 7-10 percent of NTE businesses are open late at night (12am-3am) or in the early morning (3am-6am), depending on the day of the week.

Recent sound pressure level measurements generally indicate that noise levels in the CCEP are exceeding current Noise Zone Standards. This is based on three noise studies:

- in April 2016, noise measurements were taken at eight monitoring locations across the city centre covering two consecutive weekends from 10:00pm to 4:00am;
- between 9:58pm and 11:42pm on Thursday 23 March 2023, a survey on noise was carried out in the CCEP near existing noise emitting venues and in the public realm (refer Figure 3); and
- on Friday 9 June 2023, a limited noise survey was carried out in the CCEP between 8:30pm and 10:40pm outside existing noise emitting venues and in the public realm (refer Figure 4).

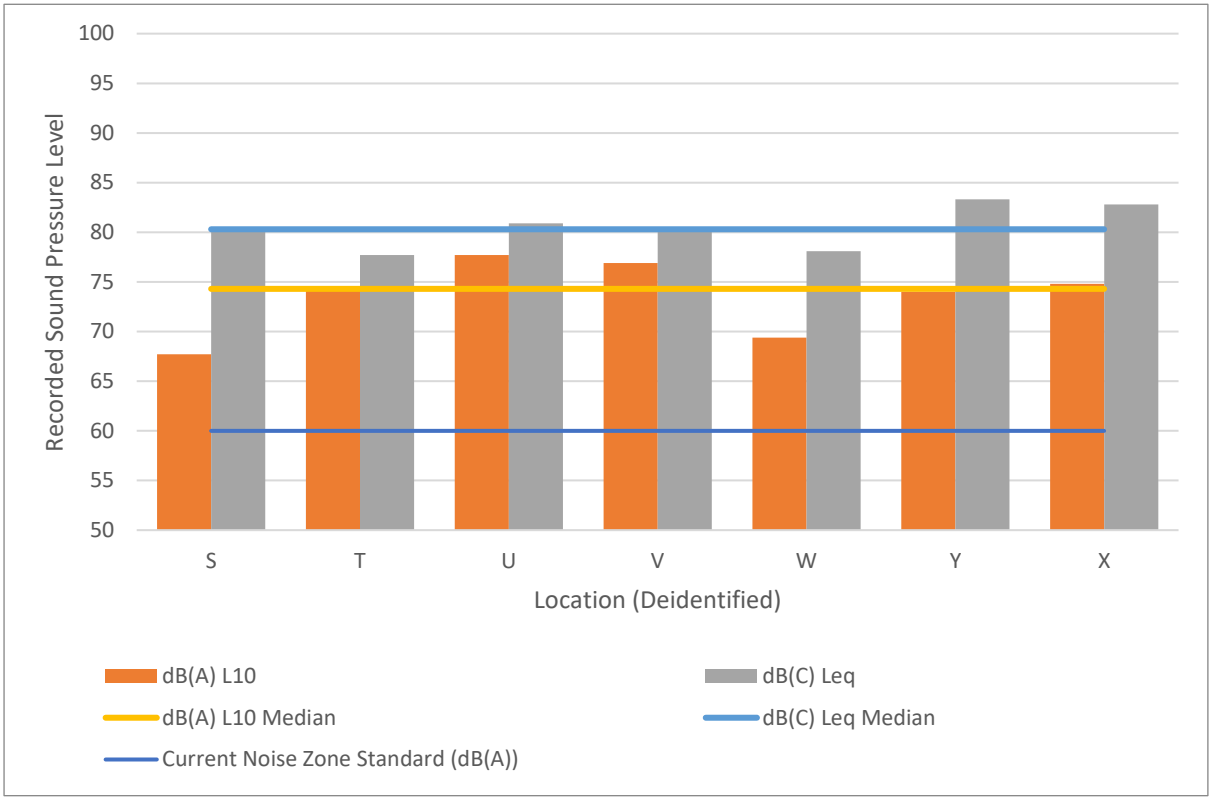
The median of all measurements taken was approximately 76 dB(A) L_{10} /86 dB(C) L_{eq} which is 16 dB(A) L_{10} higher than the Noise Zone Standard. The recordings were taken outside a variety of popular noise emitting venues within both the Core and Frame. Most of the noise emitting venues had outdoor loudspeakers and windows or a door open, and the measurements predominately captured patron/people noise and amplified music noise.[4] The measurements are summarised in the below figures.

Figure 3. Recorded noise levels in the City Centre – March 2023



[4] The dB(C) measurements in this section were taken in L_{Ceq}. This is different to the dB(C) measurement of L_{C10} used by EPA when taking noise measurements. As a result, this dB(C) measurement is likely lower than a recording by EPA would find.

Figure 4. Recorded noise levels in the City Centre – June 2023



Most sound pressure level measurements were taken in the Core as part of these investigations. However, measurements in the Frame consistently indicated levels that exceeded the Noise Zone Standards, with a comparative median of 73dB(A) L_{10} /78B(C) L_{eq}.

The sound pressure level measurements taken from 2016 and 2017 also indicate that noise levels in the CCEP are generally higher than the Noise Zone Standards during the day-night transition on all days. Noise from licensed venues is a key feature of noise exceeding the Noise Zone Standard on weekends. The measurements also indicate that sound pressure levels were lower in quieter areas outside of the CCEP, and generally consistent with the Noise Zone Standard. For example, the average sound pressure captured at 10pm near the Canberra Casino and City Walk (outside of the CCEP boundaries) was 50dB(A) L_{10}, with six measurements taken over Saturday 2 April and Friday 8 April, from 9:50pm to 11:53pm, measurements ranged from 47dB(A) L_{10} to 56dB(A) L_{10}.

3.5 Noise complaints in the City Centre Entertainment Precinct

Between 1 July 2019 and 28 April 2024, there were 145 noise complaints made in relation to noise generated in the CCEP. These complaints were made by residents, visitors, and businesses. These complaints were about construction noise, amplified noise, vehicles, garden work, people, and PA systems. The largest category of complaints was construction noise, with 66 complaints. The next largest is amplified noise, with 61 complaints.

In relation to the 145 amplified noise complaints made in relation to the CCEP:

- 32 complaints related to a noise emitting venue, e.g. bar, restaurant, nightclub, or live music venue in the CCEP. However, there were no associated infringements issued; and
- six amplified noise complaints came from the residential building within the CCEP. However, none of these complaints reference live music entertainment businesses. The complaints instead focused on noise from buskers or people playing amplified music or speech in the public realm.

Generally, noise complaints in the CCEP are lower than the surrounding areas, for example, there were 729 noise complaints for Braddon over the same 5-year period.

4. Problem statement and objectives

4.1 Why is the Government considering action?

Regulatory failure occurs because of enforcement and legal frameworks that are not delivering intended outcomes in the community's interest. The EP Regulation requires updating to align with the intended outcomes that have been set for the CCEP.

The establishment of the CCEP brings with it an expectation that external noise limits will be relaxed to facilitate more entertainment uses. As such, the *Territory Plan* establishes internal noise standards for guiding building requirements for residential development to attenuate noise in the CCEP. However, when arriving at building envelope sound insulation constructions, it is reasonable for developers to assume that the occupiers of surrounding land parcels will limit their noise generation in accordance with the Noise Zone Standards set out in the EP Regulation **at the time** development approval is sought. This means that building sound insulation design is irrespective of actual external noise levels occurring in practice, and of course does not need to respect any future regulatory changes that may make Noise Zone Standards more permissible.

As increasing a building's capacity to attenuate noise comes at a cost, there may be insufficient incentive for developers to improve the sound insulation of buildings proposed for the CCEP, beyond what is required through the *Territory Plan* and existing external Noise Zone Standards. This situation creates the risk that, without regulatory change, as the city grows, future buildings in the CCEP will not be sound insulated appropriately for the actual or expected noise levels occurring in the entertainment precinct. This will result in new residents and other noise sensitive occupants being impacted by noise, the potential for more complaints to the regulator, and potentially a situation where existing entertainment venues need to alter or cease their operation due to the encroachment of residential uses.

To date, there have been no amendments made to the EP Regulation to set external Noise Zone Standards for the CCEP that align with the existing acoustical environment of the precinct and that achieve the desired outcomes for the precinct as outlined in the *Territory Plan* and *City Plan*.

Under current regulations, the EPA must assess a complaint based on the current permissible Noise Zone Standards for the area, irrespective of the planning changes introduced through the new

Territory Plan, and the commitments made to the future character, and the economic and social goals of the CCEP.

As the current Noise Zone Standards are not sufficiently permissive to support entertainment uses and associated noise emissions, it is likely that existing entertainment businesses in the area will **be in breach should a complaint be made** from surrounding businesses or occupants of existing buildings in and around the CCEP (as discussed in Appendix E).

Therefore, amendments to the EP Regulation are required to set appropriate Noise Zone Standards for the CCEP to align it to previous planning changes made for the area to enable the successful protection and growth of entertainment businesses and the social and cultural activities they promote.

Experiences in other jurisdictions have demonstrated that regulatory change has been successful in supporting and growing live entertainment businesses and precincts. The establishment of the Fortitude Valley Special Entertainment Precinct positively impacted the local economy. The number of entertainment venues in the precinct grew from 35 in 2006 to 50 in 2019. The Fortitude Valley Special Entertainment Precinct is growing faster than the Brisbane economy and other key NTE hotspots in Brisbane.[xiv]

4.2 What are the consequences of inaction?

This section draws on experiences, both locally and beyond, to illustrate the likely consequences on entertainment businesses operating in the CCEP if regulatory action is not taken.

As seen around the world, as a city renews and grows, a key risk to live music and entertainment businesses, venues and precincts is the establishment of new residential developments (or other noise sensitive developments) that are not constructed with sufficient building envelope sound insulation for entertainment noise emissions, particularly those associated with live music venues.

As residents and other noise sensitive receivers move into an area and become affected by noise, long-established noise emitting businesses, who have previously operated beyond Noise Zone Standards without receiving noise complaints, endure the costs of responding to noise complaints and managing noise emissions. This is often expensive and non-viable, especially where the business is the commercial tenant and not the building owner. This could result in the cancellation or changing of live entertainment programming, a diversification into other business models/income sources including the reliance on gaming machines, or even the closure of the business.[xv] This has also led to the loss of historical venues in other jurisdictions.

The threat of venue closure due to new noise-sensitive developments has impacted business owners in other jurisdictions. Music ACT's 2015 Live Music Action Plan illustrates the impact on the viability of entertainment venues in these circumstances.[xvi]

Case Study: In Melbourne, the iconic Cherry Bar in ACDC laneway within the CBD came under threat from noise complaints when a 12-storey complex housing 189 apartments was developed nearby. The bar had been in operation since 1999 and had hosted international acts such as The Black Keys, The New York Dolls and Tom Morello. In 2014, noise complaints received from residents of the new apartments caused the venue to start a crowdfunding campaign to raise over $80,000 to cover the cost of soundproofing the venue. The campaign managed to raise $90,000 and the newly attenuated venue remained in its location until it moved in 2019.

Live music and entertainment venues are already struggling to remain viable due to the impacts of COVID-19, rising operational costs (particularly public liability insurance costs), and changing consumer spending. The Australasian Performing Rights Association and Australasian Mechanical Copyright Owners Society reported that as of 2023, the ACT has lost eight per cent of its live music venues compared to 2018.[xvii] Urbanisation poses a significant additional pressure on these venues.

Consequences of inaction in the CCEP

The live music, entertainment and other noise emitting businesses currently operating in the CCEP are particularly susceptible to the impact of urban renewal on ongoing viability.

Technical studies commissioned by the ACT Government (Refer section 3.2) indicate that noise emitting businesses are generating noise levels above the current Noise Zone Standards for this zone. This is possibly due to the low number of residential dwellings currently in CCEP.

The EP Regulation requires that there must be an *affected person* in an *affected place* to make a complaint for an offence to occur. At present, even if noise emissions from amplified music in the CCEP are higher than the Noise Zone Standard, they are unlikely to result in an affected person in an affected place because there is a very limited number of people residing within the CCEP.

However, as the city centre develops and densifies, the introduction of residential uses near existing noise emitting businesses may increase the prevalence of affected persons, potentially resulting in increased noise complaints.

To comply with the current Noise Zone Standards in the EP Regulation, if an affected person makes a complaint related to a noise emitting venue, the venue will need to either adjust its operations, make alterations to reduce its noise to compliant levels, or face the possibility of penalties under the EP Regulation.

While some venues may be able to readily adjust noise emissions, by controlling the use of external sound speakers or closing windows and doors, other venues in the CCEP may face challenges in reducing emissions, including that:

- a venue may not be able to reduce its noise emissions without impacting the type of music that can be programmed or impacting the audience's enjoyment (refer Section 7.2.1, Appendix G for indoor and outdoor noise level requirements); or
- it may not be feasible, or it may be financially prohibitive for the business to retrofit the premises to reduce noise emissions.

This is evidenced by investigations undertaken by the Brisbane City Council which found that:

> *Significantly increasing the noise attenuation at existing music venues is a complex problem (e.g. Installing additional noise attenuation may be easily achievable but the resulting fire safety and air-conditioning requirements may be very difficult and costly to achieve). Many of the existing venues are heritage listed, leased or would require major structural upgrades, which makes achieving significant noise attenuation very costly and, in many instances, not feasible. Forcing music venues to significantly increase noise insulation would likely result in the closure of many venues.*[xviii]

The building characteristics identified in the CCEP particularly the Melbourne and Sydney buildings, have characteristics like the buildings in Brisbane City.

Urbanisation and the City Centre Entertainment Precinct – new businesses

As urban renewal occurs, a regulatory environment that may result in land use conflict and increased noise complaints in the CCEP could reduce business confidence, making investment in live entertainment venues less appealing, and/or discourage existing or future venues from diversifying into live music and entertainment.[xix]

Case studies conducted by the South Australian Government concluded that costs associated with noise management, such as acoustic engineering reports, noise attenuation works, and building code compliance creates disincentives for existing venues to showcase music, and for the opening of new live music venues.[xx]

> In the ACT, development applications have been refused and restrictions imposed on community and commercial development due to the risks of live music and entertainment breaching Noise Zone Standards. This includes the Salthouse community centre in Haig Park, and the Old Canberra Inn at Lyneham.

4.2.1 Broader consequences of not changing Noise Zone Standards

If external Noise Zone Standards are not set at an appropriate level to protect, nurture, and grow the CCEP, this may have broader cultural, social, and economic impacts beyond live music and entertainment venues located or wishing to locate in the CCEP.

The following section explores the broader impacts of no changes to Noise Zone Standards for the CCEP.

Impact on Canberra's entertainment ecosystem

If small to medium entertainment and live music venues in the CCEP become unviable because of urban renewal and inappropriate Noise Zone Standards, this could reduce opportunities, development pathways, exposure and income for local artists and industry workers. This is because small to medium venues are a key component for a complex and thriving live music ecosystem, particularly to nurture new and emerging artists.[xxi]

The closure of these small to medium live entertainment venues because of the COVID-19 pandemic provides an insight into potential future consequences of a loss of small to medium live music venues on this sector:

> *Without this testing ground for emerging artists, an artist development gap is going to appear. One that could hold back the careers of the next generation of artists, affecting not just their live business but the entire spread of their careers – with clear implications for labels and publishers.*[xxii]

In addition to impacting the ability of local artists and industry workers to work, showcase their talents and build a career, a loss of venues will:

- result in a loss of employment opportunities for Canberrans working in the venues;
- impact revenues of accommodation, transport, retail, and local food and drink businesses, and Canberrans employed by them;
- reduce Canberran's access to a variety of local and touring acts; and
- lead to a loss of vibrancy and attractiveness of the city centre, which will impact Canberra's NTE and Canberra's attractiveness to visitors and immigrants.[xxiii]

4.3 What are the potential risks of Government action?

This section discusses the potential risks of amending the EP Regulation to increase Noise Zone Standards in the CCEP. It considers the impacts of increased noise on residents, property investors, workers, other businesses, and organisations living and operating in and on the border of the CCEP.

4.3.1 Residents living in existing buildings

As a result of living in the city, residents and visitors occupying buildings in and around the CCEP will be subject to environmental noise.[5] The level of impact will be influenced by the external Noise Zone Standards set out in the EP Regulation; the actual level of environmental noise they are being exposed to; their proximity to noise emitting businesses; the noise attenuation characteristics of the building they occupy; and their personal circumstances, tolerances, and expectations of noise levels.

In addition, noise being emitted from the CCEP can impact residents by reducing their ability to enjoy the full amenity of their residences, including use of private outdoor areas and balconies; and increasing their household running costs such as air conditioning if they choose to shut windows to reduce noise levels. Further information is available at Section 7.2.3 and Appendix G.

4.3.2 Property investors

Noise may also have an impact on investors who currently or will own property inside and on the border of the CCEP through changes to their property values and/or increased construction costs or property prices (refer to Section 7.2.4).

[5] Defined by the WHO as noise emitted from all sources except noise at the industrial workplace.

4.3.3 People working in the City Centre Entertainment Precinct

Noise can also have an impact on people working in the CCEP, particularly in buildings that are not appropriately attenuated for the external noise being generated. This could include employees of the noise emitting businesses and noise receiving businesses, including people working in office accommodation, commercial accommodation, surrounding food and drink establishments, retail businesses and other assorted businesses.

4.3.4 Impact on surrounding businesses

Noise emissions can also impact surrounding businesses (food and drink establishments; retail and other entertainment businesses); commercial offices and commercial accommodation providers. This can be through the impact of noise on the business' ability to operate effectively; the ability of staff to perform their duties effectively (as discussed above); and the business' reputation; as well as the ability to attract customers and provide services.

4.4 Objectives of the Regulatory Impact Statement

The objective of this RIS is to identify the best option to support the successful implementation of the CCEP and grow it as the continued focal point of Canberra's live music and entertainment scene, including to:

- protect, support, and grow the CCEP so that it is characterised by its night-time and entertainment economy, the leading uses of which are entertainment and leisure;
- protect, support, and grow live entertainment businesses in the precinct by creating greater clarity and certainty around land use and noise regulation;
- provide greater opportunities for artists and the entertainment industry; while also
- considering the health and wellbeing of residents and workers, and that the functioning of other businesses is not adversely impacted.

5. Community consultation

5.1 Noise in entertainment precincts consultation

The ACT Government released the *Noise in Entertainment Precincts Discussion Paper* (the Discussion Paper) and survey to seek feedback from the community about noise settings and Noise Zone Standards in the CCEP, amongst other areas, to inform this RIS (the consultation).[xxiv]

The survey received 417 responses from a range of stakeholders including community members, musicians, artists and entertainers, residents, and business owners or operators.

Overall, there was a positive response to amending the Noise Zone Standards in the entertainment precincts to boost the vibrancy of the NTE within the CCEP. The consultation found that most respondents (89 per cent) supported increasing Noise Zone Standards in the CCEP, with most of those respondents supporting the highest level of noise increases in the CCEP. Almost all stakeholders who identified as musicians, artists, entertainers, business owners, community members supported the increases. While most stakeholders identifying as residents (73 per cent)

supported noise increases, stakeholders who identified as owner occupiers were the least supportive of noise increases (32 per cent). Many respondents also supported including Thursday in weekend Noise Zone Standards.

A detailed consultation report (the Consultation Report) is at the YourSay NTE website.

5.2 Additional consultation

The ACT Government has undertaken significant consultation in relation to the future of the city centre, the proposed CCEP, noise levels for the CCEP and NTE including:

- Urban Sounds and Entertainment Consultation (2019); and
- Consultation on the Draft City Plan and City Centre Urban Design Guide (2023).

Feedback from these consultations indicated that Canberrans are supportive of increased noise and vibrancy in the CCEP and that they want more entertainment options in the city centre, including live music and other entertainment, and believe that noise regulations should be changed in the CCEP to support the NTE.

6. Policy options

The following section outlines the alternative options for decision makers to address the problem statement and RIS objectives. The options include:

Option One: Non regulatory option (Status Quo): Under the Status Quo, there would be no change to permissible Noise Zone Standards under the EP Regulation (Table 1) for the CCEP. In this scenario:

- Developers would only be required under law to consider the maximum allowable noise that can be generated under the current Noise Zone Standards for the CCEP (60 dB(A) L_{10}), which do not reflect currently observable levels of noise, when designing and constructing buildings in the CCEP.
- Existing noise emitting businesses would continue to generate currently observed noise levels (above the Noise Zone Standards) until an "affected person" makes a noise complaint to the EPA. At this point, to comply with the Noise Zone Standards, the business would be required to either change business practices and/or appropriately attenuate their premises at their cost (if possible, based on characteristics of the building).
- The ACT Government will be required to work within the current EP Regulation and the *Territory Plan* to manage the growth of the CCEP and if/when people move into the CCEP and are subjected to the current noise levels.

The Status Quo is the baseline for which the net impact of each alternative option will be assessed.

Option Two - Regulatory Option: Under Option Two, the EP Regulation would be amended to create new noise zones and standards for entertainment noise in the CCEP Core and CCEP Frame. The options are:

- **Option A:**
  - CCEP Core: Sunday to Wednesday, Public Holidays 10 am-11 pm; Thursday to Saturday 10 am-2 am; 65 dB(A) L_{10} 80 dB(C) L_{10}. All other times: 55 dB(A) L_{10} 70 dB(C) L_{10}
  - CCEP Frame: Sunday to Wednesday, Public Holidays 10 am-11 pm; Thursday to Saturday 10 am-2 am: 60 dB(A) L_{10} 75 dB(C) L_{10}. All other times: 50 dB(A) L_{10} 65 dB(C) L_{10}
- **Option B:**
  - CCEP Core: Sunday to Wednesday, Public Holidays 10 am-11 pm; Thursday to Saturday 10 am-1 am: 70 dB(A) L_{10} 85 dB(C) L_{10}. All other times: 60 dB(A) L_{10} 75 dB(C) L_{10}
  - CCEP Frame: Sunday to Wednesday, Public Holidays 10 am-11 pm; Thursday to Saturday 10 am-1 am: 65 dB(A) L_{10} 80 dB(C) L_{10}. All other times: 55 dB(A) L_{10} 70 dB(C) L_{10}
- **Option C:**
  - CCEP Core: Sunday to Wednesday, Public Holidays 10 am-11 pm; Thursday to Saturday 10 am-1 am: 75 dB(A) L_{10} 90 dB(C) L_{10}. All other times: 60 dB(A) L_{10} 75 dB(C) L_{10}
  - CCEP Frame: Sunday to Wednesday, Public Holidays 10 am-11 pm; Thursday to Saturday 10 am-1 am: 70 dB(A) L_{10} 85 dB(C) L_{10}. All other times 55 dB(A) L_{10} 70 dB(C) L_{10}

All the regulatory options include the removal of current practices for the regulation of dB(C) levels and include dB(C) levels as part of Noise Zone Standards within the EP Regulation for the CCEP. This is being introduced to support the delivery of sufficiently sound insulating buildings in the precinct and account for the higher level of low-frequency noise present in the CCEP. dB(C) ratings represent an appropriate rating to be used to assess noise associated with entertainment and amplified and live music in the CCEP, only when compared with dB(A) ratings.

The regulatory changes to the Noise Zone Standards for the CCEP would only apply to entertainment noise. Noise generated from other sources (such as mechanical plant noise or amplified music from the residential premises) would continue to be regulated under the current standards.

7 Options analysis

7.1 Approach to cost-benefit analysis

7.1.1 Approach to impact analysis

To provide a recommendation, each option has been assessed on its:

- net impacts for relevant stakeholders (Section 8.2);
- flow on economic impacts for the Territory (Section 8.3); and
- ability to deliver the ACT Government's relevant objectives, commitments, and policies (section 8.4).

Detailed assumptions and methodologies are presented in Appendix G.

7.2 Primary stakeholder impacts

This section explores the benefits or costs of regulatory change on the primary stakeholders and then compares the impacts for Options One and Options Two A, B and C. The primary stakeholders include:

- owners and employees of noise emitting businesses within the CCEP;
- owners and employees of noise receiving businesses;
- residents living in the CCEP and on its boundary;
- property investors within the CCEP and on its boundary;
- artists and industry workers;
- patrons of live entertainment; and
- the ACT Government in its capacity as noise regulator.

7.2.1 Owners and employees of noise emitting businesses

> *Owners and employees of current and future noise emitting businesses whose primary function or activity is the provision of entertainment (live music, cultural or other art performances) to members of the public.*

Benefits to existing noise emitting businesses

Amending the EP Regulation to increase the permissible Noise Zone Standards will enable existing noise emitting businesses to continue operating and programming live music as the CCEP develops and residents (and other noise sensitive receivers) move in. This will provide certainty for noise emitting businesses and provide benefits to business owners and their employees who derive an income from the business' operations.

This is particularly the case for those noise emitting businesses who are unable to retrofit their premises to reduce their sound emissions and meet the current Noise Zone Standards. This is due to a combination of factors including ownership of the premises, costs of attenuation works being prohibitively expensive, and the financial pressures from business disruptions related to undertaking the attenuation works. Additionally, for some businesses, even if they could and were willing to retrofit their premises, the characteristics of their building would mean that attenuation works were either infeasible or would not enable them to sufficiently reduce their emissions to be compliant with the current Noise Zone Standards.[xxv] This is evidenced by the type of buildings in which noise emitting businesses are operating, including the Sydney and Melbourne buildings,[6] and the Cinema Centre,[7] which were not designed specifically for current live music practices.

Noise emitting businesses that could improve the sound insulation of their venues (because the above limiting factors are not applicable) would benefit from avoiding potential attenuation costs if the Noise Zone Standards are increased. The actual cost savings for a noise emitting business would

[6] These were constructed progressively in 1926-7 and 1941-46 and heritage listed in 1997.
[7] This was constructed in 1965 and heritage listed in 2021.

be subject to the unique characteristics of each venue and business type. The range of estimated potential capital costs to be avoided are presented in Table 2 below, based on work undertaken by Brisbane City Council.

Table 2. Potential capital costs avoided by a noise emitting venue

	Status Quo	Option 2A	Option 2B	Option 2C
Low	$269,000	$185,000	$101,000	$17,000
Medium	$1,077,000	$741,000	$404,000	$67,000
High	$1,885,379	$1,296,000	$707,000	$118,000

In addition to avoiding the potential capital costs above, noise emitting business owners and employees would also benefit from avoiding revenue and income losses that would result from temporarily changing programming or closing their business to undertake such noise attenuation works.

Noise emitting businesses may also benefit from reducing the likelihood and related costs of engaging in a noise complaint regulatory process. Engaging with the regulatory process can be time consuming and complex. It can impact business owners and their employees even if they are not found to be in breach of the EP Regulation. This is due to:

- disruptions to, and diversion of attention away from, their ordinary business activities and leisure time (either through time imposts or mental wellbeing);
- financial costs incurred in responding to the regulatory process including any legal or other professional costs, any regulatory fees associated with the process, and any forgone revenue due to disruptions to ordinary business operations; and/or
- impacts on their wellbeing caused by the uncertainty that surrounds the outcome of a complaints process and possible implications for their business or jobs.

The benefit for noise emitting businesses is subject to the level at which each regulatory option enables new buildings to be built to a standard that sufficiently protects residents and other sensitive receivers from the current external noise levels occurring in the CCEP. It also depends on how each regulatory option enables noise emitting businesses in existing buildings to continue operating and programming live music to current levels. This would enable them to avoid the need to change business practices and programming, and/or the costs of retrofitting improved building sound insulation.

Through the consultation, people who identified as business owners indicated that the current Noise Zone Standards are overly restrictive. Seven businesses identified that they find it difficult to adhere to current Noise Zone Standards, commonly citing that existing Noise Zone Standards are too low.

Incentivising new and existing businesses to diversify late night offerings and increase programming of live music and entertainment

Amending the EP Regulation in the CCEP provides further benefit by encouraging new businesses to start and existing noise receiving businesses to invest or diversify into programming live music and entertainment. This is because:

- fit for purpose regulation will provide certainty in the medium to long term for financial investments;
- establishment costs and barriers to entry will be reduced (refer Table 2 above); and
- increased flexibility to program live music and entertainment events supports investment logic.

Increasing the number of businesses and diversifying night-time offerings will also provide increased employment opportunities.

This is evidenced by the impacts of the establishment of the Fortitude Valley Entertainment Precinct in Brisbane, Queensland. The precinct's establishment saw an increase in the number of venues from 35 in 2006 to 50 in 2019.[xiii] Further research from the Queensland University of Technology found that regulatory certainty encouraged investment in the precinct, with new nightclubs, bars, and pubs opening, and existing venues expanding, as it enabled businesses to expand the number of hours that they can generate revenue from their venue.[xxvi] Locally, the ACT Government has heard through the Night-time Economy Consultations that businesses would like to host live music, or add outdoor dining, but they are restricted by current Noise Zone Standards. Amending the Noise Zone Standards to reduce these restrictions will respond to these concerns.

7.2.2 Noise receiving businesses - owners and employees

Owners and employees of other CCEP businesses whose primary function is not the provision of live entertainment.

These businesses located in the city centre will benefit from amendments to the EP Regulation to increase Noise Zone Standards through increased economic activity generated by increased visitor spending, tourist stays, and numbers of Canberrans living and working in the city centre:

- **Increasing visitor spending:** As live events are vehicles to attract people to a location, protecting and growing the number of noise emitting venues in the CCEP and increasing the amount of live entertainment will encourage more Canberrans and tourists to visit the city centre and spend money in the surrounding businesses (i.e. going out for dinner or a drink and/or shopping prior to the event). An area with a diverse number of entertainment options collocated is also likely to keep visitors in the area and engaging with surrounding businesses longer.
- **Increased tourist stays**: Increasing the attractiveness of the city centre as a place to stay will support local accommodation providers through increased regional, interstate, and international tourists stays.
- **Increased number of Canberrans living and working in the city centre**: Increasing the attractiveness of the city centre as a place to live and work will increase the number of people choosing to do so. A growing local population will increase spending on local retail, hospitality, and entertainment businesses.

In addition to benefiting business owners, Canberrans working in the precinct will be protected from unemployment and underemployment, which would occur if visitation and spending in the city were to fall. In addition, with increased economic activity in the area, the number of Canberrans employed by businesses in the CCEP, and surrounding city centre, will increase.

The flow on benefits to business owners and employees is demonstrated by the experiences of the Fortitude Valley Entertainment Precinct. Brisbane City Council officials noted that in 2017, Fortitude Valley experienced the greatest annual growth of three NTE hotspots in Brisbane, boasting a seven per cent increase in establishments, a five per cent increase in employment, and a nine per cent increase in revenues.

Additionally, owners and employees of noise receiving businesses operating in future constructed buildings will benefit from avoided exposure to external environmental noise if buildings are appropriately attenuated. This includes reduced business disruptions, increased amenity for customers, and increased employee productivity and wellbeing.

However, there may be a cost to noise receiving businesses operating in existing buildings, or outside, if the noise levels they are exposed to increase beyond the levels they currently experience.

Increased noise levels can lower employee productivity from increased distraction, speech disruption and annoyance. Adverse health effects may occur if employees are exposed to noise levels which exceed ACT WHS requirements.[xxvii] Under the *Work Health and Safety Act 2011*, the *Work Health and Safety Regulations 2011* sets the exposure standard for noise at 85 dB(A)[8] with a peak noise level of 140 dB(C).[9] This will protect most, but not all people. The *Managing Noise and Preventing hearing Loss at Work Code of Practice October 2018* outlines the exposure levels that a worker can be exposed to for different durations that will comply with the legislation.

Increased noise levels can also impact business owners through:

- impact on a business' ability to operate as effectively; or
- potentially reduce customer satisfaction with their engagement with a business and manifest as shorter visit durations, or outright avoiding businesses impacted by noise.

[8] $L_{Aeq,8h}$ means the eight-hour equivalent continuous A-weighted sound pressure level in decibels (dB(A)) referenced to 20 micro pascals; determined in accordance with AS/Noise Zone Standards 1269.1–2005: Occupational noise management—Measurement and assessment of noise emission and exposure.
[9] $L_{C, peak}$ which means the C-weighted peak sound pressure level in decibels (dB(C)) referenced to 20 micro pascals, determined in accordance with AS/NZS 1269.1:2005: Occupational noise management—Measurement and assessment of noise emission and exposure.

7.2.3 Residents living in the City Centre Entertainment Precinct and on its boundary

> *Residents of existing dwellings located within the CCEP and on its boundary which have been built and acoustically attenuated to the current or previous Noise Zone Standard for the city centre (refer to Appendix G)*.[10]

Amending the EP Regulation will change the external environmental noise impacting residents occupying existing buildings in the CCEP and on its boundary.[11] These changes could impact on the health and wellbeing of these residents.

Research has found a causal relationship between external noise and sleep disruptions and increased annoyance levels.[xxviii] Studies have also found that prolonged and continuous exposure to noise can increase a persons' risk of high blood pressure and ischaemic heart disease.[xxix] This is subject to caveats, due to the difficulty in undertaking research on this topic and limited numbers of research papers. Additionally, the research has focused primarily on the impacts of traffic, rail, and aeroplane noise, with no available research on the impacts of entertainment noise on residents in Australia. Notwithstanding these caveats, the research indicates that environmental noise is more than a nuisance and is a concern for public health.

Noise is likely to have greater impacts on vulnerable members of Canberra's population, living in or around the CCEP. This includes people with certain diseases or medical problems, people in hospital or rehabilitating at home, people dealing with complex cognitive tasks, those who have a visual or hearing impairment, babies and children, and the elderly. In its submission to the Discussion Paper, the ACT Blind Society advised the ACT Government that a louder noise environment has the potential to mask the sound of motor vehicles, especially electric vehicles and bicycles, creating a more challenging and hazardous environment for blind or low-vision pedestrians.

Existing residents living in the CCEP and on its boundary are already experiencing higher noise levels than is allowable under the current EP Regulation. Therefore, the level to which the EP Regulation changes will impact on existing residents depends on the net change to noise levels and characteristics, and/or how late noise is permissible.

The residential building located within the CCEP Frame will be impacted by options which create changes to the environmental noise impacting them beyond current conditions. Residents living in apartments located on the boundary of the CCEP may also be impacted where options create changes to the environmental noise impacting them. Whether they are impacted, and the severity of impact, will depend on the proximity of their buildings to the noise emitting businesses and the location of their apartments within the buildings (see Section 3.2).

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[10] It is assumed that these buildings will not be noise attenuated to meet changed Noise Zone Standards for the CCEP.

[11] As future buildings will be required to noise attenuate against the EP Regulation in existence, it is assumed that only occupants of existing buildings may be impacted by amending the EP regulations.

The WHO's *Burden of Disease Statistical Analysis* has been used to quantify the potential cost of noise on impacted residents. Using the Value of a Statistical Life Year, the per annum cost impact on residents living in the CCEP would range from $0, to $122,000[12] under the WHO Low impact, and $217,000 under the WHO Central impact (refer Appendix G.2.1). Further, a scenario analysis was undertaken to determine the quantum of impact if additional residents in buildings surrounding the frame were to be impacted by noise. The range of impacts can be seen in Table 3 below:

Table 3. Scenario testing impacts of noise on residents in existing buildings

	No Impact	WHO Low impact	WHO Central Impact
CCEP Population	$0	$122,056	$217,476
CCEP Plus 100 impacted persons	$0	$193,853	$345,403
CCEP Plus 200 impacted persons	$0	$265,651	$473,330
CCEP Plus 400 impacted persons	$0	$409,246	$729,185

The potential impacts on residents will be influenced by business operations including opening hours,[13] [xxx] when and what type of live music and entertainment they program, and the external noise levels they generate. It will also be influenced by each resident's individual circumstances, expectations, and tolerances for external noise levels.

The variability of noise impacts on residents is reflected in the feedback provided to the Discussion Paper. Of the respondents who self-identified as residents of the CCEP, just over half (54 per cent) indicated that they were not impacted by current noise. However, some residents specifically identified that noise impacts their ability to sleep, and that changing the Noise Zone Standards would have the potential for negative impacts on them.

In addition to the potential health and wellbeing impacts, amending the EP Regulation could also impact resident privacy and their ability to enjoy the full amenity of their properties. The amendments could impact the internal comfort level of their premises and energy usage as residents choose to keep windows or balcony doors closed in response to the external noise environment.

However, the wellbeing of all residents living in new and existing buildings in the CCEP and on its boundary will benefit by living in an increasingly lively and attractive entertainment precinct. Through the consultation, and feedback to prior consultation (refer to Section 5) indications are that residents support measures to increase entertainment offerings and improve vibrancy in the CCEP. Most of the residents who responded to the discussion paper (73 per cent) supported amending the Noise Zone Standards to increase the area's vibrancy as they see value in improving its entertainment offerings and the vibrancy of the city centre. However, it should be noted that the level of support differed based on whether residents owned or did not own property. Owner-

[12] Note this quantum is the total impact on all residents in the CCEP and is not the net change.

[13] Research from the Council of Capital City Lord Mayors found that NTE businesses usually trade from 6-9pm, typically dropping off after 9pm except for Friday night, which is the day of the week with the highest number of Core NTE-businesses open at night (9pm-12am). Only 7-10 percent of NTE businesses are open late at night (12am-3am) or in the early morning (3am-6am), depending on the day of the week.

occupiers signalled significantly lower levels of support than residents who do not own property (32 per cent support compared with 84 per cent support, respectively).

7.2.4 Property investors

Investors who own or will own residential and commercial properties within or on the boundary of the CCEP, including owner occupiers. Investors will be impacted by the proposed increases to Noise Zone Standards on the property's construction costs. Further, the changes to noise levels and flow on impacts to the vibrancy and attractiveness of the CCEP will influence property values and rental yields in the area. The types of investors are broken into categories by property type:

- *Investors who own an existing property.*
- *Investors who will own a property currently being constructed, seeking development approval, or will seek development approval prior to a change in the Noise Zone Standard.*
- *Investors who will seek development approval and construct a building after a decision on the Noise Zone Standard is made.*

Existing properties

A property's overall value can depend on its condition, its location and proximity to amenities like a city centre, urban transport, schools, retail, entertainment, and environmental externalities like noise intrusion. The perceived or actual external noise levels and noise attenuation measures of the property can positively or adversely impact a residential property's value. However, the actual impact of amending the EP Regulation will depend on several other interrelated factors, including its proximity to a lively, vibrant, and diverse city centre which may mitigate, offset, or increase residential property value due to increased demand to live in the precinct.

Unlike residential property owners, for most commercial property owners, their investments are unlikely to be substantially impacted by changes to noise on occupants. Instead, their property values will be aligned to the impact that amending Noise Zone Standards has on the demand of business to establish or relocate into the CCEP. If the changes increase the number of businesses wishing to establish or relocate in the city, their property values will increase.

Future buildings

Investors wising to construct a building or purchase a yet to be built property in the CCEP[14] will be impacted through increased construction costs (developer owners[15]) or property prices (purchasers from another party). The *Territory Plan* requires buildings in the CCEP to be acoustically attenuated to meet the Noise Zone Standards outlined in the EP Regulation. Increasing the sound insulation of a building requires a change to its design, materials and/or construction methods. This could include replacing window glazing, using high-mass concrete elements, and/or constructing enclosed winter gardens instead of open balconies. If on-selling, a developer will either pass on these costs to

[14] Buildings outside the CCEP are not required to noise attenuate for changed Noise Zone Standards in the CCEP.

[15] i.e. a developer who constructs an office building to lease out or a hotel developer who will own the hotel.

purchasers or change their building design or features to offset the increased attenuation costs. For the purposes of this report, it has been assumed that costs are on passed to purchasers. Table 4 below summarises the estimated change to construction costs for residential and commercial developments for each option (refer Appendix G.2.3 for more information).

Table 4. Net change to construction cost requirements - assumes no change to building yield (number of apartments) for residential buildings

Options	Residential building (Per cent Change)	Commercial building (Per cent Change)
2A	+2.60	+1.96
2B	+3.08	-0.49
2C	+3.08	-2.49

While investors could be required to pay a higher price, or bear a higher construction cost, it is likely they will benefit from increased property values. This is due to properties being appropriately attenuated to actual noise levels and being located close to all the amenities that a vibrant entertainment precinct offers. Research indicates a positive relationship between foot traffic and commercial land prices.[xxxi]

Further, the construction methods and materials required to attenuate a building for sound also act as a thermal insulator[16] which increases comfort, energy efficiency, and reduces running costs. This will benefit owner occupiers who live or work in the buildings and will increase the value of new properties in the CCEP.

Developments on foot

Investors who are in the planning approval stage or are constructing buildings in the CCEP will be impacted by a change to the EP Regulation. Although these investors are not required to modify their plans to align to a change in the Noise Zone Standards,[17] a change to the regulations may impact them through:

- increased construction costs if they choose to amend their designs to align to the new Noise Zone Standards; and
- impacts on the future values of the properties (as above) if they are being designed to noise attenuate against the current Noise Zone Standards.

However, as outlined, investors of new or existing buildings will benefit from their properties being located within the CCEP and the subsequent positive flow on impacts to property values.

[16] Acoustic insulation can help retain a building interior's temperature against changes in the outside temperature, reducing the need for cooling during summer and heating during winter.
[17] If submitted prior to 28 November 2023, an applicant is not required to meet the current *Territory Plan* requirements.

7.2.8 Artists and industry workers

Artists and industry workers include musicians, entertainers, performers, composers, sound engineers and producers working (in the CCEP) and other people in the live entertainment industry.

Ninety-six per cent of the musicians, artists and entertainers that responded to the Consultation supported increasing Noise Zone Standards to the highest possible level, attributing their support to bringing the CCEP in line with other entertainment precincts across Australia and the need to support Canberra's nightlife.

Protecting existing noise emitting businesses and encouraging new businesses to program live music and entertainment will directly benefit these stakeholders by:

- protecting and promoting employment opportunities in the live entertainment industry. Currently there are approximately 4,000 workers employed in the Arts and Recreation Services industry, including approximately 2,100 on a full-time basis; and 1,000 live music employees (approximately 0.35 per cent of the ACT's entire labour force);[xxxii]
- incubating, exposing, and providing a training ground for emerging artists and industry workers to learn their trade and become experts in their field. Artists, particularly in the early stages of their careers, are reliant on the opportunities generated by local venues, such as the ones located in the CCEP to showcase their works to audiences and build a following that they can then leverage into success at the national and international level; and
- nurturing a vibrant and diverse cluster of venues in the CCEP will also attract touring artists resulting in increased opportunities for local artists, as support acts, and industry workers to gain income and exposure.

7.2.9 Patrons of live music and entertainment

Any person who attends a live music and/or entertainment performance.

Patrons of live music and entertainment, both local and visiting, will also benefit from the proposed changes to the EP Regulation through increased access to a greater diversity of live entertainment offering in the CCEP. Data shows Canberrans regularly attend live music events. Live Performance Australia's 2022 Ticket Attendance and Revenue Report shows that Canberrans spent approximately $33 million on nearly 400,000 tickets for live performances.[xxxiii] Attendance at events was up 87 per cent from 2021 and only down eight per cent from 2019, demonstrating that in 2022, Canberrans were attending live performances at almost pre-COVID levels. In the same year, Canberrans spent $71.74 per person on live performance events. The data shows that ACT was in the top three jurisdictions nationally for revenue and attendance at live performance events that year. Moreover, patrons who access live entertainment benefit from improved health and wellbeing, greater feelings of connection, happiness, and enjoyment because of attending live performance.[xxxiv]

Increasing the availability of live music and entertainment events for Canberrans will positively impact their quality of life as it enables Canberrans to express their identity and connect to their communities. This is acknowledged in the ACT Government's Wellbeing Framework. In 2022, 85 per cent of Canberrans indicated that they valued the significant positive impact of the arts, and 61 per

cent considered it had a ‘big’ or ‘very big’ impact on their sense of wellbeing and happiness. In addition, 73 per cent of Canberrans agreed that ‘cultural and creative experiences make for a richer and more meaningful life’, 65 per cent considered the arts had an impact on their understanding of other people and cultures, and 51 per cent considered it had an impact on shaping and expressing Australian identity.

Over 90 per cent of businesses, musicians, artists, entertainers and interested community members who responded to the Consultation were supportive of increased Noise Zone Standards in the CCEP. Supportive responses centred around the desire for a lively and vibrant CCEP with a rich program of events and activities. Respondents emphasised the importance of fostering an environment conducive to increased social engagement and cultural vibrancy. The importance of more permissible Noise Zone Standards to support the live music industry, and the flow on benefits to artists and entertainers from protecting live music and entertainment venues, was central to these endorsements.

7.2.10 ACT Government

There will be an administrative cost to the ACT Government to implement any change to the EP Regulation. However, establishing an appropriate regulatory environment that supports growth in the CCEP and protects future noise sensitive receivers living in the area from external noise will reduce the administrative burden on the ACT Government over time. This is because appropriately attenuated new buildings will reduce the number of potential noise complaints. If no change is made, due to the existing nature of the CCEP and the characteristics of existing noise emitting businesses, noise complaints are likely to become more complex and time consuming to resolve (refer Appendix E for more details on noise complaint processes).

7.2.11 Net impacts of options on stakeholders

Table 5. Net impacts on stakeholders of considered options

	Option One (Status Quo) impacts	Net impact against Status Quo (Option one)		
		Option 2A	Option 2B	Option 2C

Noise emitting business owners and employees	**Under the Status Quo there would be:**
	• Uncertainty for future operations as sensitive receivers move into CCEP.
	  ○ Financial feasibility of business impacted.
	• Increased chance of engaging with regulator – including impacts of dealing with regulator, including:
	  ○ Financial costs
	  ○ Wellbeing impacts on business owners and employees
	• If business can't comply with regulations, businesses may remove live music programming, change business operations, noise attenuate where able, and/or elect to close.
	  ○ Cost and revenue impacts related to retrofitting building sound insulation improvements and reduced programming.
	  ○ Outdoor entertainment may be limited or stopped.
	  ○ Risk of staff unemployment or underemployment.
	• Lost opportunities to divest/grow existing business.
	• Reduced opportunity for investors to start up a new business due to barriers to entry.
		Net cost due to:
		• Regulatory certainty for business but would need to undertake large changes to continue operating as sensitive receivers move into CCEP.
		• Chances of engaging with regulator, and associated impacts, remain like Status Quo as Noise Zone Standards will be well below current external noise levels.
		• If businesses can't comply with regulations, businesses may remove live music programming, change business operations, noise attenuate where able, and/or elect to close.
		  ○ Cost and revenue impacts related to retrofitting building sound insulation improvements and reduced programming.
		  ○ Outdoor entertainment may be limited or stopped.
		  ○ Risk of staff unemployment or underemployment.
		• Slight increased opportunities to divest/grow existing business.
		• Slightly increased opportunity for investors to start up a new business due to barriers to entry.
			Net benefit due to:
			• Regulatory certainty for business but would need to undertake some changes to business operations as sensitive receivers move into CCEP.
			• Chances of engaging with regulator reduced relative to Status Quo and Option 2A. This is because Noise Zone Standards will be closer to current external noise levels, and it will be more likely that businesses can comply with the standard without undertaking extensive noise attenuation or changes to their business operations and programming.
			  ○ Reduced cost and revenue impacts related to undertaking building sound insulation improvements, where able, and impacts on programming relative to Status Quo and Option 2A.
			• Some opportunity for existing businesses to
				Net benefit due to:
				• Regulatory certainty for business to continue operating without change to business operations as sensitive receivers move into CCEP.
				• Least likely to engage with regulator in relation to noise complaints and non-compliance.
				• No need to retrofit building sound insulation improvements to comply with Noise Zone Standards.
				  ○ Avoided cost and revenue impacts related to retrofitting building sound insulation improvements.
				• Greatest opportunity for existing businesses to diversify and grow their existing offerings.
				• Greatest incentive for new businesses to establish in the CCEP.

	Option One (Status Quo) impacts	Net impact against Status Quo (Option one)		
		Option 2A	Option 2B	Option 2C
			diversify and grow their existing offerings. • Some incentive for new businesses to establish in the CCEP.	
Noise receiving business owners and employees	**Under the Status Quo there would be:** • Reduced business income and employment opportunities resulting from reduced visitation and spending. • For hotels, reduction of tourist stays as entertainment precinct not as lively and diverse. • Reduced net impact of noise on businesses and their employees with reduced noise levels from currently experienced levels (if new sensitive receivers force existing noise emitting businesses to reduce noise emissions to meet current Noise Zone Standards).	**Slight net cost due to:** • Slightly reduced business income and employment opportunities resulting from reduced visitation and spending. • For hotels, slightly reduced tourist stays as entertainment precinct not as lively and diverse. • Slightly reduced net impact of noise on businesses and their employees with reduced noise levels from currently experienced levels (if new sensitive receivers force existing noise emitting businesses to reduce noise emissions to meet current Noise Zone Standards).	**Net Benefit due to:** • Increase business income and employment opportunities resulting from increased visitation and spending as entertainment precinct is lively and diverse. • For hotels, increased tourist stays as entertainment precinct lively and diverse. • Consistent level of net impact of noise on businesses and their employees with existing external noise environment which is above current Noise Zone Standards (averaging 76dB(A)). Noting areas of the CCEP Frame experience lower levels of noise.	**Neutral to Net Benefit:** • Slightly larger net impact of noise on businesses and their employees associated with a change to the CCEP Frame Noise Zone Standards. • Increase business income and employment opportunities resulting from increased visitation and spending as entertainment precinct is lively and diverse. • For hotels, increased tourist stays as entertainment precinct lively and diverse.
Residents of existing buildings[18]	**Under the Status Quo there would be:** • Reduced net impact on health, wellbeing and amenity outcomes associated with reduced noise levels from currently experienced levels (if new sensitive receivers force existing noise	**Neutral due to:** • Slightly reduced net impact on health, wellbeing and amenity outcomes associated with reduced noise levels (if new sensitive receivers force existing noise emitting	**Neutral due to:** • Consistent level of net impact on health, wellbeing and amenity outcomes associated with existing	**Net cost due to:** • Slightly larger net impact on health, wellbeing and amenity outcomes associated with a

[18] Refer to Section 3.2, which outlines currently recorded noise levels in the CCEP.

	Option One (Status Quo) impacts	Net impact against Status Quo (Option one)		
		Option 2A	Option 2B	Option 2C
	emitting businesses to reduce noise emissions to meet current Noise Zone Standards). • Reduced local amenity as entertainment precinct not as lively and diverse.	businesses to reduce noise emissions to meet current Noise Zone Standards). • Based on proposed change to 2am Thursday to Sunday rather than midnight, there may be some health and wellbeing impacts for residents if businesses operate and program live music later than what is currently occurring.[19] • Slightly reduced local amenity as entertainment precinct not as lively and diverse.	external noise environment which is above current Noise Zone Standards (averaging 76dB(A)). Noting areas of the CCEP Frame experience lower levels of noise. • Local amenity retained as entertainment precinct is lively and diverse.	change to the CCEP Frame Noise Zone Standards. • Most likely to have an impact on apartments which border and face the CCEP Frame. • Possible privacy and amenity impacts. • Increased local amenity from a more lively and diverse entertainment precinct.
Property investors – existing buildings	**Under the Status Quo there would be:** • Potential negative impact on owners of existing commercial properties that are used by noise emitting businesses. This is due to potential land conflicts and uncertainty causing existing tenants to move away and potential difficulties in finding new tenants. • No impact on owners of existing residential properties.	**Neutral to net cost due to:** • Same as Status Quo.	**Neutral to net benefit due to:** • Potential positive impact on owners of existing commercial properties containing noise emitting businesses. This is due to increased certainty and reduced land use conflict encouraging existing tenants to remain and/or new tenants to move into the CCEP. • No impact on owners of existing residential properties.	**Neutral due to:** • Positive impact on owners of existing commercial properties containing noise emitting businesses. This is due to increased certainty and further reduced land use conflict encouraging existing tenants to remain and/or new tenants to move into the CCEP. • Net impact on owners of existing residential properties will depend on market's views on noise impacts outweighing benefits of a more vibrant and diverse precinct.

[19] How businesses are currently operating.

	Option One (Status Quo) impacts	Net impact against Status Quo (Option one)		
		Option 2A	Option 2B	Option 2C
Property investors – developments on foot	**Under the Status Quo there would be:** • No impact on live developments.	**Neutral to net cost due to:** • Should the developer choose to amend their plans to meet changed Noise Zone Standards, there would be a change in construction cost as compared to the Status Quo.	**Neutral to net cost due to:** • Should the developer choose to amend their plans to meet changed Noise Zone Standards, there would be a change in construction cost as compared to the Status Quo. • Development will benefit from being in a vibrant and diverse entertainment precinct.	**Neutral to net cost due to:** • Should the developer choose to amend their plans to meet changed Noise Zone Standards, there would be a change in construction cost as compared to the Status Quo. • Development will benefit from being in a vibrant and diverse entertainment precinct.
Property investors – new buildings	**Under the Status Quo there would be:** • No change to construction costs for new developments. • Reduced attractiveness of CCEP for new investors to build new or purchase existing commercial properties.	**Net cost due to:** • Increased construction costs to residential developments by an estimated 2.60 per cent • Increased construction costs of commercial (office) buildings by an estimated 1.96 per cent • Reduced attractiveness of CCEP for new investors to build new properties.	**Net cost due to:** • Increased construction costs to residential developments by an estimated 3.08 per cent • Reduced construction costs of commercial (office) buildings by an estimated 0.49 percent. There may be impacts on visual attractiveness from alternative design decisions. • Increased attractiveness of CCEP for new investors to build new residential and commercial properties. • A more attenuated building addressing external noise environment will have positive impacts on property value.	**Net cost to neutral due to:** • Increased construction costs to residential developments by an estimated 3.08 percent (same as option 2B) • Reduced construction costs of commercial (office) buildings by an estimated 2.49 percent. Depending on alternative design choices there may be impacts on visual attractiveness. • Increased attractiveness of CCEP for new investors to build new residential and commercial properties. • Appropriately attenuated building addressing external noise environment will have positive impacts on property value.

	Option One (Status Quo) impacts	Net impact against Status Quo (Option one)		
		Option 2A	**Option 2B**	**Option 2C**
Artists and Industry Workers	**Under the Status Quo there would be:** • Potential for reduced development opportunities and income if noise emitting venues close or reduce/stop programming (if new sensitive receivers force existing noise emitting businesses to attenuate noise or reduce noise emission to meet current Noise Zone Standards).	**Net cost due to:** • Marginal change to Noise Zone Standards would have limited impact on noise emitting businesses programming decisions.	**Neutral to net benefit due to:** • Consistent level of development opportunities and income as regulatory settings enable a lively and diverse entertainment precinct where existing businesses diversify and grow existing offerings and new businesses establish.	**Net benefit due to:** • Greatest level of development opportunities and income as regulatory settings enable a lively and diverse entertainment precinct where existing businesses diversify and grow existing offerings and new businesses establish.
Patrons of live music	**Under the Status Quo there would be:** • Potential for reduced access to live music if noise emitting venues close or reduce/stop programming.	**Net cost due to:** • Marginal change to Noise Zone Standards would have limited impact on noise emitting businesses programming decisions.	**Neutral to net benefit due to:** • Consistent level of access to live music as regulatory settings enable a lively and diverse entertainment precinct where existing businesses diversify and grow existing offerings and new businesses establish.	**Net benefit due to:** • Greatest level of access to live music as regulatory settings enable a lively and diverse entertainment precinct where existing businesses diversify and grow existing offerings and new businesses establish.
ACT Government – noise regulation	**Under the Status Quo there would be:** • No cost associated with amending the EP Regulation. • Increased administrative costs if new noise sensitive receivers move in and conflict arises	**Net cost due to:** • Increased administrative costs if new noise sensitive receivers move in and conflict arises.	**Net benefit due to:** • Administrative cost largely avoided due to reduced conflict between new noise receivers and noise emitters reduced or avoided.	**Net benefit due to:** • Reduced administrative costs as conflict between new noise receivers and noise emitters avoided (as compared to option 2B).
Summary	**Overall net cost as Noise Zone Standards are significantly lower than current noise levels which would impact ongoing viability of businesses in the CCEP.**	**Overall net cost as the Noise Zone Standards would be set at a level much lower than current noise levels.**	**Overall neutral to net benefit as the Noise Zone Standards set at CCEP Frame level but lower than noise levels being produced in CCEP Core.**	**Overall net benefit to stakeholders. However, there will be a net cost to residents living in existing buildings due to the proposed Noise Zone Standards for the CCEP Frame.**

7.3 Flow-on economic benefits

In addition to the impacts on key stakeholders, the proposed amendments to the EP Regulation will also have consequential impacts for Canberra's broader economy through supporting and growing the CCEP and Canberra's NTE.

Increasing access to, and consumption of, live music and entertainment, has a flow on effect on the broader economy through increased spending, business activity and job growth. A study undertaken by the Live Music Office/University of Tasmania in 2014 found that for every dollar spent on live music in the ACT, four dollars of economic benefits were returned to Canberra.[xxxvi] This is due to additional spending by people that complements live music and entertainment including transport, food and beverages, retail, and accommodation, as well as increased demand for intermediate goods and services from supply businesses such as food and drink manufacturers and wholesalers. Overall revenue in the ACT from live performance ticket sales in 2022 was $33,063,416. Based on University of Tasmania analysis, the live ticket revenues would account for approximately $132 million in net economic benefits for the 2022 year.[20] In addition to core NTE businesses, local businesses that supply products (like wholesale food and drinks) and provide support services will be positively impacted by the increased business activity arising from a change to the EP Regulation.

A key component of the economic impacts discussed above is the attraction of regional,[21] interstate and international tourists. The proposed EP Regulation reforms will attract tourists through increasing availability of live entertainment in the ACT. Tourism Research Australia (TRA) data shows investment in music and cultural events has one of the greatest impacts in increasing regional visitation. Music is one of the highest value events that can drive overnight trips and provide a competitive advantage to regional areas. For the year ending December 2023, the ACT received approximately 3.3 million domestic overnight visitors, who spent approximately $2.6 billion – an average spend of approximately $788 per visitor.[xxxv] There were also 227,000 domestic overnight tourists who engaged in a live music event in some format. Additionally, by supporting the city centre to become more lively, diverse, and attractive, Canberra's reputation as a destination will be improved.

Finally, the EP Regulation reforms will create an attractive city to encourage people to move and live and work in Canberra, with flow on benefits for the ACT economy.

7.4 Alignment to the objectives for the precinct and broader Canberra

The level to which EP Regulation amendments enable future buildings to be appropriately noise-attenuated; support existing and future live music and entertainment venues; and influence investment decisions will dictate how the CCEP will grow and change in the future. As a result, it will impact the ACT Government's delivery of its vision and objectives for the CCEP's as outlined in Section 1 and 3.1. Table 6

[20] Note that this includes economic benefits discussed in section 8.2.
[21] Note Canberra is a key major centre in the Southern NSW region.

outlines the impacts of each option on the future character of the CCEP and the Government's vision and objectives.

Table 6. Aims and objectives, benefits, and character of CCEP to be realised through EP Regulation changes

Option	Status Quo	Option 2A	Option 2B	Option 2C
CCEP aims and objectives	Aims and objectives unlikely to be fully realised	Aims and objectives unlikely to be fully realised	Aims and objectives would be realised	Aims and objectives would be realised
Future CCEP Land Use Character	The current character of the CCEP would be impacted and vibrancy lost if new noise sensitive developments occur. Would have a mix of uses but entertainment and nightlife would not be emphasised. CCEP could become more mixed residential use area with a focus on residential like Braddon (Lonsdale Street). Most likely to cause future land conflicts between new residential and other noise sensitive receivers and noise emitting businesses.	Unlikely to change from Status Quo.	CCEP character would remain as it currently is, with a vibrant mix of uses, predominantly entertainment and commercial uses. Would support CCEP continuing to be a Canberra nightlife destination in a convenient and accessible location. May discourage residential development in CCEP Core. Residential developments could occur in CCEP Frame.	CCEP character would emphasise commercial, entertainment and nightlife. Would ensure the CCEP is a hub of Canberra's NTE and provides an iconic Canberra nightlife destination. May discourage residential development occurring in CCEP.

8.3.2 Alignment to broader ACT Government policies and commitment

Depending on the option chosen, having fit for purpose regulatory settings will also help achieve the Government's vision for the NTE, including increasing the diversity of venues and experiences available to Canberrans, supporting current and future small businesses, artists, musicians, and event holders to succeed.

By amending the regulations to support the availably of live music and entertainment and the vibrancy and attractiveness of Canberra, the city's reputation as the arts capital of Australia and a global destination that attracts tourists will support the following Government commitments and strategies:

- *Better Regulation Agenda – Night-Time Economy Review;*
- *Canberra: A Statement of Ambition for the Arts, Strategy Three;*
- *CBR Switched On: Mission 3. Knowledge Based Economic Growth; and*
- *the T2030: ACT Tourism Strategy 2023-30*.

The amendments will also support the *Entertainment, Arts and Sport Infrastructure Plan*. The ACT's ambition is for Canberra to be recognised as Australia's emerging cultural, arts and entertainment hub. A city that hosts more top-tier theatre, musicals, and concerts. Infrastructure will support a vibrant, growing arts and cultural sector for the ACT, generating economic impacts through increased tourism, while ensuring Canberra continues to be one of the most attractive and liveable cities in the world. The Canberra Theatre Redevelopment includes construction of a new 2000 seat theatre building and a refurbishment of

the Playhouse and Canberra Centre. This investment will help the ACT attract larger touring performances, musicals, contemporary music, and theatre. The project is essential to the city's performing arts future and a key driver for the tourism, hospitality, and accommodation sectors.

The amendments will also align to the work being undertaken by the CRA to transform the city centre through its *City Precinct Renewal Program* that is working to transform the city centre including its work to transform the Civic and Cultural precinct that contains the Canberra Theatre Centre and Civic arts facilities and to encourage night activation in the city centre. However, increasing Noise Zone Standards and the impacts on future building requirements may impact its future land release program.

8. Recommendation and implementation

Based on the analysis contained in Sections 7.1 through 7.4, it is recommended that the EP Regulation is amended to reflect option 2C for the CCEP Core and 2B for the CCEP Frame so that:

- CCEP Core:
  Sunday to Wednesday, Public Holidays 10 am-11 pm; Thursday to Saturday 10 am-1 am: 75 dB(A) L_{10} and 90 dB(C) L_{10}.
  All other times: 60 dB(A) L_{10} 75 dB(C) L_{10}
- CCEP Frame:
  Sunday to Wednesday and Public Holidays 10 am-11 pm; Thursday to Saturday 10 am-1 am: 65 dB(A) L_{10} and 80 dB(C) L_{10}.
  All other times 55 dB(A) L_{10} and 70 dB(C) L_{10}

This will provide the greatest benefit to the key stakeholders while avoiding appreciable changes to the existing noise environment impacting residents living in existing buildings within, or on the boundary of, the CCEP. It should be noted that this recommendation will impact future construction costs and potentially impact building design in the CCEP. However, there are likely to be commensurate positive impacts to investors and people living or working in the CCEP through increases to property values, and wellbeing, resulting from the avoidance of the negative impacts of external noise and increased property amenity. Residents and workers will also benefit from living, working, or conducting businesses in a more lively and diverse entertainment precinct.

This recommendation addresses the feedback provided by the Canberra community to the proposed changes outlined in the Discussion Paper and other consultation on the future of Canberra's city centre. It enables the CCEP to grow and develop in line with the ACT Government's directions and objectives, and the community's expectations for the protection, nurturing and growth of the CCEP and its character. It also aligns and supports the ACT Government's vision for Canberra's NTE and other key economic, social and wellbeing objectives.

If the ACT Government chooses to implement this recommendation, it would be achieved by amending the EP Regulation to introduce the new Noise Zone Standards for the CCEP Core and CCEP Frame. In addition, where appropriate, subordinate documents like the Noise Management Manual and EPA processes would need to be aligned to the EP Regulation changes. A communications campaign would also be undertaken to support key stakeholder understanding of the changes and the potential impacts.

Appendices

Appendix A – Other entertainment precincts in Australia

What is an entertainment precinct?

An entertainment precinct is an area identified through planning and other regulatory controls where existing and future nightlife character and activities, including live music, are prioritised and supported. These precincts give greater certainty to the community, businesses, residents, the NTE industry and building owners.

While residential and other noise sensitive uses are not prohibited in entertainment precincts in the ACT, future residential development proposals in them need to consider a higher noise environment, particularly regarding low frequency noise from entertainment venues. This approach is consistent with other entertainment precincts in Australia.

The ACT Government has introduced a City Centre Entertainment Precinct in the new *Territory Plan*, which came in to effect on 27 November 2023. This will make setting up an entertainment business, or diversifying entertainment business activity, more appealing in these precincts.

Overview of Australian entertainment precincts

Similar entertainment precincts have been established, or are being established, across Australia. Key examples include:

- Fortitude Valley, Brisbane, QLD
- Southport Special Entertainment Precinct, Gold Coast, QLD
- Enmore Road, Sydney, NSW
- Northbridge, Perth, WA (proposed)

Brisbane City Council designated a Special Entertainment Precinct in Fortitude Valley in 2006 to provide a clear planning pathway to support amplified music. This was the first entertainment precinct to be established in Australia, and possibly the world. It establishes local law requirements including an Amplified Music Venue Permit as part of a broader aim to ensure the long-term future of the music-based entertainment industry in the Valley without exposing residents or businesses to unreasonable levels of amplified music noise.

The Southport Special Entertainment Precinct, Gold Coast, QLD regulates amplified music venues to protect indoor residential amenity while supporting a live music hub. A licence is required for businesses within the core area of the Southport Special Entertainment Precinct where amplified music is a key element of their business and emissions of amplified music exceeding 65 dB L_{Ceq}.

Enmore Road in Sydney, NSW was permanently designated a Special Entertainment Precinct in 2023 following two trial periods. A Special Entertainment Precinct is a defined area where noise, including amplified music and patron noise regulated through the NSW liquor licensing framework, is instead managed by the Inner West Council through its Special Entertainment Precinct Management Plan. As such, any requirements for amplified music noise that would normally be regulated under the *Liquor Act 2007* (NSW) does not apply, including any noise-related conditions.

The Northbridge Special Entertainment Precinct was announced as an initiative to enable reforms to be progressed that provide certainty for entertainment venues and enhanced protections for new residential development in entertainment precincts. This initiative is still in development and as such is subject to future government consideration and amendment. These reforms are aimed at balancing the competing needs of entertainment venues, other businesses, and residents.

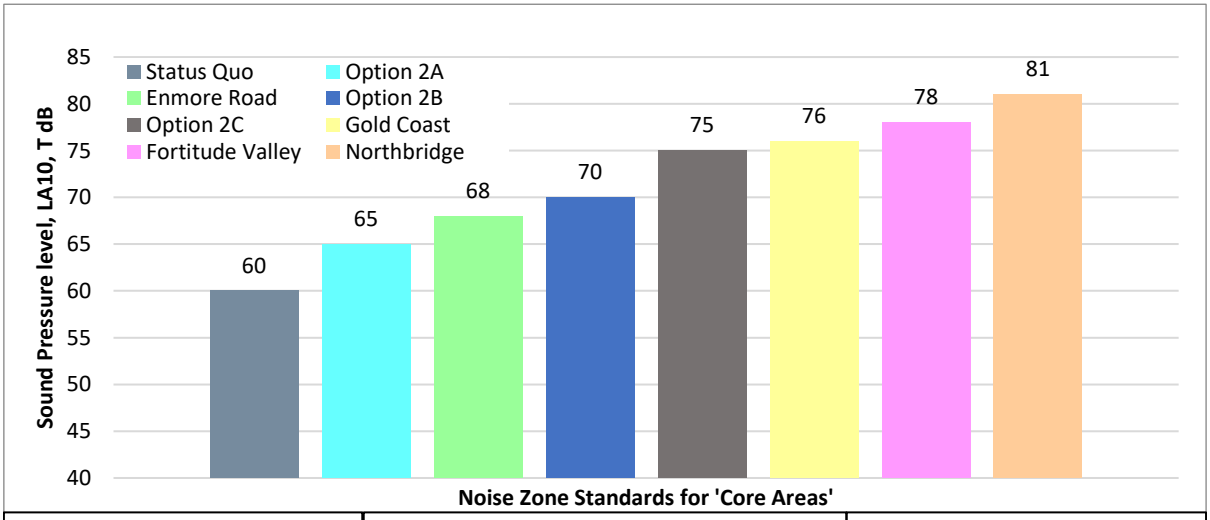
Across these entertainment precincts, planning requirements for habitable rooms in noise receiving developments are broadly similar.

Distinct from the ACT, regulatory changes in other jurisdictions have shifted the regulatory responsibility for noise from licensed premises from state to local governments to streamline and simplify noise management. However, this is not relevant to the ACT as we do not have multiple tiers of government. Additionally, unlike the ACT, none of these areas had existing Noise Zone Standards that applied to generators of noise. Instead, the standards were developed based on the noise from current, often well-established, entertainment venues.

Comparison of decibel limits in Australian entertainment precincts

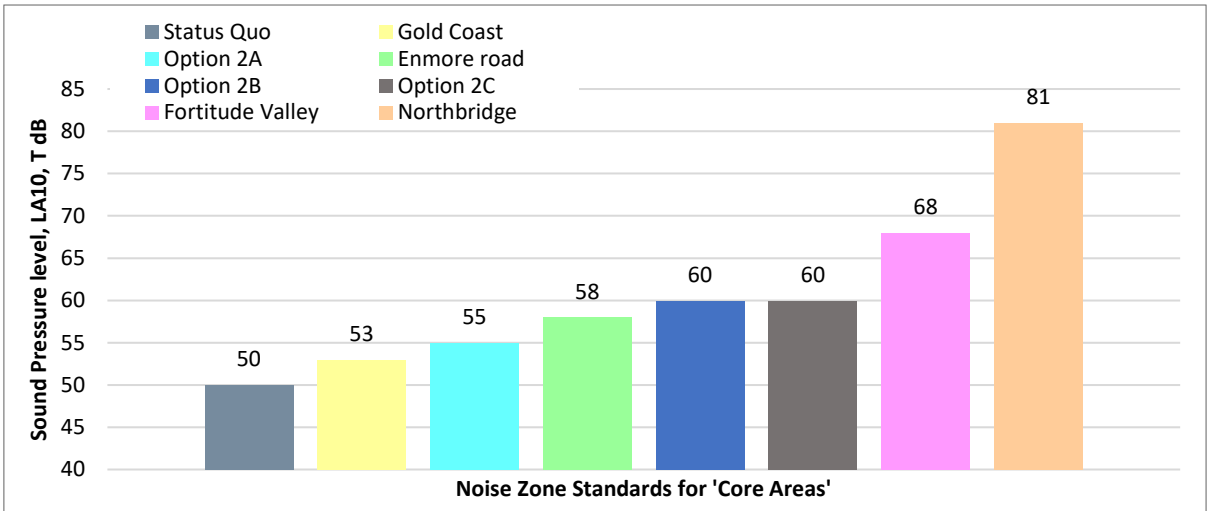
Figures 1 through 4 give a comparison of decibel limits across Australian entertainment precincts. They include the low medium and high options for the City Centre Entertainment Precinct as described in Table 3. These Figures are to be read in conjunction with the notes below. They are a graphical representation of interstate noise policies, subject to assumptions and limitations.

Figure 1. Comparison of dB(A) criteria in entertainment precinct core areas, including options for the City Centre Entertainment Precinct.



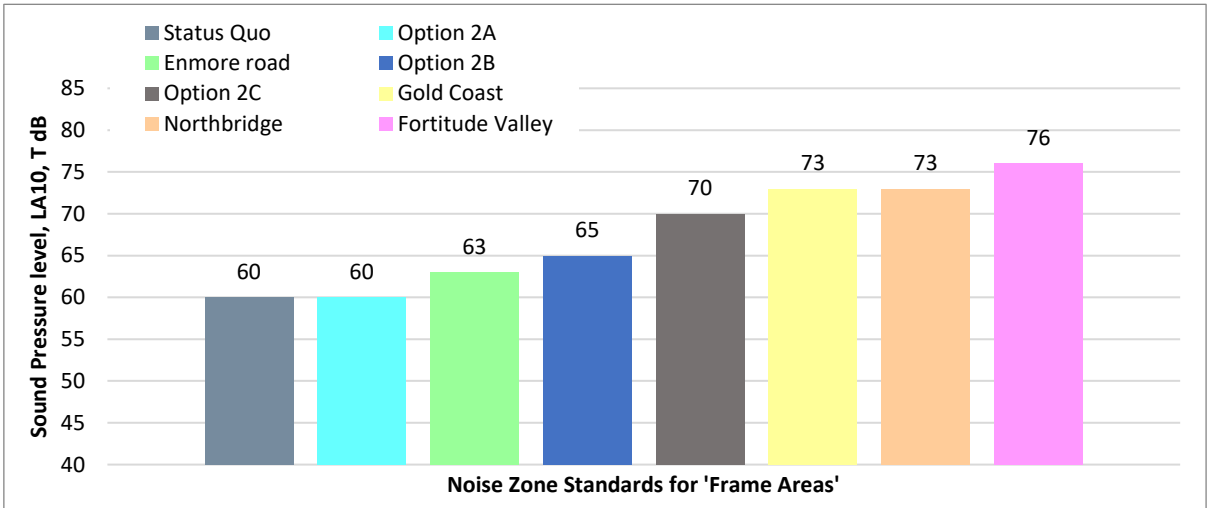
'Status Quo'	'Option 2'	Other entertainment precincts
Monday to Thursday 7 am to 10 pm, Friday and Saturday 7 am to 12 am, Sunday and public holiday 8 am to 10 pm	Sunday to Wednesday and Public Holidays: 10 am to 11 pm, Thursday to Saturday 10 am to 2 am (Option 2A), Thursday to Saturday 10 am to 1 am (Options 2B and 2C)	Different states define different time periods for their Noise Limits. The presented limits and corresponding periods most closely correlate to the ACT EP Regulation

Figure 2. Comparison of dB(A) criteria in entertainment precinct core areas during 'all other times', including options for the City Centre Entertainment Precinct.



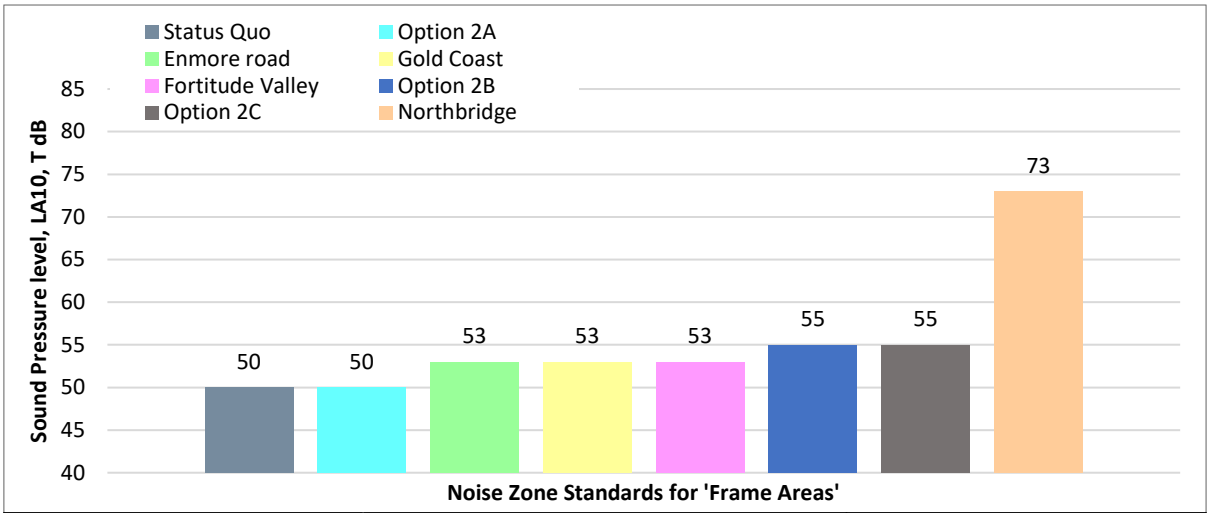
'Status Quo'	'Option 2'	Other entertainment precincts
All other times	All other times	Different states define different time periods for their Noise Limits. The presented limits and corresponding periods most closely correlate to the ACT EP Regulation

Figure 3. Comparison of dB(A) criteria in entertainment precinct frame areas, including options for the City Centre Entertainment Precinct.



'Status Quo'	'Option 2'	Other entertainment precincts
Monday to Thursday 7 am to 10 pm, Friday and Saturday 7 am to 12 am, Sunday and public holiday 8 am to 10 pm	Sunday to Wednesday and Public Holidays: 10 am to 11 pm, Thursday to Saturday 10 am to 2 am (Option 2A), Thursday to Saturday 10 am to 1 am (Options 2B and 2C)	Different states define different time periods for their Noise Limits. The presented limits and corresponding periods most closely correlate to the ACT EP Regulation

Figure 4. Comparison of dB(A) criteria in entertainment precinct frame areas during 'all other times', including options for the City Centre Entertainment Precinct.



'Status Quo'	'Option 2'	Other entertainment precincts
All other times	All other times	Different states define different time periods for their Noise Limits. The presented limits and corresponding periods most closely correlate to the ACT EP Regulation

1. The comparisons given in the above graphs are approximate in nature only and based on a set of assumptions and limitations to allow one way to compare interstate criteria. Noise is measured differently in Australian entertainment precincts and noise standards cannot be directly compared. Moreover, different jurisdictions have differing auxiliary policy factors that contribute to noise standards, for example, measurement points for compliance purposes.
2. Interstate noise policies for entertainment precincts reviewed mostly use $L_{Aeq\ 15min}$ sound pressure levels rather than $L_{A10\ 15min}$, which is used in the ACT. $L_{Aeq\ 15min}$ represents the steady sound pressure level which, over 15 minutes, has the same total sound energy as the actual measured noise, while $L_{A10\ 15min}$ represents the sound pressure level that is exceeded 10 per cent of the time over a period of 15 minutes. $L_{A10\ 15min}$ measurements tend to be higher than $L_{Aeq\ 15min}$ measurements. Thus, the $L_{Aeq\ 15min}$ sound pressure levels of interstate noise policies are presented as $L_{A10\ 15min}$ in the comparison above by applying a +3dB factor based on measurements.
3. Enmore Road Special Entertainment Precinct's noise policy also includes external octave band criteria (at 31.5Hz, 63Hz, 125Hz) in addition to the dB(A) criterion to support management of low frequency sounds.
4. Fortitude Valley and Gold Coast entertainment precincts' noise policies nominate external dB(C) criterion. These are presented as dB(A) criterion by assuming that dB(C) minus dB(A) is 15 (which is a suitable method to assess low frequency noise prominence).
5. Northbridge entertainment precinct's noise policy nominates external octave band noise criteria (at 63Hz, 125Hz). A correlating dB(A) criterion is presented by adopting a music noise spectrum of dB(C) minus dB(A) equals 15 and shifting it so that the sound pressure levels at 63Hz, 125Hz largely match the nominated criteria.

Appendix B – Planning requirements for entertainment precincts in the ACT

In the ACT, entertainment precincts are identified in the *Territory Plan* – the statutory planning framework. Requirements relating to the CCEP are described in the *Inner North and City District Policy*. These are supported by planning policy documents including:

- *City Plan*;
- *City Centre Urban Design Framework*; and
- *Inner North and City District Strategy*.

Planning requirements

At present, the CCEP differs from other areas because they are subject to specialised planning requirements. Assessment requirements set the mandatory development controls within specific zones or for specific development types. The assessment requirements for the CCEP aim to ensure development is built to a standard that provides assurance for residents, commercial occupants, and entertainment providers.

The level of amenity, use and enjoyment of premises should align with expectations of an entertainment precinct as a lively and noisy area. In the ACT, some responsibility for noise mitigation already lies with the receiver. Within an entertainment precinct, more responsibility is shared by receivers of noise through the design and construction of buildings in recognition of the entertainment (and commercial) priority of the precinct.

The requirements apply to all future developments in the CCEP. Developments proposed and constructed before 27 November 2023 are not subject to the new *Territory Plan* requirements.

Statutory planning requirements for new buildings

The *Inner North and City District Policy* requires all noise emitting and noise receiving development in the CCEP to demonstrate how noise associated with live entertainment and amplified music has been considered and applied in building design, siting, and materials. This includes consideration for low frequency components that are common occurrence in such context.

Noise receiving development

Noise receiving development includes, but is not limited to, residential uses, restaurants, retail uses, hotels, and community facilities.

Previously, buildings in the CCEP were required to meet the *Australian/New Zealand Standard AS/NZS 2107-2000 Acoustics – Recommended design sound levels and reverberation times for building interiors* only. This standard provides recommendations for internal noise levels. The new *Territory Plan* takes this requirement a step further to require buildings to achieve 43dB(C) in habitable rooms. The equivalent standard in dB(A) is roughly 30 dB(A).

All noise receiving development must achieve indoor noise levels compliant with AS2107-2000 ‘satisfactory levels’, and an equivalent internal noise level, for low frequency noise which in habitable rooms including

bedrooms (night-time) is 43dB(C) demonstrated in any one-third octave band between and including 63Hz and 125Hz.

This means new noise receiving developments must be designed so that habitable rooms will be quiet enough for residents to sleep. This is to support the health and wellbeing of residents and is based on the AS2017:2000 'satisfactory levels' and consistent with WHO guidelines.

Noise emitting development

Noise emitting developments include, but are not limited to clubs, drink establishments, emergency services facilities, hotels, indoor recreation facilities, indoor entertainment facilities, industry (except light industry), outdoor recreation facilities, and restaurants.

Exemption from gross floor area definition for basement indoor entertainment facility uses

Basement indoor entertainment facility uses are excluded from the definition of gross floor area where limited by a lease or other *Territory Plan* requirements. To qualify, a development must do all the following:

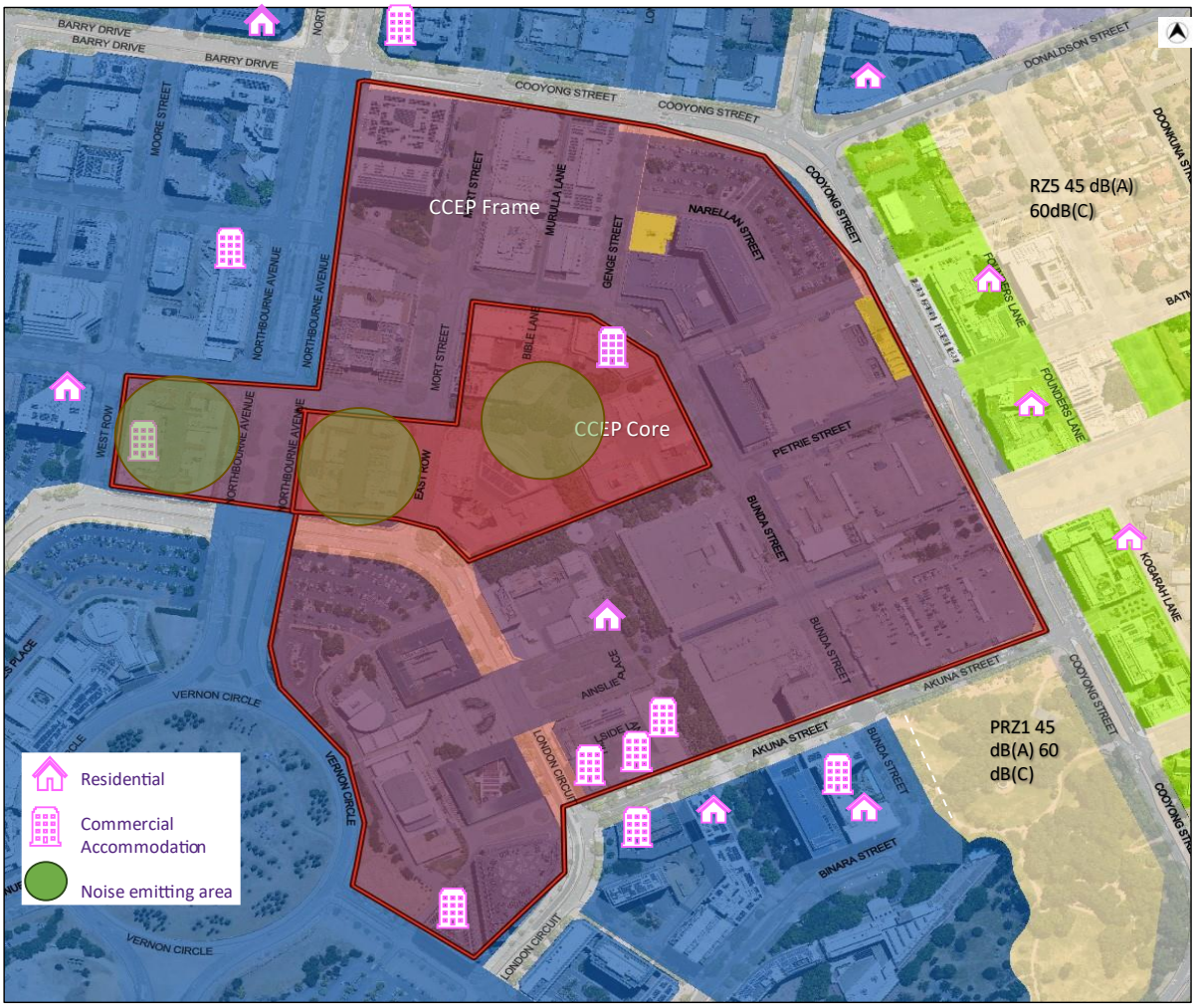
- meet any applicable conditions of Development Approval, including Lease Variation if required;
- be constructed in accordance with an EPA-endorsed NMP;
- provide an indoor entertainment use located below natural ground Level;
- remain part of a registered Building Management Statement; and
- make building end-of-trip facilities available to indoor entertainment employees.

Urban design in the City Centre Entertainment Precinct

In addition to planning requirements, the *ACT City Centre Urban Design Guide* provides design guidance for the CCEP:

- support the facilitation of entertainment events and uses in the city centre through night-time destinations, bars, performance, and concert venues integrated with surrounding public spaces;
- support entertainment uses that are appropriate to the precinct's location and scale to contribute to a thriving, lively and inclusive precinct, and NTE;
- design and develop buildings that enable live performances and entertainment options for a diverse range of interests, while supporting the health, wellbeing, and amenity of building occupants;
- ensure all noise emitting and receiving development demonstrate how low frequency noise has been considered and applied in building design, siting, and materials;
- carefully consider and demonstrate how adverse impacts are minimised on surrounding uses and amenity of other users;
- consider noise elements, including identifying areas where higher noise is acceptable, how noise can be measured and where it is being attenuated by the built form; and
- mitigate noise impacts in new residential development with architectural elements such as winter gardens and locate main habitable rooms away from noise emitting venues or open spaces.

Appendix C – Residential and commercial accommodation Map



Appendix D – Future development in the City Centre Entertainment Precinct

Garema Place Hotel

A new hotel located on Garema Place, and within the CCEP Core, is under construction and is expected to be completed in early 2027. In addition to 238 hotel rooms, the development will include multiple restaurants, bars (including a rooftop bar), and retail.

A Development Application submitted by the previous owner of the site has been approved. The original approved development application submitted by the previous site owner, included a noise management plan which incorporated an assessment of the actual noise levels being produced in the surrounding area. An amended development application is currently being assessed and the developers are aware of the investigations underway into amending the Noise Zone Standards for the city.

Canberra Civic and Culture District redevelopment

Within the CCEP Frame, the CRA has created a Canberra Civic and Culture District concept to guide the revitalisation of the area around Civic Square and the Canberra Theatre Centre. This is designed to foster a vibrant arts and cultural scene, in alignment to the vision set out for the broader CCEP. The area currently contains the Legislative Assembly, Canberra Theatre Centre, the Multicultural Centre, Canberra Museum and Gallery (CMAG), Civic Square, Constitution Place, and Ainslie Place.

The Canberra Civic and Culture District concept Identifies several future development sites surrounding the Canberra Theatre Centre redevelopment, that are proposed to be released for mixed use and commercial uses. This could also include a hotel.

Realising the CRA's vision for the Civic, Arts and Cultural Precinct will align with the place objective for entertainment and night life options provided for everyone.

Appendix E – Noise regulation and complaints process

The EPA manages the compliance and enforcement policy and process for investigating noise complaints. Environmental noise, including noise from amplified music, is regulated under the EP Act.

Noise complaints process

A person can make a complaint about noise to the EPA. Before making a complaint, potential complainants are encouraged to try to resolve any issues through discussion with the person responsible for excessive noise. The Access Canberra Noise Portal includes a link to a free Conflict Resolution Service that can mediate difficult conversations.

Where an issue cannot be resolved between the parties, a person may lodge a formal noise complaint with the EPA.

The complainant must also provide their contact details and the location of the noise. Anonymous complaints will not be investigated.

Investigation steps

Once a formal complaint has been lodged, the EPA will take the following steps to investigate and resolve the complaint.

Following the first complaint the EPA will send out a letter advising the alleged emitter of their legal responsibilities and inviting them to contact the EPA to discuss (in most cases the matter can be resolved at this stage).

To validate a complaint the EPA will undertake a two-stage process:

1. Stage One includes a visit to the complainant to establish if there is an affected person at an affected place. The EPA will ask where the complainant is affected and will take a measurement to establish the noise level.
    a. The affected place must be a place an affected person is legally occupying, for example an apartment, adjoining building, or adjoining businesses provided it is separately unit titled.
    b. The measurement would usually be taken on the boundary of the property of the affected place. For units this is often the balcony of a property. If a balcony is not available, the measurement will be taken inside the property in the place where the person is affected. When this measurement is taken inside the windows are open.
    c. If the measurement taken is above the Noise Zone Standard, then the person is taken to be an affected person in an affected place.
2. Stage Two includes a visit to the noise emitter to establish if the noise emitted is above the Noise Zone Standard. A measurement is taken at the compliance point, which is as near as practicable to the noise emitter's property boundary.
3. If the complaint is validated by the EPA through a noise measurement, a warning letter or infringement notice may be issued or, depending on the circumstances, an Environment Protection Order may be issued.

Noise measurement

The EP Regulation defines an affected person as an occupier of an affected place and includes a person who is lawfully in an affected place. It defines an affected place as a place (other than a road or road related area), whether inside or outside the ACT, where a person is affected by the noise. In defining an affected place, the Regulation specifies that a person is only affected by noise if they make a complaint, and if the noise level at the affected place exceeds the Noise Zone Standard (Section 22).

Relevant measurements must be taken at both the affected place and at the compliance point as near as practicable to the boundary of a noise emitter. The measurements taken must be above the Noise Zone Standard in both places. In the ACT, an affected place can include the outdoor areas on a person's property such as a garden or balcony.

The EP Regulation also identifies that occupiers of land adjoining a boundary between two noise zones must allow for the different land use on the other side of the boundary.

For example, for a bar located on a block of land with a Noise Zone Standard of 60dB(A) L_{10} adjoining a residential noise zone with a Noise Zone Standard of 50dB(A) L_{10}, the Noise Zone Standard at the boundary of the two zones would be 55dB(A) L_{10}. Additionally, the bar is expected to take more precautions to reduce noise reaching the residential zone than it would if it was not adjoining a different noise zone. Equally, residents of the noise zone living adjacent to the higher Noise Zone Standard zone would expect increased noise levels compared to living in an area where there is no bar. If a complaint was made about the bar, the EPA would take a measurement at the lower noise zone to determine compliance, as specified in the *Noise Environment Protection Policy*.

Appendix F – Sound Pressure Levels

In the ACT, sound pressure level measurements for noise impact assessments per the EP Regulation are presented in terms of dB $L_{A10,T}$.

- 'L' indicates sound pressure level.
- 'A' describes the frequency weighting.
- '10' indicates use of the highest 10 per cent of sound pressures sampled during the measurement, calculated by statistical analysis. Broadly, the 'average loudest' sound events in a measurement.
- "T" represents the sound pressure level measurement duration, which shall not be shorter than 5 minutes or longer than 15 minutes.
- Sound pressure level measurements for EP Regulation purposes are guided by *Environment Protection (Noise Measurement Manual) Approval 2009 (No 1)*.

Other descriptors for sound pressure used in the RIS are:

- L_{Aeq}– Often referred to as the 'average' level, the L_{Aeq} is A-weighted, equivalent continuous sound level. This value is a simple figure representing the same total sound energy as the actual time-fluctuating level that was measured.
- L_{Ceq} – C-weighted, equivalent continuous sound level. As above but with 'C' frequency weighting.
- L_{C10} – Similar to L_{A10}, this descriptor indicates a sound pressure 'average loudest' 10% of sound events during a measurement, but with 'C' frequency weighting.

Appendix G – Analysis methodology and assumptions

Assumptions

For the purposes of this analysis, the following assumptions have been used.

1. **Noise levels in the CCEP:** The average noise measurements taken (75 dB(A) L_{10}/90 dB(C) L_{10} for CCEP Core and 65 dB(A) L_{10}/80 dB(C) L_{10} for the CCEP Frame) are assumed to represent the current and future external noise environment in the CCEP, until a person who may be affected by noise moves into the area.
2. **Impact of affected person:** It is assumed that if a person who may be affected by noise was to move into the CCEP, the EPA would enforce the EP Regulation and entertainment businesses would be required to reduce their noise emissions to comply with the regulations.
3. **Noise attenuation of existing residential buildings in the CCEP:** Current noise attenuation of existing buildings in and around the CCEP will remain unchanged irrespective of future Noise Zone Standards. This is based on:
    a. the cost to owners of residential buildings to attenuate noise. Research conducted by the Brisbane City Council in 2007 for the implementation of the Fortitude Valley Special Entertainment Precinct found that the cost of noise attenuating a single apartment within the Fortitude Valley Special Entertainment Precinct by approximately 14dB(A) from $34,000 in $64,000 in 2006 dollars ($50,000 to $93,000 in 2023 dollars).[22] These costs do not account for potential lost rents, temporary accommodation costs or other impacts that may be associated with the disruption of retrofitting works which would prevent owners from deciding to retrofit their apartments to attenuate noise; and
    b. even if owners were willing to improve the noise attenuation capacity of their properties, the full noise attenuation of their properties may be limited due to the existing building characteristics. Furthermore, noise attenuation will not prevent noise from impacting residents if they open doors and windows or utilise their balconies or other outdoor amenities.

Methodology

Health and wellbeing impacts of noise

Identifying the impacts

The WHO identified several health impacts from external noise and provided guidance on noise levels below which these impacts would be minimal:[xxx]

- **Annoyance:** It is the most understood impact of environmental noise. It is a subjective feeling of displeasure that is triggered by any agent or condition known or believed by an individual or group to adversely affect them. It can cause negative responses such as anger, displeasure, exhaustion, and

[22] Adjusting for the Other Residential Building Construction PPI.

stress. A range of factors, including social values, expectations of noise levels, personal characteristics and living situation, can impact the likelihood that an individual will experience annoyance associated with environmental noise.

- **Sleep disturbance:** There is sufficient evidence that exposure to external noise causes sleep disturbances and diminishes the value of sleep, which if ongoing can affect a person's health and quality of life by preventing good physiological and mental functioning. These effects are particularly noted in more sensitive receivers, including shift workers, the elderly, and persons vulnerable to physical or mental disorders. The WHO has indicated that for a good night's sleep, sound levels should not exceed 30 dB(A) for continuous background noise and 45 dB(A) for individual noise events.
- **Cardiovascular disease**: Studies have found limited evidence that prolonged and continuous[23] exposure to external noise above 65-70 dB(A) may increase the risk of high blood pressure and ischaemic heart disease increases.

Quantifying the impacts

A further WHO study quantifies the effect of environmental noise from roads, railways and aircraft on public health expressed in the number of Disability Adjusted Life Years (DALYs).[xxxi] The report was designed to provide technical support for policy makers to assess the impacts of environmental noise. The report also provided a sensitivity analysis for "low", "central" and "high" estimates.

It should be noted that the studies were based on cities with populations over 50,000 so there may be some limitations in applying these assessments to as small a population as this (169 persons). Additionally, the research has focused primarily on the impacts of traffic, rail, and aeroplane noise, with no available research on the impacts of entertainment noise on residents in Australia. However, this is the only measure to quantify the potential impacts of noise on people.

To quantify the health and wellbeing impacts of options 2A, B, and C the burden of disease estimates calculated by the WHO have been applied to the population of persons living in residential buildings that have been determined to be sufficiently close enough to the CCEP that they could be impacted by a changed noise environment. As a causal relationship was found between prolonged and constant exposure to environmental noise and sleep deprivation and annoyance, these impacts have been included. Even though no causal link between noise and increased risk of cardiovascular disease has been found, to be conservative, the impacts from cardiovascular disease are also included in this analysis.

To determine the number of persons, an analysis of the number of residential buildings located in the CCEP was undertaken. It was identified that there is one residential building located in the CCEP.[24] It has 99 apartments. Based on an average occupancy rate of 1.7 persons, it is assumed there are approximately 169 persons living permanently in the CCEP who could be impacted by noise changes.

A high-level analysis was then undertaken to determine if residents living in apartments buildings surrounding the CCEP would be impacted by amending the Noise Zone Standards for the CCEP. This

[23] "Continuous" refers to 24/7 exposure to noise.
[24] This does not include commercial accommodation providers that may have permanent residents.

included assessing each building's proximity to the CCEP, and the level at which noise travels over distance, and existing noise levels already being produced in the CCEP. From this analysis it was determined that there would be no residents living outside the CCEP who would be impacted from changes to the CCEP Noise Zone Standards. This analysis is only applied to people permanently living in a residential building. It does not include people in short term accommodation or working in the CCEP. While noise may impact these people, these impacts are discussed in other sections of the report.

Based on the WHO findings applied to the population of impacted persons, it is determined that the total burden of changed noise conditions for residents in DALYs would be 0 for no impact, 0.52 under the low scenario, 0.93 under the central scenario, and 2.91 under the high scenario. In addition, due to the uncertainty around the impact of the different regulatory options, a scenario analysis was undertaken to determine the quantum of impact if more residents in surrounding building were to be impacted by noise.

Scenario testing

In addition, due to the uncertainty around the impact of the different regulatory options, a scenario analysis was undertaken to determine the quantum of impact if more residents in surrounding building were to be impacted by noise. Using the Office of Impact Analysis' value of a Statistical Life Year for 2023[25] and the calculated DALYs, the per annum cost impact on residents of each option can be seen in Table 1 below. It should be noted that these costs represent the total health impact of noise exposure under each option, not the change in the health impact because of the increase in allowable noise between each option:

Table 1. Monetised impact of noise on residents

	No Impact	**WHO Low impact**	**WHO Central Impact**
CCEP Population	$0	$122,056	$217,476
CCEP Plus 100 impacted persons	$0	$193,853	$345,403
CCEP Plus 200 impacted persons	$0	$265,651	$473,330
CCEP Plus 400 impacted persons		$409,246	729,185

Costs of attenuating existing entertainment venues

Research to quantify the cost of retrofitting existing buildings to attenuate noise emissions was undertaken by the Brisbane City Council to support its investigations into establishing the Fortitude Valley Special

[25] Value of a statistical life is $235,000 in 2023 dollars.

Entertainment Precinct.[xx] It was found that the cost of retrofitting existing buildings to reduce noise emissions by 15dB(A)/10dB(C) would be in the order of $100,000 to $700,000 (in 2004 dollars). To quantify the potential avoided costs for Canberra noise emitting businesses, the cost range was indexed to 2023 dollars using the latest non-residential construction producer price index (December 2023). The per-decibel costs were then applied to the difference between the current noise levels in the CCEP (assumption 1) and the maximum allowable noise levels under each option to estimate the potential avoided costs for a venue under each option.

These are intended to be used as a proxy for the potential costs for entertainment venues in the CCEP. These costs do not reflect the actual costs that would be required to sufficiently attenuate existing buildings in the CCEP for sound emissions. This is because actual costs would need to be determined by each individual building based on their individual buildings' noise attenuation levels, and noise levels being emitted by the business.

Attenuation costs for new residential and commercial buildings

To understand the marginal change in cost to appropriately build and attenuate residential and commercial developments in the City Centre Entertainment Precinct based on the uplift in noise level proposed by Option Two A, B, and C compared to Option One, an experienced quantity surveyor was engaged to prepare an estimate of the cost difference. The quantity surveyor prepared an estimate using a sample project for residential and commercial respectively.

Table 2 below summarises the estimated construction cost impact for residential development under the proposed regulatory reform options.

Table 2. Cost impacts per m^2 on residential development

Residential Developments	**$/m² GFA (Ex, GST)**	**Per Cent Change (+' increase, -' decrease**
Current Noise Limit of 60 dB(A) L_{10}	$2,593	
Uplift to External Noise Limit of 65 dB(A) L_{10}	$2,660	2.60
Uplift to External Noise Limit of 70 dB(A) L_{10}	$2,673	3.08
Uplift to External Noise Limit of 75 dB(A) L_{10}	$2,673	3.08

Table 3 below summarises the estimated construction cost impact for commercial development under the proposed regulatory reform options.

Table 3. Cost impact per m^2 on commercial development

Commercial Developments	$/m2 GFA (Ex, GST)	Per Cent Change (+' increase, -'decrease
Current Noise Limit of 60 dB(A) L_{10}	$4,693	
Uplift to External Noise Limit of 65 dB(A) L_{10}	$4,785	1.96
Uplift to External Noise Limit of 70 dB(A) L_{10}	$4,670	-0.49
Uplift to External Noise Limit of 75 dB(A) L_{10}	$4,577	-2.49

The methodology and assumptions underpinning this cost estimate, including sensitivity analysis is set out below.

Noise-attenuating new buildings

As part of considering noise policy options for the CCEP, an acoustic assessment has been commissioned by the ACT Government. This study considered how low frequency noise can possibly be managed in an entertainment precinct, including consideration of a range of building envelope construction requirements to provide noise attenuation to achieve appropriate indoor sound levels for a range of allowable music sound levels from venues (refer tables 7 and 8). These options were subsequently costed, this is discussed below.

The estimated construction cost impact for residential and commercial developments under the proposed regulatory reform has been estimated using the following methodology:

- A sample project for residential and commercial respectively was used to benchmark the cost of façade construction under the existing standard.
- The sample project's façade solution was reviewed against alternative façade constructions for each noise level requirement (refer Tables 7 and 8). It should be noted that these possible construction options are informed by a set of limitations and assumptions as adopted in the technical assessments.
- Subtracting and adding the relevant building element costs as required for upgrade of glass selection, replacement of façade types and any other directly impacted building element costs. Reasonable assumptions have been made as required for percentage of façade replacement, aesthetic impact, and material selection.
- For Construction C residential developments (refer Table 7), two façade solutions were proposed for Noise Zone Standard uplifts from 60 dB(A) L_{10} to 65 dB(A) L_{10}; specialised glazing of up to 5 per cent of the total glazing area, and a 1-metre-deep winter garden. The estimated costs have been

based on a weighted average, assuming 20 per cent of bedrooms in a typical residential development project will adopt the recommended alternative of up to 5 per cent specialised glazing area and the remaining 80 per cent of bedrooms will adopt the 1-metre-deep winter garden solution.

- Associated project costs such as impact on contractor preliminaries, margins, and consultant fees have been included based on a proportion of the net trade costs changes. Prices are current as of May 2024 and exclude any escalation as the timing of regulatory change is uncertain.
- The cost impact estimate is limited to new development construction costs only and does not include valuation of amenities, legal costs, industry training, upgrades of existing buildings or compliance of developments currently in progress.
- A sensitivity analysis has also been undertaken on the assumed percentage of architectural features and to increased precast concrete area for commercial developments. For this analysis, three scenarios of 30 per cent, 50 per cent, and 70 per cent have been explored. This analysis is set out below.

The estimate has been prepared to indicate an approximate cost premium to enhance building Noise Zone Standards for residential apartment developments and commercial developments for the CCEP in the ACT. The options explored are uplift from current level of external noise limit of 60 dB(A) L_{10} to 65 dB(A) L_{10}, 70 dB(A) L_{10}, and 75 dB(A) L_{10} for:

- a residential bedroom, assuming dB(C) minus dB(A) = 15, and with consideration to the 63-125Hz octave band criteria; and
- a commercial general office, assuming dB(C) minus dB(A) = 15, with internal noise limit of 40 dB(C).

For the purpose of the cost estimate, the building characteristics have been assumed to be:

- Residential buildings:
    - Basement car park;
    - Metal and fibre cement cladding façade, double glazed full height windows;
    - Concrete structure roof; and
    - Unfurnished area.
- Commercial buildings:
    - Basement car park;
    - Concrete precast and double-glazed curtain wall panelised façade;
    - Metal roof cladding and concrete roof terrace; and
    - Unfurnished area.

All costs are current as of May 2024.

Provisions have been included for design and construction contingencies at 10 per cent of the estimated cost for the proposed changes, as well as trade preliminaries, contractor preliminaries, and a 12 per cent margin. No allowance has been made for the following cost items, which should be added as appropriate to establish the total project costs:

- Structural items such as wall frames, roof frames, etc. unless noted otherwise if the estimate details;
- Furnishing sound treatment such as blinds, curtains, shutters, acoustic wall finishes, etc;
- Assessment of other forms of noise transmission such as inter-storey noise transmission, internal compartment within one development and adjacent structures, etc;
- Legal and application fees and charges;
- Upgrades to existing developments and ongoing construction to meet the uplifted standards; and
- Cost inflation beyond May 2024.

Sensitivity analysis on commercial developments' façade features

Table 4. 30 Percent of the Precast Concrete Panel Area to receive Architectural Feature Internally and Externally (Baseline)

Commercial Developments	**$/m2 GFA (Excl. GST)**	**Per Cent Change (+' increase, -' decrease**
Current Noise Limit of 60 dB(A) L_{10}	$4,693	
Uplift to External Noise Limit of 65 dB(A) L_{10}	$4,785	+1.96
Uplift to External Noise Limit of 70 dB(A) L_{10}	$4,670	-0.49
Uplift to External Noise Limit of 75 dB(A) L_{10}	$4,577	-2.49

Table 5. 50 Percent of the Precast Concrete Panel Area to receive Architectural Feature Internally and Externally

Commercial Developments	$/m2 GFA (Excl. GST)	Per Cent Change (+' increase, -'decrease
Current Noise Limit of 60 dB(A) L_{10}	$4,693	
Uplift to External Noise Limit of 65 dB(A) L_{10}	$4,785	+1.96
Uplift to External Noise Limit of 70 dB(A) L_{10}	$4,700	+0.13
Uplift to External Noise Limit of 75 dB(A) L_{10}	$4,634	-1.27

Table 6. 70 Percent of the Precast Concrete Panel Area to receive Architectural Feature Internally and Externally

Commercial Developments	$/m2 GFA (Excl. GST)	Per Cent Change (+' increase, -' decrease
Current Noise Limit of 60 dB(A) L_{10}	$4,693	
Uplift to External Noise Limit of 65 dB(A) L_{10}	$4,785	+1.96
Uplift to External Noise Limit of 70 dB(A) L_{10}	$4,729	+0.76
Uplift to External Noise Limit of 75 dB(A) L_{10}	$4,691	-0.06

The assumed architectural finishes are based on average rates of commonly observed façades and interior products. These should not be regarded as design advice. The actual percentage of finishes will differ for each project depending on the design. The proposed percentages are theoretical and for the purpose of benchmarking and sensitivity analysis only.

Alternative construction scenario testing

The matrices in Tables 7 and 8 show indicative construction types that are likely to be required to mitigate noise, based on the specific sound transmission loss the façade would need to achieve to meet the internal noise level criterion of the receiving space (columns) and for a given external noise limit (rows).

Table 7. Matrix of potential constructions for a residential bedroom, considering dB(C) minus dBA =15,

Matrix of simplified constructions capable of meeting internal noise limit, given external noise levels		Internal noise limit for a residential bedroom, dB $L_{Aeq,T}$ (without octave band criteria)				With 63Hz & 125 Hz octave band criteria
		30	**35**	**40**	**45**	
External noise limit, dB $L_{A10,\ 5\text{-}15min}$ (C minus A = 15 dB)	50	Standard glazing	Standard glazing	Standard glazing	Achievable with any construction	Specialised glazing
	55	Specialised glazing	Standard glazing	Standard glazing	Standard glazing	Construction A
	60	Construction A	Specialised glazing	Standard glazing	Standard glazing	Construction B
	65	Construction B	Construction A	Specialised glazing	Standard glazing	Construction C
	70	Construction C	Construction B	Construction A	Specialised glazing	Construction D
	75	Construction D	Construction C	Construction B	Construction A	Construction D

Table 8. Matrix of potential constructions for a general office, considering dB(C) minus dB(A) =15

Matrix of simplified constructions capable of meeting internal noise limit, given external noise levels		Internal noise limit for a commercial office development, dB $L_{Aeq,T}$	
		40	**45**
External noise limit, dB $L_{A10,\ 5\text{-}15min}$ (C minus A = 15 dB)	60	Standard glazing	Standard glazing
	65	Specialised glazing	Standard glazing
	70	Construction X	Specialised glazing
	75	Construction Y	Construction X

Tables 9 and 10 summarise in more detail the typical building façade elements given in Tables 7 and 8.

Table 9. Residential bedroom – more detailed façade construction descriptions

Summarised construction	Typical construction examples
Standard double-glazed system	10mm glass | 12mm airgap | 6.38mm laminated glass – all-glazed construction
Specialised double-glazed system	12.5 mm laminated glass | 12mm airgap |16.5 mm laminated glass – all-glazed construction
Construction A	≤1/3 of the area covered Specialised DGU and ≥2/3 of the area consisting of 200mm pre-cast concrete; or 1m deep '**winter garden'** (fully enclosed or enclosable balcony) with standard glazing
Construction B	≤5% of the area covered by Specialised DGU and rest of the area entirely made of 200mm pre-cast concrete; or ~1m deep '**winter garden'** (fully enclosed or enclosable balcony) with standard glazing
Construction C	Entirely pre-cast 200mm concrete, no windows; or ~1m deep '**winter garden**' (fully enclosed or enclosable balcony) with heavier (higher sound insulating) glazing
Construction D	~1m deep '**winter garden**' (fully enclosed or enclosable balcony) with fully glazed façade, specialised highly sound insulating glazing on the internal façade only
Construction E	~1m deep '**winter garden**' (fully enclosed or enclosable balcony) with fully glazed façade, specialised highly sound insulating glazing on **both** the internal and external façades

It should be noted that the sound insulation impact of ventilation openings has not been considered in these façade elements. Natural ventilation openings in buildings generally reduce the sound transmission loss performance of the building envelope. As constructions become more onerous and the capability of a building to mitigate higher external noise levels increases, the provision of ventilation becomes a more significant consideration.

Natural ventilation strategies intended for long-term or ongoing ventilation (i.e. rather than simply opening windows) may be impractical with the highest façade sound insulation approaches and mechanical ventilations systems could be required.

Table 10. Commercial office – more detailed façade construction descriptions

Summarised construction	Typical construction
Standard double-glazed system	6mm float glass | 12mm airgap | 10.38mm laminated glass - all-glazed construction
Specialised double-glazed system	10.2mm laminated glass | 24mm airgap |16mm laminated glass- all-glazed construction
Construction X	≤50% of the area covered Specialised DGU and rest of the area consisting of 200mm pre-cast concrete
Construction Y	≤10% of the area covered by Specialised DGU and rest of the area entirely made of 200mm pre-cast concrete
Construction Z	Entirely pre-cast 200mm concrete bunker, no windows. Provided for illustrative purposes.

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