Literature Review of Mechanisms to Regulate the Supply of Alcohol for the Development of Auckland Council's Local Alcohol Policy

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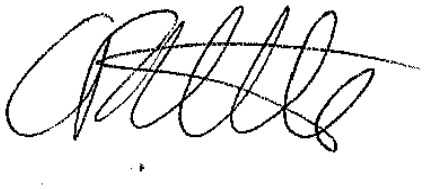
Approved for Auckland Council publication by:  Name: Greg Holland Position: Manager, Research, Investigations and Monitoring Unit
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Literature Review of Mechanisms to Regulate the Supply of Alcohol for the Development of Auckland Council's Local Alcohol Policy

Prepared for Auckland Council Community Policy and Planning

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Executive Summary

This research involved a review of the professional and academic literature on the relationship between three measures of alcohol availability and the incidence of alcohol-related harms, and the effectiveness of different policy mechanisms in regulating availability and reducing harms. The three measures of alcohol availability assessed were the density of licensed premises, trading hours (including one-way door policies) and the location of licensed premises. These measures form the basis of the three policy options being investigated by the Auckland Council for the development of its local alcohol policy.

The review found evidence for the effectiveness of a range of policy mechanisms in reducing alcohol-related harms. Both density controls and trading hour restrictions were identified as having moderate evidence of effectiveness in reducing alcohol consumption and related harms. Other reviews have also identified these mechanisms as having a low cost to implement. Less evidence was available for the effectiveness of location-based policy mechanisms, but reviews of local alcohol policies and the academic literature found that location-specific policies were often used to control impacts on sensitive sites and sub-populations.

Outlet density policy mechanisms

The academic and professional literature provides consistent evidence of a positive relationship between alcohol outlet density and alcohol-related harms. While the review of empirical studies illustrated variability in the relationship between density and different types of harm, all studies identified at least one positive, statistically significant relationship with an alcohol-related harm. A number of studies identified the additional role of outlet clusters in causing alcohol-related harms, including alcohol-related crashes, pedestrian road injuries and violent assaults. Other reviews of the international academic literature also reported consistent evidence for the positive relationship between alcohol outlet density, consumption levels and the incidence of alcohol-related harms, including violence, crime, medical harms and drink-driving accidents.

Governments and local authorities in the UK and Australia have incorporated density control measures into their alcohol policies, including region-wide and area-specific cumulative impact policies, plan zoning and licence freezes. While there has been limited evaluation of the effectiveness of these policies in reducing alcohol-related harms, the available evidence demonstrates that greater outlet density is associated with increased alcohol consumption and related harms. Based on these findings, it is argued that a decline in harms will occur with the introduction of density controls or a reduction in density. Indeed, the well-evidenced positive relationship between alcohol outlet

density, alcohol consumption and related harms has resulted in the general promotion of density controls as a key regulatory mechanism in reducing alcohol-related harms.

Outlet trading hour policy mechanisms

This review of the academic and professional literature also provided evidence of a positive relationship between alcohol outlet trading hours and alcohol-related harms. While fewer empirical studies could be found, the available evidence demonstrates that alcohol-related harms are concentrated in time, with a peak in incidents coinciding with the closing time of licensed premises. Other studies demonstrated that premises with extended trading hours experience a greater number of assaults and other alcohol-related crime. The results of this review are consistent with the findings of other reviews that have been conducted on the relationship between trading hours and alcohol-related harms.

Despite the liberalisation of licensing legislation in the UK in the last decade, and subsequent deregulation of trading hours in the UK, a number of UK local authorities incorporated trading hour restrictions in their local licensing policy statements. Authorities in Australia employ a range of controls on trading hours, including restrictions on different area types, premises types and zones, extended hours applications, lockout policies, impact assessments and management plans. Evaluations of extended trading hour policies and restrictions on trading hours provide a wealth of evidence of the effectiveness of trading hours in reducing alcohol-related harms. Evaluations of extended trading hours in the UK and elsewhere have reported increases in alcohol-related harms and the temporal displacement of harms, while longitudinal studies of restricted trading hours found that they were associated with an overall reduction in the incidence of alcohol-related harms. There is some evidence that lockout policies can be effective at reducing late night/early morning harms, but this requires further investigation. The positive relationship between alcohol outlet trading hours, alcohol consumption and related harms has resulted in the general promotion of trading hour provisions as a key regulatory mechanism to reduce alcohol-related harms.

Location-based policy mechanisms

The final policy option investigated was the implementation of location-based policies, intended to protect sensitive sites and sub-populations (such as schools, churches and young people) from alcohol-related harms. The academic literature suggests that some parts of the population experience greater levels of alcohol consumption and related harms as a result of high exposure to and availability of alcohol. Men, youth, low-income earners and some ethnic groups tend to consume larger quantities of alcohol, practice ‘problem drinking’ behaviours (including binge drinking and drunkenness) and

experience greater levels of direct harms. In particular, studies draw attention to the relationship between alcohol outlet density and young people. In addition to outlet density, studies have identified a relationship between alcohol-based advertising near schools and student drinking. The review also identified that residents of 'problem' areas experience greater levels of indirect harms, including disturbance, assault and property damage.

The review of international alcohol policies found that overseas governments and councils have adopted a range of policy mechanisms to minimise the effects of alcohol sales on particular locations and land uses. Mechanisms include liquor ban areas, restricted drinking areas, land use controls and management strategies (including local accords). However, very little research has been conducted on the effectiveness of location-based policies in reducing area-specific and overall levels of alcohol-related harm. Bans on the consumption of liquor in public places are reported to have limited effectiveness and high implementation costs, as they do not generally result in overall reductions in harms, but rather displacement to other areas. However, bans are promoted for the reduction of alcohol-related harms in sensitive sites and areas currently experiencing high levels of harms. Evidence on the effectiveness of local accords is not conclusive; few evaluations have been conducted, and those studies that have evaluated the outcomes of accords are of limited methodological robustness. Similarly, while cumulative impact areas and land use zoning have been indicated as successful strategies by local authorities, insufficient evidence is available to substantiate these findings. Despite the limited evaluation of location-based policy mechanisms, professional and academic reviews highlight the importance of community- or area-based policies in the reduction of alcohol-related harms. Indeed, it is argued that effective alcohol policies are based on a robust understanding of the local context, and respond to the needs and issues of a particular site, area or population in which they are implemented.

Implementation of mechanisms to regulate the supply of alcohol

The academic literature has also identified a range of considerations for the effective implementation of supply-based policy mechanisms. Reviews of each policy issue and the effectiveness of policy mechanisms highlighted significant variability in findings, dependent on the harms, country, licence type and population in question. This variability demonstrates the need for local alcohol policies to respond to the issues and policy history of a particular place, and the diversity in land uses, population characteristics and experiences of alcohol-related harms within that place. In particular, effective policies will reflect the different harms associated with on- and off-licence premises and socio-spatial differences in the experience of harms. Effective policy

creation is therefore dependent on the construction of a strong evidence base, to ensure that policy mechanisms are appropriate to the area in which they are implemented, and targeted at the key policy issues. The literature also suggests that effective interventions are reliant on robust, reflexive implementation planning, incorporating enforcement and monitoring.

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Introduction

On 18 December 2012 the Sale and Supply of Alcohol Act 2012 (the Act) received royal assent and became New Zealand law. The Act repeals and replaces the Sale of Liquor Act 1989 and introduces a number of changes to the liquor-licensing framework. Section 4 of the Act states:

(1) The object of this Act is that—

- *the sale, supply, and consumption of alcohol should be undertaken safely and responsibly; and*
- *the harm caused by the excessive or inappropriate consumption of alcohol should be minimised.*

(2) For the purposes of subsection (1), the harm caused by the excessive or inappropriate consumption of alcohol includes—

- *any crime, damage, death, disease, disorderly behaviour, illness, or injury, directly or indirectly caused, or directly or indirectly contributed to, by the excessive or inappropriate consumption of alcohol; and*
- *any harm to society generally or the community, directly or indirectly caused, or directly or indirectly contributed to, by any crime, damage, death, disease, disorderly behaviour, illness, or injury of a kind described in paragraph (a).*

The Act empowers territorial authorities, in consultation with residents, to develop local alcohol policies, which licensing decision makers will be required to consider when making licensing decisions. Under the new law, local alcohol policies can include the following provisions for on, off and club licences:

- limit the location of licences in relation to broad areas, or premises or facilities of particular kinds, such as schools or churches
- limit the density of licences by specifying whether further licences or types of licences should be issued for a particular area
- restrict or extend the maximum opening hours outlined in the Act
- implement one-way door restrictions that would allow patrons to leave the premises but not enter or re-enter after a certain time
- require that licences or licences of a particular kind be issued subject to certain discretionary conditions.

In July 2012, Auckland Council's Regional Development and Operations Committee approved the development of a local alcohol policy, to be delivered over an 18-month period. In order to prepare for the development of this policy, the council commissioned a Local Alcohol Policy Research Project, which was completed in May 2012. This research report included:

- a review of selected professional and academic literature on alcohol consumption and related issues
- an overview of the demographic profiles of Auckland's resident and visitor populations
- a review of the objectives and policies of Auckland Council's seven operative District Plans, and a summary of the key alcohol-related issues being considered as part of the development of Auckland's new Unitary Plan
- analysis of the number, location and licence hours of Auckland's licensed premises
- information about Auckland Council's liquor bans and analysis of issues associated with the consumption of alcohol in public places
- data on overall health indicators for Auckland
- analysis of other indicators to understand the nature and severity of Auckland's alcohol-related problems.

Other research is also being undertaken, including an investigation of public opinions relating to the role of alcohol in Aucklanders' lives, and a survey of Police on the enforcement of Auckland's liquor bans and their perceptions on the role of alcohol in crime and disorderly behaviour.

In February 2013, Community Policy and Planning commissioned the Research, Investigations and Monitoring Unit to undertake further research into the role of alcohol availability in the nature and severity of alcohol-related harms to inform the development of Auckland's local alcohol policy. This research involves a review of the professional and academic literature on the relationship between three measures of alcohol availability and the incidence of alcohol-related harms, and the effectiveness of different policy mechanisms in regulating availability and reducing harms. The three measures of alcohol availability are the density of licensed premises, trading hours (including one-way door policies) and the location of licensed premises. These measures form the basis of the three policy options being investigated by the Auckland Council for the development of its local alcohol policy.

Community Policy and Planning requested that the literature review cover:

1. the links the between the policy issues and alcohol-related harm to determine whether the policy needs to include provisions about hours, density and location. This review should identify what issues occur with late night trading, high density of premises and premises being located next to sensitive sites or communities
2. the policy mechanisms overseas councils and governments have used to regulate trading hours and the location and density of licensed premises

3. any evidence of the effectiveness of the overseas policy mechanisms in terms of their ability to reduce alcohol-related harms.

This review is consequently separated into three sections, each addressing the academic literature and international policy related to one of the three measures of alcohol availability. Each section begins by describing the state of academic literature on the measure of alcohol availability; key foci within the literature are identified, and evidence on the relationship between the measure and various alcohol-related harms summarised. The approaches that overseas governments and local councils have used to regulate the measure of alcohol availability are then described, together with any available evidence on the effectiveness of these approaches. This review of international policy mechanisms will be accompanied by a stock-take of other New Zealand councils' approaches to regulating alcohol availability, conducted by the Community Policy and Planning Unit. The review concludes by summarising evidence on the effectiveness of the three policy options, and identifying information needed to support the implementation of supply-based policies.

Literature review: content and method

Review content and structure

The following review examines four of the five provisions to regulate the supply of alcohol allowed under the Sale and Supply of Alcohol Act 2012. Under the new law, local alcohol policies can include the following provisions for on, off and club licences:

- limit the location of licences in relation to broad areas, or premises or facilities of particular kinds, such as schools or churches
- limit the density of licences by specifying whether further licences of types of licences should be issued for a particular area
- restrict or extend the maximum opening hours outlined in the Act
- implement one-way door restrictions that would allow patrons to leave the premises but not enter or re-enter after a certain time
- require that licences or licences of a particular kind be issued subject to certain discretionary conditions.

The fifth provision, the establishment of discretionary conditions, will be the subject of a separate review.

The review is structured into three key sections, each addressing one or more of the provisions enabled under the Act. The closely related provisions enabling the adjustment of maximum opening hours and implementation of one-way door restrictions have been combined under a section on 'trading hours'. Review of the academic literature and overseas alcohol policies highlights that these supply provisions have been approached and applied differently by different licensing authorities, revealing a range of possible 'policy mechanisms'. The three sections therefore address the following classes of policy mechanisms:

- **Liquor outlet/licence density mechanisms:** The outlet density issue has multiple facets, each associated with different types of harms and requiring different types of management responses. Density can be measured in terms of the number of outlets per unit area or population, access to outlets (e.g. travel distance) and the proximity of outlets to one another (outlet clustering). Authorities regulate the density of liquor outlets using licensing policies, which set out conditions for the creation of new licences or extension of existing licences. These policies do not control density directly; instead they enable authorities to regulate changes in density over time through the approval or refusal of licences. Authorities may use additional policy mechanisms to manage harms associated

- **Outlet trading hour mechanisms:** outlet trading hours affect both the total amount of time that alcohol is available for, and the timing of alcohol purchases/consumption and related activities (e.g. entertainment). Authorities may regulate outlet trading hours by setting maximum hours of operation or sales (i.e. opening and closing hours) and by placing conditions on activities conducted on the premises at particular times of the day or week. Conditions may relate to the entry and exit of premises, purchase and consumption of liquor on the premises, the types of activities conducted on the premises and the location of those activities at different times of the day.
- **Outlet location mechanisms:** the impact of an individual alcohol outlet on the incidence of alcohol-related harms in an area is mediated by the proximity of the outlet to sensitive land uses, sites and sub-populations. 'Sensitive' areas may include residential zones, schools and churches, as well as areas already experiencing high levels of alcohol-related harms. The impact of alcohol availability on these sensitive sites and sub-populations may also be affected by their exposure to alcohol through the placement of alcohol advertising. Authorities regulate outlet location through 'proximity' controls and provisions for specified areas in their licensing policies. Location-based policy mechanisms may include regulations on the proximity of new/extended licences and alcohol advertising to sensitive land uses or sites, and additional conditions on licences located in or near sensitive areas.

Review methodology

Each class of policy mechanisms has been analysed using three steps:

- A review of the available evidence from the academic literature and technical reports on the relationship between the 'policy issue' (outlet density, trading hours or location) and alcohol-related harm
- A review of the way in which each policy mechanism has been included in the licensing policies of selected overseas licensing authorities
- A review of the available evidence on the effectiveness of each policy mechanism at reducing alcohol-related harm.

In the first step, literature on the evidence for each policy issue was gathered from New Zealand and international books, journal articles and technical reports. Scopus and Google Scholar were initially used to identify relevant literature. Additional sources were identified from the reference lists of the resulting articles/reports, and several key books. Preference was given to peer-reviewed articles and reports published since 2000, as

these generally use more robust statistical analyses and models, avoiding issues with autocorrelation (see Burgess and Moffatt, 2011). However, some technical reports were also included in the review due to gaps in the academic literature, as were several key articles from the 1990s that were significant in developing the field of research. Reports that have not been peer-reviewed are marked with an asterisk, and should be viewed as offering less robust evidence than contemporary peer-reviewed articles.

The gathered literature was analysed by identifying the focus of each article/report, the study setting and key findings, and collating the resulting information in a table. The 'focus' was generally described as the alcohol supply measures (e.g. outlet proximity) and alcohol-related harm variables (e.g. vehicle accidents) assessed by the study, with a brief description of study methodology where relevant. The 'key findings' recorded in the table were those with relevance to the policy mechanism under review, and included the main conclusions drawn by the study as well as any statistically significant negative or positive relationships between the supply measures and harm variables. Tabulating the focus and findings of each study enabled comparison across the articles and identification of key trends in the evidence for each policy issue. These trends, and the variability in each body of evidence, are reported in sections 1.1, 2.1 and 3.1 of this review. The tabulated information on each study is also included in appendices 1, 3 and 6.

In the second step, the policy mechanisms that selected overseas licensing authorities have employed to regulate each policy issue and reduce the incidence of alcohol-related harms are described. The purpose of detailing the provisions used by overseas licensing authorities was to provide 'best practice' examples for each class of policy mechanisms and to review their effectiveness, to inform the development of Auckland Council's local alcohol policy. Best practice examples of overseas licensing policies were selected based on their prominence in the international literature (and therefore the availability of information on the policy and its effectiveness), and the similarity of the country/state's regulatory framework to New Zealand.

Review of the academic and technical literature in the first step highlighted that much of the existing research on alcohol supply policy mechanisms has come from Australia, the United Kingdom and the United States of America. It was decided that the review of overseas policy mechanisms would focus on those employed by licensing authorities in the UK and Australia, due to similarities of their regulatory frameworks to New Zealand. Regulation of alcohol supply in the United States has focused on enforcement of the minimum drinking age, and is generally recognised as relatively permissive with regard to outlet licensing in 'license states' (Cook, 2007).

The regulation of alcohol supply in both the UK and Australia occurs through a multi-level governance framework, where the national or state government creates legislation

on the sale and supply of alcohol, and local authorities are responsible for responding to legislation through local policies and planning. State and local authority approaches to regulating the supply of alcohol therefore provide a useful reference point for the development of Auckland's local alcohol policy in response to changes in national legislation.

To explore the range of policy mechanisms used by overseas licensing authorities, the review analysed the acts and policies of several national/state governments and local authorities within the UK and Australia. Within the UK, the Licensing Act 2003 is the licensing legislation for England, Wales and Northern Ireland, while Scotland has introduced its own Licensing (Scotland) Act 2005. The review examines both acts and the policy statements of four English and one Scottish local authority:

- City of London
- London Borough of Lewisham
- Newcastle City Council
- Manchester City Council
- City of Edinburgh.

The review of Australian laws and policies included Australia's three largest states (by population) and each state's largest city council:

- New South Wales – City of Sydney
- Victoria – City of Melbourne
- Queensland – City of Brisbane.

For each policy issue, the key elements of each authority's liquor licensing law or policy that related to the policy issue were summarised in a table. By comparing the acts and local policies developed within each country, the key policy mechanisms employed by England, Scotland and the three Australian states (including their selected local authorities) were identified. These policy mechanisms are summarised in sections 1.2, 2.2 and 3.2 of this review. Detailed information on each country/state/local authority's policies is set out in tables in appendices 2, 4 and 7.

Comparison of the alcohol supply policy mechanisms used by England, Scotland and Australia enabled the identification of a set of 'best practice' policy mechanisms for each policy issue. In the third step, available evidence on the effectiveness of these best practice policy mechanisms was gathered from the academic literature, technical reports and lead organisation recommendations. Studies that reported on the effectiveness of one or more policy mechanisms in reducing alcohol-related harms were summarised in tables for each policy issue. Information recorded for each study included the

legislative/policy setting, details on the policy mechanism assessed, and key study findings on changes in alcohol-related harms associated with the policy mechanism.

However, scientific studies on policy effectiveness were not available for many of the 'best practice' policy mechanisms identified. In these cases, the analysis of effectiveness relied on the recommendations made by leading academics (e.g. Babor) and organisations (e.g. the WHO) in alcohol policy and harm minimisation.

Based on this review of the available evidence, the key findings and recommendations on the effectiveness of each policy mechanism are reported in sections 1.3, 2.3 and 3.3. The detailed tables of scientific studies on policy effectiveness are included in appendices 5 and 8.

Alcohol Supply Policy Option 1: Density of licensed premises

The academic literature identifies the density of alcohol outlets as a key factor influencing the physical availability of alcohol, and a key policy mechanism with which to regulate alcohol supply (Babor et al., 2010). Most studies on the impacts of liquor outlets draw on 'availability theory', where negative social outcomes are linked directly or indirectly to the availability of alcohol, in this instance determined by outlet density (Cameron et al., 2009). The causal link assumed to underpin this relationship is an increase in per capita rates of consumption with greater alcohol availability.

Livingston et al. (2007) expanded upon availability theory by identifying two key explanations for the theoretical increase in consumption with higher alcohol density: proximity and amenity. Higher outlet density is theorised to increase the *proximity* of outlets to the target population, resulting in price competition and lower purchase (e.g. travel) costs, which contribute to higher levels of consumption. Clustering of premises is also theorised to affect the *amenity* of an area by creating popular drinking spots and attracting heavy drinkers, resulting in higher levels of alcohol consumption in that area. Clusters may therefore act as attractors of trouble, resulting in 'crowds of young people, in various stages of intoxication, moving between outlets or spilling out onto the streets at closing time' (Livingston et al., 2007). Higher levels of alcohol consumption are expected to result in higher levels of alcohol-related harm, including drink-driving, violence and property damage (Babor et al., 2010). Different types of density effects (outlet proximity, accessibility, clustering) may be more or less significant for different outlet types (on- and off-premises licences), resulting in spatial differences in the nature and number of alcohol-related harms. For example, drink-driving related crashes are most common in areas with high concentrations of on-premises licences (Chikritzhs et al., 2007). The availability of alcohol (as determined by outlet density) therefore affects both overall levels of consumption and alcohol-related harms, and the development of spatial patterns of consumption and harms.

Consequently, a number of individuals and organisations have suggested licence density controls as a key mechanism to reduce alcohol-related harm, by increasing the opportunity costs associated with obtaining alcohol and preventing the development of outlet clusters (Babor et al., 2010, Campbell et al., 2009, Gruenewald, 2011). Such controls typically influence the number of outlets in an area or the proximity of outlets to one another. The effectiveness of density controls have become a research focus in recent years, resulting in a wealth of academic studies that investigate the relationship between alcohol outlet density, alcohol consumption and the incidence of alcohol-related harms.

1.1 Review of evidence for the policy issue

This section reviews the available literature on alcohol outlet density (AOD) to identify the strength of evidence for the theoretical relationship between outlet density, alcohol consumption and alcohol-related harms. Relevant literature was identified through searches of academic databases. The search identified 28 academic papers and professional reports that contained empirical evidence on the relationship between alcohol outlet density and harms, including studies that used primary data and those that analysed the results of other studies. Each study was analysed to identify its focus, setting, density measure, method/data source and key findings related to alcohol outlet density. The findings for each study were described in terms of the nature of the relationship between outlet density and alcohol-related harms (positive, negative or no relationship), and its statistical significance. Where numerical evidence was available, quantitative descriptions of the relationship were included. The results of this analysis are documented in Table 4, Appendix 1.

Comparative analysis of the studies investigating the effects of alcohol outlet density highlighted significant variability in the location of density research, the way in which studies define density, their methods and the outcomes they assess:

- The majority of studies of alcohol outlet density were based on cities and regions in the UK, USA, Australia and Norway. There are also a few studies that were conducted in New Zealand and South America, and a few that focused on small towns. No studies focused specifically on rural areas.
- A range of measures were used to compare outlet density across different areas. The most common measures were the number of licensed outlets per unit area (e.g. km^2), per unit population (e.g. 10,000 residents) and per administrative area (e.g. zip code, local government area). A shift in focus from proximity to 'access' has resulted in several studies reporting the number of outlets per roadway mile/kilometre (e.g. Freisthler et al., 2009). More recent studies have used GIS analysis to identify the proximity of alcohol outlets to residential addresses or university campuses. These studies report density in terms of distance to the nearest alcohol outlet (e.g. Donnelly et al., 2006), or the number of outlets within a specified radius from the residential address/campus (e.g. Connor et al., 2011). In several cases the total volume of alcohol consumed per head of population was used as a measure of density, due to recognition that outlet counts do not reflect outlet size or capacity (Chikritzhs et al., 2007).
- The most commonly used method of analysis is the cross-sectional ecological study. Cross-sectional studies examine how the distribution of variables is related in space using a combination of GIS and statistical analysis. Ecological studies

are those that infer individual-level causal processes from these population-level spatial patterns. More recent cross-sectional studies have used multi-level hierarchical models to analyse their results (e.g. Freisthler et al., 2009).

- A small but significant portion of studies used temporal datasets to conduct longitudinal analyses of the relationship between outlet density and alcohol consumption and harms. These are seen as being more likely to provide evidence of a causal link (Livingston et al., 2007). The review also identified a number of 'natural experiment studies', which compare the incidence of alcohol-related harms prior to and following the introduction of outlet density policies.
- Studies examined alcohol-related harms using data from police records, hospital admittances, health agency records, surveys of populations of interest, vehicle accident statistics and child protection records
- The 'outcomes' that most commonly constituted the focus of the studies included crime rates, assaults, vehicle accidents, alcohol-related hospital admittances and property damage. Several studies focused on drinkers or neighbours experiences/perceptions of alcohol-related harms (Donnelly et al., 2006, Kypri et al., 2008). A number of studies focused on harmful drinking patterns as an outcome of outlet density (e.g. Scribner et al., 2008), while others included alcohol consumption as an explanatory variable (cf. Connor et al., 2011).

The described variability in the focus and approach of studies of outlet density is reflected in the variability of results on the relationship between alcohol outlet density and alcohol-related harms. All studies identify at least one positive, statistically significant relationship between alcohol outlet density and an alcohol-related harm. Significantly, both spatial and longitudinal analyses of alcohol-related harms have suggested a positive relationship between outlet density and the incidence of harms (e.g. Livingston, 2008a, Livingston, 2008b). However, many studies also found no significant relationship between density and a particular measure of harm, while some report negative relationships between outlet density and an alcohol-related harm (e.g. Escobedo and Ortiz, 2002, Kavanagh et al., 2011).

Overall, the studies in this review found outlet density to be positively associated with the following alcohol-related harms:

- assaults and other types of violence (Gruenewald and Remer, 2006, Burgess and Moffatt, 2011, Liang and Chikritzhs, 2011, Day et al., 2012)
- problem drinking, such as drunkenness and binge drinking (Connor et al., 2011, Kypri et al., 2011), especially among young people (Weitzman et al., 2003, Scribner et al., 2008, Kypri et al., 2008)
- child abuse and neglect (Freisthler et al., 2007, Freisthler et al., 2004)

- self-inflicted injury and suicide (Escobedo and Ortiz, 2002)
- drinking and driving (Treno et al., 2003), alcohol-related vehicle accidents (Gruenewald et al., 1996, Escobedo and Ortiz, 2002, Chikritzhs et al., 2007) and pedestrian collisions (Lascala et al., 2001)
- property damage and other neighbourhood problems with drunkenness (Wechsler et al., 2002, Donnelly et al., 2006)
- crime/police incidents (Cameron et al., 2010, Gyimah-Brempong and Racine, 2006)

In addition, a small number of studies have identified increased levels of alcohol-related harms for 'clustered' premises. Clustering – the concentration of premises within a short distance of one another - is theorised to have a different impact on the incidence of harms than 'high density', due to the increased ability of patrons to move between premises (Babor et al., 2010). Cross-sectional studies have identified that clustering is associated with the increased probability of alcohol-related crashes (Gruenewald et al., 1996), pedestrian road injuries (Lascala et al., 2001) and violent assaults (Livingston, 2008b, Gruenewald and Remer 2006). These increases in harms are partly attributed to the larger number of people moving through a cluster of premises (on foot or in vehicles), resulting in greater potential for collisions or violent encounters (Lascala et al., 2001).

However, the nature and strength of reported relationships for each harm vary significantly between studies, with some studies reporting different or even contradictory results. Cameron et al. (2009) note that 'there are a number of important confounding variables identified in the research: variables that may mediate or affect the relationship between liquor outlet density and outcome variables.' The variability in findings has been attributed to:

- The location of the studies – the type and incidence of alcohol-related harms are argued to be strongly influenced by local factors, including the drinking culture, policy environment, setting in which alcohol is consumed, predominant land use (residential or commercial), and the population density, deprivation and demographics (Cameron et al., 2009, National Drug Research Institute, 2007, Gruenewald et al., 1996)
- The type of density measure used, and the extent to which it is relevant to local drinking patterns. Liang and Chikritzhs (2011) argue that 'count' based measures of density do not capture variability in outlet characteristics (e.g. size), and consequent differences in outlets' impact on alcohol availability (e.g. through price competition). They recommend the volume of wholesale alcohol purchases by

- The choice of geographical unit used to measure density; commonly used units include direct distance or travel distance (from home or school), administrative unit (e.g. post code) or area (km^2). Correlation analyses of density and harms across administrative units are noted to be particularly problematic, because large unit analyses tend to average out local variation, while small unit analyses do not account for the potential 'spill over' of density effects into neighbouring areas (see Chikritzhs et al., 2007). The roadway travel distance to the nearest outlet(s) (from a residential address, campus or other location) is generally recommended as an accurate measure of outlet accessibility (Day et al., 2012).
- The types of alcohol outlets assessed (especially on- versus off-premises (see Stockwell and Gruenewald, 2004))
- The datasets used to measure harms. The use of police report statistics and hospital admissions data are particularly problematic, as they lack consistent recording of the role of alcohol in incidents and the last place of drinking, making it difficult to assess the incidence of alcohol-related events and its relationship to outlet type and location (Chikritzhs et al 2007). Furthermore, police and hospital reports only reflect a proportion of alcohol-related harms. In recent years, surveys have been used to obtain 'self reports' on the incidence of alcohol-related harms (e.g. Kypri et al., 2008).
- The role of other programs or policies in mitigating alcohol-related harms (e.g. changes in policing activity, advertising campaigns). Such programmes may affect the relationship between outlet density and harms or the reporting of harms, disrupting spatial or temporal patterns in alcohol-related harms, and making it difficult to establish correlations or causal links. For example, differences in police monitoring or enforcement may be a contributing factor in reported patterns of drink-driving (Stockwell and Chikritzhs, 2009).
- Methodological limitations, including spatial autocorrelation, limited timeframe of analysis, lack of recognition of external influences (spatial or temporal patterns) and limited number of data. Most studies now use regression analyses to separate out the effects of 'confounding' variables (e.g. area deprivation) on outlet density and the incidence of alcohol-related harms (e.g. Day et al., 2012). Some studies also include spatial autocorrelation analyses, to account for potential 'spill over' effects between neighbouring units of analysis (e.g. Kavanagh et al., 2011).

The results of this review are consistent with the findings of other reviews of the alcohol outlet density literature. In Australia, both the National Preventative Health Task Force (2008) and the National Drug Research Institute (2007) conclude that recent research in

Australia and overseas has demonstrated consistent links between the density of alcohol outlets and increased levels of violence. A number of reviews of the international academic literature have reported consistent evidence for the positive relationship between alcohol outlet density, consumption levels and the incidence of alcohol-related harms, including violence, crime, medical harms and drink-driving accidents (Livingston et al., 2007, Anderson et al., 2009a, Campbell et al., 2009, Popova et al., 2009, Gruenewald, 2011, Chikritzhs et al., 2007). However, as with this review, most reviews of international studies also identify significant variability in results on the relationship between alcohol outlet density and a range of outcome variables (Livingston et al., 2007, Cameron et al., 2009, Popova et al., 2009). Several authors note that relationships with drink-driving and road crashes in particular tend to be less consistent (Chikritzhs et al., 2007, Campbell et al., 2009). As with this study, this variability is in part attributed to the range of methods used, data quality and access, choice of geographical unit and outlet density measure, licence type, geographic context, underlying assumptions and analytical error (Chikritzhs et al., 2007, Cameron et al., 2009). Several reviewers stress the context-specific nature of density effects, and the need to consider the particular relationships (including drinking behaviours, socio-economic differences and harms associated with outlet types) underpinning harms in a particular place (Livingston et al., 2007, Gruenewald, 2011).

Overall, preceding reviews support the findings of this review, that the international literature provides strong evidence of the relationship between alcohol outlet density and a range of harms, despite this variability:

> *"A general finding is that whether there are a few studies, or even one, or a number, with focus on a specific 'dependent variable', higher AOD tends to be associated with higher rates of damage, harm or problems."* (Popova et al., 2009)

1.2 Overseas policy mechanisms: density of licences

This section reviews the outlet density mechanisms contained in overseas governments' and councils' liquor licensing policies. Few governments regulate outlet density directly; instead they set policies for the issuing of further licences and licence extensions, thereby controlling changes in the density of outlets. Many governments also use policy mechanisms to manage the harms associated with high outlet densities, particularly outlet clusters. Recent reforms in alcohol policy in the United Kingdom and Australia have formed the focus of this review, due to the similarity of their legal and governance frameworks to those in New Zealand. The purpose of detailing the density provisions contained in each country's national/state and local licensing policies is to provide 'best practice' examples of density mechanisms to inform the development of Auckland Council's local alcohol policy.

In the UK, liquor licensing is regulated at the national scale through legislation, and implemented at the local scale through council policy statements. National legislation defines the objectives for local licensing policies and the provisions available to local council to implement the objectives. In Australia, state governments similarly set state-wide liquor licensing legislation, which is implemented by local licensing authorities. Both the UK and Australian state governments have introduced alcohol outlet density controls in their recent revisions of national/state licensing legislation in an attempt to minimise the harms resulting from high concentrations of alcohol outlets, particularly in urban areas. These 'best practice' policy mechanisms will form the basis of this review. The UK and Australian legislation relating to the sale and supply of alcohol is summarised in terms of its overall direction (context), followed by each country's outlet density policies. The section concludes by identifying the main types of policy mechanism used to control the density of alcohol outlets in the UK and Australia. The effectiveness of these policy mechanisms is reviewed in section 1.3.

1.2.1 Context: licensing legislation in the UK and Australia

UK legislative context: The Licensing Act 2003

The Licensing Act 2003 repealed previous legislation relating to liquor and transferred responsibility for licensing from the Magistrates Courts to local authorities. Local authorities are required to develop a licensing policy that provides guidance in relation to their licensing decisions, and to review this every three years. The government releases guidance notes to assist authorities in preparing their policies.

The Act sets out four broad objectives that must be promoted by licensing authorities: the prevention of crime and disorder; public safety; the prevention of public nuisance; the

protection of children from harm. All applications for premises licences must be accompanied by an operating schedule, which sets out the steps that the premises will take to promote the licensing objectives. Responsible authorities (public agencies with an interest in licensing issues such as police, fire brigade, Environmental Health etc) must be notified of applications and are entitled to make representations to the licensing authority about the application.

The Act contains very few mandatory conditions. Instead, the government guidance notes provide a list of possible conditions under each of the four objectives. The licensing authority may not impose any conditions unless it has received relevant representations and has been satisfied at a hearing of the necessity to impose conditions. It may then impose conditions necessary to promote one or more of the four licensing objectives. When there are no relevant representations, the licence must be granted subject only to conditions that are consistent with the operating schedule and the mandatory conditions in the Act.

Scottish legislative context: Licensing (Scotland) Act 2005

Unlike Wales and Northern Ireland, Scotland has elected to create its own licensing legislation rather than operate under the provisions of the UK Licensing Act 2003. Nicholls (2012) highlights that the Licensing Scotland Act 2005 contains a number of provisions not present in England and Wales' legislation, including:

- A fifth licensing objective concerning the protection of public health;
- The requirement for a policy on overprovision in statements of licensing policy;
- A stated presumption against 24-hour licences;
- The restriction of off-sales to 10 am–10 pm; and
- A 'public' right to object to licence applications.

Section 6 of the Licensing (Scotland) Act 2005 requires all licensing authorities to publish a statement of licensing policy every three years. The licensing authority is responsible for granting licences for the sale of alcohol by retail and in members' clubs, including variations on licences and extended hours applications.

Australian legislative context

In Australia, each state government is responsible for setting alcohol policies and granting liquor licences. The retail sale of alcohol in Australia requires that a licence be obtained from the liquor licensing authority of the State or Territory in which the sale takes place. The state and territory liquor acts and regulations specify jurisdiction-wide controls over matters such as trading hours, along with restrictions on individual licences targeted at reducing alcohol-related problems in particular localities. Such additional

restrictions have included banning certain types of alcoholic beverages, reducing trading hours, and limiting the issue of new licences (National Drug Research Institute, 2007).

The liquor licensing acts and authorities responsible for regulating the sale and supply of alcohol in Queensland, Victoria and New South Wales are as follows:

Queensland:	Liquor Act 1992 (amended as of 1 Jan 2013)	Office of Liquor and Gaming Regulation
Victoria:	Liquor Control Reform Act 1998 (amended as of 13 February 2013)	Victorian Commission for Gambling and Liquor Regulation
New South Wales:	Liquor Act 2007 (currently under statutory review)	Casino, Liquor & Gaming Control Authority (CLGA)

1.2.2 Comparison of overseas policy mechanisms for licence density

Regulating outlet density in the Licensing Act 2003

The guidance notes for the Licensing Act 2003 require authorities to consider 'cumulative impact' of premises on the licensing objectives when developing their policies. Cumulative impact is defined as "the potential impact on the promotion of the licensing objectives of a significant number of licensed premises concentrated in one area" (s13.19 Amended Guidance, 2012[1]). The cumulative impact of premises is therefore a description of the harms that can result from having a high density of premises within a particular area. Licensing authorities may adopt a policy on cumulative impact that allows them to refuse licence applications where a cumulative impact is already being experienced, thereby preventing further increases in outlet density in that area.

Licensing authorities may adopt a cumulative impact policy for a particular area based on evidence that crime, disorder or public nuisance are occurring at or outside licensed premises, or in connection with such premises. All four of the English local councils included in this review had adopted a cumulative impact policy as part of their 'statement of licensing policy'. The cumulative impact policies allow councils to refuse applications for new licences or variations of existing licences when a relevant representation is received concerning a negative cumulative impact. Representations may be made by residents, responsible authorities (the police, fire brigade, Environmental Health) and other parties affected by an application. To be relevant, representations must relate to

[1] Home Office 2012 Amended guidance issued under S182 of the Licensing Act 2003

the likely impact of the licensed activity on one of the objectives in the Licensing Act 2003. It is up to the party making the representation to provide evidence that the addition of the premises would cause the cumulative impact claimed.

The London Borough of Lewisham, Newcastle City Council and Manchester City Council have targeted their cumulative impact policies at specific city locations by creating 'special policies' for areas where there are problems resulting from concentrations of licensed premises. The special policies state that there is a rebuttable presumption that applications for licences in these areas will normally be refused, unless the applicant can demonstrate that their licence will not add to the existing cumulative impact. The council still requires a representation from a relevant party in order to carry out this presumption.

Table 5 (Appendix 2) contains further details on the cumulative impact provisions adopted by English councils in their statements of licensing policy.

Regulating outlet density in the Licensing (Scotland) Act 2005

This section examines whether the additional provisions in the Licensing (Scotland) Act 2005 have affected the regulation of outlet density by analysing the policies of the City of Edinburgh Licensing Board (the licensing authority for the City of Edinburgh local government area).

In accordance with the requirement of the Licensing (Scotland) Act 2005, the Edinburgh Licensing Board Policy Statement 2010-2013 contains a policy on 'overprovision'. This is a statement on the extent to which the Board considers there to be overprovision of licensed premises in any locality. As with the English councils' 'cumulative impact' policies, overprovision policies are intended to prevent further increases in licence density in areas where current concentrations of licensed premises are associated with high levels of disturbance.

The Edinburgh Licensing Board Policy Statement 2010-2013 identifies a number of areas that are overprovided with pubs and off-sales premises, and states a presumption against the granting of any further licences of these types. As with the cumulative impact policies, all applications for licences or variations on existing licences will be considered upon their merits. However, the Policy also states that the Board will consider very carefully applications for off-sales premises or large drinking establishments, and that such applications will be viewed as inconsistent with the licensing objectives unless there is evidence to the contrary.

In comparison with the English councils' cumulative impact policies, Edinburgh's overprovision policy specifically directs the Board to consider the type as well as the number of premises in an area when granting applications. Based on representations received, it states a presumption against increasing the current concentration of pubs,

off-sales premises and large drinking establishments in specified areas. In addition, the overprovision policy states that 'the Board is willing to consider applications for restaurants, hotels and other premises which would not increase the problems deriving from the current high concentration of licensed premises in the locality and which will either fill gaps in existing service provision or will significantly enhance amenity for residents and visitors.' Edinburgh's overprovision policy is based on the assumption that some premise types are more likely to cause harms than others, and that alcohol outlet density is best regulated conjointly with premise type.

Regulating outlet density in Australian states

The regulation of liquor licensing by state governments has resulted in significant inter-state variability in mechanisms for the manage alcohol outlet density. Neither Queensland's Liquor Act 1992 nor Victoria's Liquor Control Reform Act 1998 make specific reference to licence density or the cumulative impact of licensed premises. However, Victoria's Liquor Control Reform Act 1998 stipulates that 'it is a condition of every licence and BYO permit that the use of the licensed premises does not contravene the planning scheme that applies to the licensed premises under the Planning and Environment Act 1987.' The requirement to comply with the planning scheme enables licensing authorities to refuse applications for additional premise licences (or the modification of existing licences) on the basis of outlet density. Before deciding on an application the authority must consider the zoning and use of the land, and the nature and use of the surrounding land, including the proximity of the site to other licensed premises. This includes consideration of the cumulative impact of the proposed and any existing liquor licence on the amenity of the area. Applications are required to include a location plan, showing the proximity of the premises to other licensed premises. Licensed premises operating after 11pm are also required to demonstrate how they will address amenity impacts, including potential cumulative impacts where there are existing late night venues nearby. Outlet density is therefore managed through the refusal of applications for additional licences on the basis of impacts on area amenity/sensitive land uses, or the cumulative impact of premise clustering.

For example, the Melbourne Planning Scheme's policy for licensed premises includes the objective: 'to ensure that the cumulative impacts of licensed premises are assessed where venues are clustered in the one location' (Clause 22.22). The policy also sets out permit provisions for different zones to ensure that the cumulative impact of outlet density is appropriately controlled for different area types. In the Capital City and Docklands Zone, taverns, hotels and nightclubs of an appropriate size and which have appropriate noise attenuation are encouraged, while new licensed premises are discouraged from locating in residential zones or where the predominant surrounding land use is residential. In comparison with the Edinburgh Licensing Board, which

focuses on the impact of different premise types, Melbourne's licensing authorities are concerned with assessing outlet impacts for different land use types.

The Victorian Government created Practice Note 61 'Licensed premises: Assessing cumulative impact' (2011) to guide councils on cumulative impact when assessing licence applications under the planning scheme. These guidelines assist councils and applicants to identify the extent to which a proposal for a new or modified licensed premise is likely to contribute to overall cumulative impact within an area. The Practice Note directs councils and permit applicants to consider the planning policy context (e.g. zoning), surrounding land use and amenity, mix of licensed premises, and transport and dispersal routes for an area, along with impact mitigation measures, in order to assess the cumulative impact of a licensed premises. The area included in a cumulative impact assessment is generally all land within a 500m radius of the proposed venue.

In contrast with Victoria's state-wide planning-based management of licence density, New South Wales is currently using 'temporary' liquor licence freezes to prevent further increases in outlet density in problem areas. The Liquor Act 2007 (currently under review) did not contain specific provisions regarding the density of licences or cumulative impact of premises. However, recent issues with violence and crime rates in areas of high outlet density have resulted in the Government placing a temporary freeze on applications for new and extended licences (see Appendix 2, Table 8). The intention of the freeze is to prevent an increase in the patron capacity or the number of consumers entering the freeze precinct. However, the freeze restrictions do not apply to small bar licences, reflecting again the interrelation of outlet density and type/size in the incidence of alcohol-related harms. The liquor licence freeze was introduced in 2009 and applied to three precincts; it has subsequently been extended in two precincts until December 2013/2015. Based on the development of other regulatory initiatives and tools, one precinct is no longer subject to the liquor freeze. The licence freezes are therefore only a temporary density control measure, intended to prevent further harms resulting from increases in density in problem areas. While the freezes are in place the NSW government is investigating a number of other restrictions, tools and mechanisms to provide long-term management of outlet density. This includes research into the cumulative impact of licensed premises in NSW and the trial of an 'Environment and Venue Assessment Tool' (Office of Liquor, Gaming and Racing 2013).

1.2.3 Summary of alcohol outlet density policy mechanisms

The main types of policy mechanism used to control the density of alcohol outlets identified in this review of UK and Australian liquor licensing policies are:

- **Cumulative impact policies – region wide**

  Region-wide cumulative impact policies require the applicant and licensing authority to consider the cumulative impact of the new licence or variation on the local area when determining an application. Cumulative impact may take into consideration the size and trading hours of the venue, in addition to its proximity to other premises and land uses. In the State of Victoria, this involves submitting a location plan and identifying potential impacts on the surrounding area (within a 500m radius of the proposed site), including proximity to existing licensed premises. In Victoria the identification of cumulative impacts may form the basis for objections on the grounds of 'amenity'. In the City of London, the cumulative impact of a premises may form the basis for representations against an application.

- **Cumulative impact policies – area specific**

  Area-specific cumulative impact policies are usually created for areas with an existing concentration of licensed premises that have experienced high levels of alcohol-related harms. The policies may apply to licences/premises of a particular type (e.g. pubs and off-licences in Edinburgh). The cumulative impact policy for that area may contain a rebuttable presumption that applications will be refused where representations against the application are made (e.g. Newcastle, UK). Alternatively, the area policy may require particular management actions of applicants, including setting trading hours, increasing security measures or participating in a local agreement. In Edinburgh, the cumulative impact policy encourages applications that will result in a mix of premises types.

- **Temporary freeze on licences**

  Several councils have set a temporary freeze on the approval of applications for new or extended licences. These freezes apply to specified areas with existing high densities and high levels of alcohol-related harms, for a set time period. Temporary freezes effectively set the current density of licensed premises (including the number, type and size of premises) at their present level.

- **Plan zoning**

  In Australia, local councils use existing land use zones to specify appropriate types and density of licences/premises for different land uses (areas). Applications for new or varied licences will therefore be considered based on the extent to which they fit with the land use zoning and existing land use (including current density of premises). This may involve consideration of the cumulative impact of the proposed licence on the current land use.

These policy mechanisms have been identified as 'best practice' based on their incorporation in national, state and local policies through the recent licensing reforms in the UK and Australia. Indeed, several of these policy mechanisms – particularly cumulative impact areas – have been taken up by an increasing number of local councils/authorities in recent years due to their perceived success (National Drug Research Institute, 2007).

All of these policy mechanisms are implemented through decisions on applications for new licences and variations of existing licences. The density of alcohol outlets and their impact is therefore controlled through the refusal of applications or by specifying additional requirements or conditions for approved applications. In some cases (e.g. Scotland and Victoria), the impacts of outlet density may also be managed through the encouragement of desired licence types. The review has not found any evidence of maximum density provisions being used by overseas councils or governments (with the exception of NSW, where the existing density has temporarily been fixed as a maximum). Another density mechanism not used by the reviewed Australian and UK councils is proximity control, whereby new premises are not permitted within a set distance of existing premises. Proximity controls have been used by some state and local authorities in the US, with limited success (see Grubesic et al. (2012) – 48% of liquor outlets violated the proximity controls).

1.3 Evaluation of the effectiveness of outlet density policy mechanisms

This section summarises the available evidence on the effectiveness of alcohol outlet density mechanisms in reducing alcohol-related harms. This summary is based on a review of the academic literature and professional reports, which sought to identify any evaluations of policy changes involving outlet density. The review focused in particular on evaluations of, or reflections on the effectiveness of the density policy mechanisms identified in section 1.2. The results of the review are summarised below, followed by a review of recommendations on outlet density mechanisms from the alcohol policy literature. Key considerations for the effective implementation of outlet density mechanisms are highlighted.

Despite the large volume of research on the relationship between alcohol outlet density and alcohol consumption and related harms, there has been limited evaluation of the effectiveness of density mechanisms in reducing alcohol-related harms. No study was found in the academic or professional literature that evaluated the effectiveness of the cumulative impact policies or zoning mechanisms identified in section 1.2. The lack of evaluation of outlet density policies is also noted in the literature:

> *"direct studies of the effects of policies changing density on alcohol-related public health outcomes have not been conducted…" (Campbell et al., 2009)*

> *"There are few if any studies evaluating how local decisions are made regarding policies affecting alcoholic beverage outlet density or the consequences of such policy changes." (Campbell et al 2009)*

> *"This knowledge has not… been developed into an evidence base on how the manipulation or control of outlet density can be used to reduce alcohol-related harm." (Loxley et al., 2004)*

Campbell et al. (2009) have conducted the most thorough review of studies on outlet density policy to date. They suggest several reasons for this lack of evaluation, including:

- a lack of data on alcohol outlets and outcomes in communities where policy changes have been implemented
- gradual change in outcomes in response to outlet density policies
- concurrent changes in other alcohol policies (e.g. trading hours), which make it difficult to isolate cause and effect

Other reasons for the lack of evaluation of policy effectiveness could include the recent date of alcohol policy reforms in Australia and the UK, which have provided little time

and data to test the effectiveness of density controls. This lack of opportunity for rigorous evaluation so far is heightened by a bias in the alcohol policy literature towards Australian and UK case studies. A World Health Organisation report (2011) states that outlet density regulations are a popular policy mechanism in countries in the eastern Mediterranean region, and yet few studies of outlet density mechanisms in these countries have been published in English.

Evidence of the effectiveness of density mechanisms

In the absence of primary evidence on the effectiveness of alcohol outlet density controls, Campbell et al (2009) used a range of secondary evidence to assess the impact of density changes on excessive alcohol consumption. This included 'before-after' studies of the impact of privatizing alcohol sales (associated with increases in density), bans on alcohol sales (associated with decreases in density) and other licensing policies that directly affect outlet density. Longitudinal studies of the relationship between changes in outlet density and alcohol-related harms were also included. Review of the before-after and longitudinal studies found that most "reported that greater outlet density is associated with increased alcohol consumption and related harms, including medical harms, injuries, crime, and violence." (Campbell et al., 2009). The review therefore supports the findings of the longitudinal studies and natural experiments cited in section 1.1, which concluded that measured increases in outlet density are correlated with increases in harms (Gruenewald and Remer, 2006, Livingston, 2008b, Day et al., 2012). Based on the findings it is expected that a decline in harms will occur with the introduction of controls on maximum density or a reduction in density (see Campbell et al., 2009, Burgess and Moffatt, 2011). However, there are limitations on the use of longitudinal studies to evaluate the effectiveness of density mechanisms, including the influence of 'contextual' variables on changes in outcome variables (e.g. harms). Furthermore, Campbell et al (2009) note that the identified relationship is largely drawn from studies that "assessed the effects of increased outlet density, which is a consequence of the general trend toward liberalization of alcohol policies associated with outlet density. Few data were found from which to draw inferences about regulations that control or reduce outlet density." Studies that did report on 'reduced density' investigated the effect of local area bans.

Despite the lack of evaluation of density policies, section 1.2 highlights that density mechanisms are widely used in national, state and local authorities' licensing policies. Most licensing authorities cite the published relationship between density and harms, or local experiences of harms in high-density areas as a rationale for density provisions. While none of the authorities reviewed had formally evaluated the impact of these density provisions, the continued use and uptake of cumulative impact policies by councils suggests that the general experience of density controls has been positive.

Indeed, Newcastle City Council identified that their current cumulative impact areas "found favour with residents and the licensed premises have generally upheld the licensing objectives", and have consequently proposed three new cumulative impact areas.

As demonstrated in Table 1, the well-evidenced positive relationship between alcohol outlet density, alcohol consumption and related harms has resulted in the general promotion of density controls as a key regulatory mechanism in reducing alcohol-related harms.

Table 1: Conclusions on outlet density mechanisms in professional and academic reviews

Review	**Conclusion**
Babor et al., 2003	Effectiveness rating: 2/3 Breadth of research support: 3/3 Cost to implement: low
World Health Organisation, 2004	"legislative interventions … to control outlet density have been effective in lowering alcohol-related problems."
Stockwell and Gruenewald, 2004	The studies "strongly suggest that limits on outlet density may be an effective means of controlling alcohol problems and need to be taken more seriously as an effective policy tool for the reduction of alcohol-related harm."
Loxley et al., 2004	"the overall evidence base remains clear that outlet density is a powerful driver of levels of consumption and harm. There is a need to develop and test a practical model for approving liquor licences so as to maintain a balance between meeting consumer demand and addressing public health and safety issues."
Casswell and Maxwell, 2005	"restricted density of liquor outlets [has] good evidence for effectiveness, with the potential to reduce drinking and alcohol-related problems."
National Drug Research Institute, 2007	"...international and national evidence indicates a particularly strong and consistent relationship between increased numbers of licensed premises and increased levels of violence. Planning and licensing decisions should be based on careful consideration of the likely benefits of restricting outlet density of licensed premises and equal consideration to the possible negative outcomes of unrestrained proliferation of licensed premises."
Livingston, 2008b	"The results suggest that there is a need for greater control over the proliferation of alcohol outlets across a wide range of communities"
Campbell et al., 2009	"the scientific evidence reviewed indicates that the regulation of alcohol outlet density can be an effective means of controlling excessive alcohol consumption and related harms"
Babor et al., 2010	"The research shows that the density of drinking outlets is correlated with the prevalence of alcohol-related problems, and therefore restrictions on density may be an effective antidote to intoxication, injuries and violence because they reduce the attractiveness and convenience of heavy drinking"

Considerations for the implementation of density mechanisms

In the context of the widespread recommendation of outlet density controls as a mechanism for reducing alcohol-related harms, it is important to consider the factors that may influence the implementation and effectiveness of density policies in place:

- The success of density controls may depend on the existing number and density of outlets. Roberts (2006) highlights that the policy mechanisms have no power to alter the number and size of existing licensed premises. Babor et al. (2003) and Casswell and Maxwell (2005) note that while large changes in outlet density can have a substantive effects on alcohol consumption and related harms, marginal changes are less likely to have an impact in existing high density areas. Livingston et al. (2007) suggest that targeting clusters is more likely to have an effect on binge drinking, violence and related harms.
- Policy implementation is a key element of effectiveness. Foster et al. (2009) found that only 17% of the UK local authorities surveyed had created a cumulative impact area.
- The effectiveness of density policies may differ for different licence types, particularly on-licence and off-licence premises (Room, 2004). The relationship between licence type and alcohol consumption and related harms may differ between places depending on socio-demographic characteristics, drinking culture, price and normalised patterns of behaviour. Gruenewald et al. (1996) therefore call for a 'biogeography' of community drinking patterns and alcohol problems, to ensure that density controls and other interventions are targeted at 'problem' licence types and areas.
- Region- and area-based cumulative impact policies target different sub-populations and types of alcohol-related harms (Campbell et al., 2009). Area specific cumulative impact policies usually target clusters of night-time premises, particularly pubs, bars and nightclubs, and therefore can be used to address binge-drinking, violence and property damage in these areas. Cumulative impact policies targeted at regions tend to address problem drinking, youth drinking, domestic violence, child abuse, drink-driving and long-term health issues associated with greater access to 'local' on-licence and off-licence premises.
- Controls on outlet density may result in unintended and adverse consequences due to changes in drinking behaviours. For instance, several authors suggest that lower outlet densities may result in increased rates of drink-driving accidents, as patrons have further to travel from on-licence premises (Burgess and Moffatt, 2011, Campbell et al., 2009).

- As the policies reviewed in section 1.2 illustrate, density mechanisms do not have to just limit the density of outlets, they can also incorporate management practices to control the effects of high densities of premises. Management approaches may include set trading hours and lockout policies, increased security measures, police surveillance and the provision of late night transport services.
- Spatially and temporally defined outlet density policies (i.e. cumulative impact areas and freezes) provide a reactive, flexible policy mechanism. This enables policy makers to respond to current issues associated with particular areas and premises types, based on evidence of alcohol-related harms. Policy makers are therefore able to apply, adjust or remove density controls based on changing patterns of harm and the effectiveness of the controls in minimising harms. However, such flexible, reactive policies require good monitoring data in order to respond to changes in the incidence of harms over time and provide evidence of alcohol-related harms (National Drug Research Institute, 2007). Several authors suggest that 'last place of drink' information for offenders can be captured in police records and used to more accurately monitor the impact of different premises/locations (e.g. Jones et al., 2009).

The findings of this review suggest that alcohol outlet density mechanisms can be an effective way to control the incidence of alcohol-related harms. However, a strong information base and ongoing monitoring is needed to ensure that the mechanisms are appropriate to the place and harms that they are intended to influence.

Alcohol Supply Policy Option 2: Trading hours of licensed premises

The academic literature identifies the trading hours of alcohol outlets as a key factor influencing the physical availability of alcohol, and a key policy mechanism with which to regulate alcohol supply (Palk et al., 2007, Stockwell, 2013). Licensing authorities typically regulate outlet trading hours by setting maximum hours of operation and alcohol sales, and placing conditions on outlet trading at particular times of the day or week. As with outlet density, studies on the impacts of trading hours draw on 'availability theory', where negative social outcomes are linked directly or indirectly to the temporal availability of alcohol (Babor et al., 2010). Multiple explanations have been suggested for the theoretical increase in harms with longer trading hours:

- increased alcohol availability, resulting in increased levels of intoxication among patrons (Chikritzhs and Stockwell, 2002)
- longer hours resulting in greater night-time disturbance to residential communities (Plant and Plant, 2005)
- taking other drugs to keep awake (Ragnarsdóttir et al., 2002)
- greater strain on physical (transport) and social infrastructure (especially police and medical services) (Newton et al., 2007)
- effects on area amenity by creating popular drinking spots and attracting heavy drinkers and disruptive individuals. Clusters of late-licensed premises in particular create attractors of disruptive behaviour (Humphreys and Eisner, 2010)
- Higher levels of alcohol consumption are expected to result in higher levels of alcohol-related harm, including drink-driving, violence and property damage (Babor et al., 2010).

However, a number of harms have also been identified in relation to early and fixed closing times. Early closing times have been found to result in patrons purchasing and consuming large quantities of alcohol before closing – the '6 o'clock swill' (Chikritzhs and Stockwell, 2002). This resulted in patrons leaving premises in an advanced state of intoxication, resulting in a range of alcohol-related harms (Plant and Plant, 2005). Fixed closing times in a region are also argued to have significant associated harms due to the mass movement of intoxicated patrons from bars to public spaces and transport at the same time (Livingston et al., 2007). Region-wide closing times have been associated with elevated levels of violence, crime and injuries, increases in alcohol-related crashes and queues at taxi stands and transport stops (Hahn et al., 2010). In some areas, differences in closing times between bars or regions have resulted in the increased

movement of customers to areas with later closing times, thereby adding to the incidence of alcohol-related vehicle accidents (e.g. Vinglis et al., 2006).

Consequently, a range of trading hour policy mechanisms have been suggested within the academic literature and implemented by licensing authorities (see Stockwell and Chikritzhs, 2009). While alcohol outlet trading hours are consistently identified as a key factor in the availability of alcohol and a key mechanism with which to reduce alcohol-related harms (Babor et al., 2010, Casswell and Maxwell, 2005, National Drug Research Institute, 2007, Stockwell, 2013), trading hour policies differ significantly. The effectiveness of trading hour policies have become a research focus in recent years, resulting in a wealth of academic studies that investigate the relationship between outlet trading hours and the type and incidence of alcohol-related harms.

2.1 Review of evidence for the policy issue

This section reviews the available literature on alcohol outlet trading hours to identify the strength of evidence for the theoretical relationship between trading hours and alcohol-related harms. Relevant literature was identified through searches of academic databases. The search focused on academic papers and a small number of professional reports that contained empirical evidence on the relationship between trading hours and harms, including studies that used primary data and those that analysed the results of other studies. Each study included in the review was analysed to identify its purpose/focus, setting, method/data source and key findings related to outlet trading hours. The findings for each study are generally described in terms of the nature of the relationship between trading hours and alcohol-related harms (positive, negative or no relationship) and its statistical significance. Where numerical evidence was available, quantitative descriptions of the relationship have been included. The results of this analysis are documented in Table 9, Appendix 3.

The studies included in this review examined the relationship between trading hours using a range of methods, outcomes and case study locations:

- The majority of studies of outlet trading hours were based on cities in Australia, with a few from the USA, UK and Canada, where liberalisation of licences and extended trading hours have occurred.
- The majority of studies have been focused on on-premises licences, especially bars, clubs, and hotels. Several studies examine off-licence/packaged alcohol trading hours.
- The most commonly used method of analysis was the ‘natural experiment’. The majority of studies examine changes in the incidence of alcohol-related harms in areas that have experienced changes in legislated trading hours. Of these

studies, most use a 'before and after' analysis to identify statistically significant differences between the pre- and post-implementation periods. Several conducted longitudinal analyses across the change period, allowing them to control for other temporal changes. Longitudinal studies are seen as being more likely to provide evidence of a causal link (Livingston et al., 2007).

- Of the natural experiments, most examined the effect of extended trading hours in terms of increased closing hours or days of trade. Several examined the effect of restrictions on closing hours and days of trade.
- Several studies used temporal datasets to identify patterns, or changes in patterns, in the hours and days in which alcohol-related harms occur.
- Some studies used controls, comparing the incidence of harms in areas where trading hour policies changed with those areas where policies remained the same. Some studies also looked for flow on effects of changes in trading hours on nearby locations.
- Studies examined alcohol-related harms using data from police records, hospital admittances, surveys of populations of interest and vehicle accident statistics.
- The 'outcomes' examined by studies included the volume of alcohol sales, crime rates, assaults, alcohol-related hospital admittances, homicides, vehicle accidents and breath alcohol levels. The availability of police record data meant that assaults and vehicle accidents were the most commonly assessed alcohol-related harm.

In comparison with outlet density, the relationship between trading hours and alcohol-related harms has received less attention in the academic literature. Fewer than 20 studies were found that used empirical evidence to explore the link between trading hours and alcohol-related harms since 2000. This paucity of empirical research is partly due to methodological limitations (Stockwell and Chikritzhs, 2009). The literature has been dominated by longitudinal studies of alcohol-related harms in areas that have experienced changes in legislated trading hours. However, concurrent changes in other factors, such as policing, driver licensing standards and other harm reduction mechanisms can make it difficult to attribute changes in the incidence of harms to changes in trading hours (Chikritzhs and Stockwell, 2002, Vingilis et al., 2008). Furthermore, few studies use controls or are able to link criminal offences and hospitalisations to the 'last place of drink', making it difficult to attribute causality (Stockwell and Chikritzhs, 2009).

Despite these methodological limitations, the results of the literature review provide consistent evidence of a positive relationship between trading hours and alcohol-related harms (see Table 9). Three studies examined temporal patterns in alcohol-related incidents (e.g. assaults) and found that incidents of harm are concentrated in time,

between 9pm and 4am on Friday and Saturday nights (Briscoe and Donnelly, 2001, Briscoe and Donnelly, 2003, Palk et al., 2007). Briscoe and Donnelly (2001) identified a peak in alcohol-related incidents coinciding with the closing time of licensed premises, while their 2003 study demonstrated that premises with extended trading hours experience a greater number of assaults. These findings provide clear evidence of a relationship between night-time trading hours and alcohol-related crime. Similarly, studies examining the effects of extended trading hour policies identified a range of statistically significant increases in alcohol-related harms:

- Increased alcohol sales, especially consumption of high alcohol content beverages (e.g. Chickritzhs and Stockwell 2002)
- Increases in the incidence of assaults (e.g. Chikritzhs and Stockwell, 2002) and temporal shifts in assaults to later in the evening (e.g. Vinglis et al., 2008)
- Increases in alcohol-related vehicle accidents and fatalities due to higher blood alcohol levels (e.g. Chikritzhs and Stockwell, 2006, McMillan and Lapham, 2006) and the movement of customers into areas with later closing times (Vingilis et al., 2006)
- Increases in overnight alcohol-related hospital attendances (Newton et al., 2007, Ragnarsdóttir et al., 2002)

Studies of driver breath alcohol content and drink-driving charges show more mixed results, with effects varying between patrons (e.g. largest increases among young males (Chikritzhs and Stockwell, 2007)) and hours of the night (e.g. increases in the 3-4am period (Vingilis et al., 2008)). Palk et al. (2007) notes that alcohol-related traffic accidents are one of the few types of harm that are not consistently linked with changes in trading hours. However, many studies of alcohol-related vehicle incidents have noted other factors that could have affected the results, including changes in police monitoring and driver-licensing standards (see Chikritzhs et al., 2002 and Vinglis et al., 2008).

In keeping with the positive relationship between trading hours and harms, the few studies of reductions in trading hours identified a decrease in alcohol-related harms. Douglas' (1998) study of restrictions on off-licence trading hours in a small town in Western Australia identified reductions in alcohol consumption, criminal charges, alcohol-related hospital presentations and incidents of domestic violence. Similarly, a study of restrictions on on-premise trading hours in Brazil found a significant decrease in the number of homicides (Duailibi et al., 2007).

The results of this review are consistent with the findings of other reviews that have been conducted on the relationship between trading hours and alcohol-related harms. Of the 14 peer reviewed studies examined by Stockwell and Chikritzhs (2009), 11 reported at least one significant adverse effect of increased hours or benefit from reduced hours.

Based on these findings, they conclude "the balance of reliable evidence from the available international literature suggests that extended late-night trading hours lead to increased consumption and related harms." Other reviews of the literature report similar results:

> *"there is strong and reasonably consistent evidence from a number of countries that changes to hours or days of trade have significant impacts on the volume of alcohol consumed and on the rates of alcohol-related problems. When hours and days of sale are increased, consumption and harm increase and vice versa."* (Babor et al., 2010)
>
> *"The majority of Australian studies have examined the effect of increased trading hours and almost all have shown that they have been accompanied by significantly increased levels of alcohol consumption and/or harms."* (National Drug Research Institute, 2007)
>
> *"It is noteworthy that… changes in hours or days in the sale of alcohol are related to drinking levels and also drinking-related harm. As reflected in the literature in this systematic review, the impact involves a wide range of variables, populations and dimensions, including pedestrians, young children, drivers, assaults, hospitalizations and chronic problems."* (Popova et al., 2009)
>
> *"International research and reviews examining the safety impact of extended liquor trading hours increasingly support the notion that escalated violence and alcohol-related harms are closely associated with increased liquor trading hours…"* (Palk et al., 2007)
>
> *"Large, broad changes in trading hours (e.g. whole days of sale added or taken away) are associated with significant changes in overall level of harm, although not necessarily with overall levels of consumption. There is recent Australian evidence that even small changes (e.g. later hours) can be associated with a significant local-level impact on alcohol-related violence. Recent research in NSW has identified that licensed premises with the highest levels of violence are far more likely to be those that trade between midnight and 3am."* (Loxley et al., 2004)

A review by Hahn et al. (2010) similarly provides evidence of a positive relationship between trading hours and harms, but notes that this 'effect' differs depending on the magnitude of the change in trading hours. Their review found that changing the hours of sale by more than 2 hours resulted in increases in alcohol-related harms, while there was mixed evidence for the effect of changes of less than 2 hours. As in this review, effects on alcohol-related harms have also been noted to vary between premise types (National Drug Research Institute, 2007).

2.2 Overseas policy mechanisms: Trading hours

This section reviews the trading hours policy mechanisms contained in overseas governments' and councils' alcohol policies. The purpose of detailing the trading hours provisions contained in each country's national/state and local licensing policies is to provide 'best practice' examples of trading hours mechanisms to inform the development of Auckland Council's local alcohol policy.

Recent reforms in alcohol policy in the United Kingdom and Australia have formed the focus of this review, due to the similarity in their legal and governance frameworks to New Zealand. Liquor licensing legislation is made at the country/state scale in both the UK and Australia, and sets the legislative context for licensing policies, defined at the 'local' council scale. This review describes the licensing policies of several councils in each country/state, in order to identify how national/state law is implemented in terms of local 'trading hours' provisions. The section concludes by identifying the main types of policy mechanism used to control outlet trading hours in the UK and Australia. The effectiveness of the trading hours policies in reducing alcohol-related harms is then assessed using available studies of the implementation and/or effects of the policies in section 2.3.

2.2.1 Comparison of overseas policy mechanisms for trading hours

Regulating trading hours in the Licensing Act 2003

There are no prescribed hours set out in the Licensing Act 2003. Government policy has moved away from the idea of set closing times as a reaction to problems with the previous regime, in which 11pm was the closing time for all licensed premises. However, the guidance notes state that there is no general presumption in favour of lengthening licensing hours and the four licensing objectives should be considered in determining hours.

The view of the Government is that the licensing authority is best placed to make decisions about licensed opening hours in its area as part of the implementation of its statement of licensing policy. The guidance notes state that trading hours can be restricted by the conditions of a premises licence for the prevention of public nuisance, but that this must be balanced by the potential negative impact of setting arbitrary closing times (e.g. having large numbers of patrons leaving establishments simultaneously).

As with outlet density, trading hours for each premises licence are determined based on the application's operating schedule, which sets out the times during which it is proposed

that the licensable activities are to take place. The licensing authority may not impose any trading hours conditions unless it has received relevant representations and has been satisfied at a hearing of the necessity to impose conditions. It may then impose conditions necessary to promote one or more of the four licensing objectives. When there are no relevant representations, the licence must be granted subject only to conditions that are consistent with the operating schedule and the mandatory conditions in the Act.

Accordingly, none of the local councils included in this study prescribe licensing hours in their statements of licensing policy. Instead, all state that trading hours will be determined for each premises, based on a balance between benefits to the community of a licensed venue and the potential for disturbance to local residents and businesses. Factors considered by councils in their determination of licensed trading hours include the surrounding land use, proximity of the premises to residential dwellings, and customer access to transport infrastructure (public transport, taxis). All four councils stated that earlier closing times would be considered appropriate in predominantly residential areas, to minimise the potential for nuisance or disturbance to local residents. The councils also include a range of other provisions and considerations regarding trading hours in their licensing policies:

- **Variable closing times policy** (City of London): the council encourages licensees to vary their closing times in areas containing a number of licensed premises. This is intended to encourage customers to leave for 'natural reasons' over a longer time period, rather than all at once.
- **Early morning alcohol restriction orders** (London Borough of Lewisham): under the Crime and Security Act 2010, the council can make 'early morning alcohol restriction orders', which override any premises licence that authorises the supply of alcohol between 3-6am.
- **Winding down period** (Newcastle City Council): the council encourages applicants to consider including a 'winding down period' at the end of the night. This could involve gradually increasing the lighting and 'winding down' entertainment (e.g. music) between the end of sale of alcohol and the end of opening hours. This period is intended to create a calmer ambience and to encourage patrons to leave slowly rather than all at once.
- **'Control measures'** (Manchester City Council): the council expects a higher level of control measures to be implemented when a premises applies for later trading hours. This may include security measures, door supervision, use of the 'Nitenet System' (which disseminates information on criminal activity throughout the city), and effective monitoring of the premises and its surroundings.

Appendix 4 (Table 10) provides further detail on the trading hour provisions in the local councils' statements of licensing policy, to identify how the Licensing Act is implemented at the local scale.

Regulating trading hours in the Licensing (Scotland) Act 2005

In contrast with English councils, Scottish licensing authorities are able to set normal trading hours under the Licensing (Scotland) Act 2005, based on two additional provisions in the Act:

- A stated presumption against 24-hour licences; and
- The restriction of off-sales to 10 am–10 pm.

The guidance notes on the Act further state that Boards may wish to consider applications for up to 14 hours as being reasonable, subject to consideration of local circumstances.

Based on the directions given in the Licensing Scotland Act 2005 and accompanying guidance notes, the Edinburgh Licensing Board's Policy Statement 2010-2013 includes three main trading hour provisions:

- **Trading hours for off-sales premises**: 10am-10pm daily, with no discretion for licensed hours outside of these times. Closing hours may be restricted for some premises.
- **Trading hours for on-sales premises**: opening hours are standard across premises types (9am Monday to Saturday, 12.30pm on Sunday). Closing hours are later for premises offering restaurant facilities and/or entertainment (3am), members' clubs (3am) and casinos (6am) than other premises types (1am). The Board may impose different restrictions on trading hours for different licensed activities and different days of the week.
- **Extended hours applications**: premises may apply for extensions of licensed hours for the period of up to one month, to enable premises to remain open longer for special occasions or large public events.

As with the English licensing authorities, the Edinburgh Licensing Board also states a number of supplementary considerations for trading hours, including the proximity of licensed premises to residential property, access to transport routes and the use of 'winding down periods'. Further details on these provisions are available in Appendix 4, Table 11.

The Licensing Board requires individual applicants to prepare an operating plan addressing the five licensing objectives in the Act. The operating plan must include information on the proposed operating hours and the impact of activities at those hours,

having regard to the nature of the area, the type of premises, the type of activities to be provided, operational procedures and the concerns of the local community. The Board will expect the plan to demonstrate how it is intended that the premises will be good neighbours to residents and to other venues and businesses.

Regulating trading hours in Australian states

This section reviews the trading hour provisions in the liquor licensing acts of three Australian states (Queensland, Victoria and New South Wales), and two city councils (Sydney and Melbourne) that have adopted a policy on licensed trading hours. In NSW, local councils have a role in determining trading hours through the establishment of policies for dealing with licensing proposals. Policies established by councils identify the requirements that will need to be met under the planning laws for a licensing proposal, including extended trading authorisations. In Victoria, local councils contribute to setting trading hours for licences through their planning schemes (under the Planning and Environment Act 1987). For example, the Melbourne Planning Scheme sets out normal operating hours for licensed premises located in each land use zone. Unlike other governments in Australia, local councils in Queensland (e.g. Brisbane City Council and Gold Coast City Council) are not involved with the administration of liquor licensing. The Commissioner of the Office of Liquor and Gaming Regulation makes decisions on granting of licences, including trading hours.

All Australian states included in this study specify ordinary trading hours for different licence types and authorise licensee applications for extended trading hours. The states define a range of licence types in their liquor licensing acts, and use these licence types to define licence conditions, including trading hours. Licence types vary between states, but generally include hotel, club, on-premises, restaurant/café, packaged liquor and producer licences.

- **Ordinary trading hours:** The acts set ordinary trading hours (opening and closing hours) for each licence type. This usually includes a 'general' licence trading hours category, with variations/exceptions for other licence types. Trading hours are generally reduced on a Sunday, compared with Monday to Saturday.
- **Extended trading hours approval:** Licensees may apply for extended trading hours for new or existing licences. All states specify what extension beyond ordinary trading hours is possible (i.e. maximum extensions to opening and closing hours) for different licence types. Extensions must be approved and specified in the premises licence. Each state has also specified a range of conditions for trading hour extensions. In Queensland, applicants must provide evidence of a 'community need' in order for the extension to be granted. In Victoria, trading hour extensions are subject to the condition that the extension

In some states, local councils incorporate consideration of premise types, area types (land use) and area designations (problem areas) in their standard and extended trading hour provisions. The two councils included in this study use additional spatial information to define trading hours and trading hour extensions:

The Melbourne Planning Scheme sets maximum closing hours by planning zone (capital city and docklands zones, residential zones, mixed use zone, business zones). Longer trading hours are possible in the capital city, docklands and business zones, compared with the residential and mixed use zones. The planning scheme sets additional restrictions on the late night occupation of and drinking in open spaces, particularly in noise sensitive areas, and on trading hours in locations near residential areas.

The City of Sydney sets provisions for trading hours in its 'Late Night Trading Premises Development Control Plan' (LNTPDCP) 2007. The purpose of the development control plan is to assist in managing the impacts of late night trading premises on the areas they are located, and in particular, protect the amenity of residential properties. The provisions of the LNTPDCP apply to development applications for premises that seek approval for extended trading hours, or seek to intensify their existing use (e.g. through refurbishment).

The provisions of the LNTPDCP do not set potential trading hours in a blanket fashion throughout the City, but allow opportunities for late night trading hours in appropriate locations and with appropriate management actions. Late trading hours are primarily determined based on the type of premises and the area the premises is located in:

- Late night trading premises are categorised into one of two types (high impact or low impact) based on the type of venue/licence (e.g. hotel) and the premises' capacity.
- Areas are categorised into one of four late night trading areas (late night management areas, city living area, local centre areas or other) based on the amount and type of late night activities that occur in them (e.g. late night management areas are those that are focal points for a range of night-time social and recreational activity).

'Base' or 'extended' trading hours are set for each licence using a matrix describing the type of premises the licence is for, and the type of area the premises occurs in. The

trading hour 'matrix' in the LNTPDCP distinguishes between indoor and outdoor trading hours for each premises type.

The development control plan also specifies a range of other considerations in setting 'appropriate' trading hours for late night premises. These considerations include the impact of the premises on the mix, diversity and concentration of late night uses in the locality, the accessibility and frequency of public transport during late night trading hours, and the measures to be used for ensuring safety, security and crime prevention. Further details on these measures are available in Tables 16 and 17. The LNTPDCP states that late trading hours are considered a privilege, and will only be approved where an ongoing commitment to good management is evident.

Apart from ordinary and extended trading hours, the Australian states included in this review identified two other types of trading hour provisions in their liquor licensing acts. These are 'management' provisions, which require the development of impact statements and plans to manage the potential for harms related to late trading, and mechanisms to decrease the impact of late closing hours.

Management provisions include:

- **Management plans:** both Queensland's Liquor Act 1992 and the City of Sydney's LNTPDCP require applicants for new licences, extended trading hours and variations on existing licences to include a management plan alongside their application. These plans describe the location and operation of the premises (including operating hours), together with the measures that will be taken to ensure responsible management and minimise alcohol-related harms. Such measures may include crowd control, security and noise minimisation measures, as well as initiatives for the responsible service of alcohol and participation in liquor accords. The City of Sydney requires licensees to review their management plan following every trial period, and revise it to maintain acceptable levels of amenity and safety in the area.
- **Community impact statement:** both Queensland's and NSW's liquor licensing acts require applicants for new licences, extended trading hours and variations on existing licences to submit a community impact statement alongside their application. The CIS describes the likely impacts of the proposed licence on area amenity and the local community, based on population assessment and community consultation.

Trading hour mechanisms include:

- **Lockout provisions:** all three states' liquor licensing acts include a 'lockout' provision, referred to as a 'late hour entry declaration' by Victoria and New South Wales. The purpose of this provision is to prevent patrons entering licensed

- **30 minute 'consumption' period:** the Victorian Liquor Control Reform Act 1998 allows for liquor supplied during trading hours to be consumed on the premises during the following 30 minutes.
- **Six hour closure period**: the New South Wales Liquor Act 2007 requires liquor licences granted or modified after 2008 to include a daily 6-hour minimum continuous closure period. This provision states that liquor must not be sold by retail on the licensed premises for a continuous period of 6 hours during every consecutive 24 hour period.
- **Trial periods**: the City of Sydney requires all applicants for late night trading premises or extended hours to undergo a trial period, to enable the council to assess the ongoing management performance of a premises and its impact on neighbourhood amenity. Premises seeking extended trading hours may be permitted up to two additional operating hours per trial period, provided that the council is satisfied that the premises has demonstrated good management performance during the previous trial period. If the Council determines that a trial period has been unsatisfactory then trading hours will revert to the base hours. Once the full range of extended trading hours is reached, an application must be lodged every five years to renew trading hours.
- **Moratorium on extended hours applications:** imposed by the Queensland government for a one year period, pending the findings of an inquiry into alcohol-related violence. No applications for extended hours may be granted during this period.

Further details on the Australian states' and councils' trading hour provisions are available in Appendix 4, Tables 12-17.

2.2.2 Summary of outlet trading hour policy mechanisms

The preceding review of UK and Australian liquor licensing policies identified four main trading hour policy mechanisms that have been adopted by overseas governments and councils to minimise the incidence of alcohol-related harms:

- De-regulation of trading hours (24 hour trading)
    - Variable closing times

- Standard/restricted trading hours
    - By licence type
    - By premises type
    - ‘Winding down’ or ‘drinking up’ period
- Extended trading hour applications
    - Extended hour trials
- Lockout policies
- Community impact assessments
- Management plans
- Zoning/planning schemes
- Area-based restrictions

The effectiveness of these policy mechanisms is reviewed in section 2.3.

2.3 Evaluation of the effectiveness of outlet trading hour policy mechanisms

This section summarises the available evidence on the effectiveness of alcohol outlet trading hour policies in reducing alcohol-related harms. This summary is based on a review of the academic literature and professional reports, which sought to identify any evaluations of policy changes involving trading hours. The review focused on evaluations of trading hour provisions used in Australia and the UK, enabling reflection on the effectiveness of the 'best practice' policy mechanisms outlined in section 2.2. The results of the review are tabulated, followed by a summary of recommendations on trading hour mechanisms from the alcohol policy literature. Key considerations for the effective implementation of outlet trading hour policies are highlighted.

In contrast to outlet density mechanisms, a large number of evaluations have been conducted on the effectiveness of trading hour policies in reducing alcohol-related harms. Table 18 (Appendix 5) summarises the findings of studies evaluating trading hour policies implemented in the UK and Australia over the last twenty years. While not all of these studies assess the current policies/provisions detailed in section 2.2, they assess similar, earlier policies that evolved under the same legislative environment. In addition, the review in section 2.1 highlighted several evaluations of trading hour policies implemented in the USA, Canada, Iceland and Brazil (see Ragnarsdottir et al., 2002, McMillan et al., 2006, Duailibi et al., 2007, and Vinglis et al 2006 and 2008 in Table 18). While not directly assessing the Australian and UK policies outlined in section 2.2, they provide further evidence of the outcomes of trading hour mechanisms.

<u>De-regulation and extension of trading hours</u>

A number of government commissioned and academic studies have evaluated the impacts of the de-regulation of trading hours under the UK Licensing Act 2003. These studies have reported mixed results in terms of their impacts on alcohol consumption, drinking behaviours, crime rates, violence and hospital admissions. In contrast to the expected increases in alcohol-related harms with the extension of trading hours, Hough and Hunter (2008) reported a slight decrease in alcohol consumption and minimal changes in violent crime and disorder. Similarly, a survey by Foster et al. (2009) found that 59% to 86% of the chairs of local licensing authorities perceived no change in the incidence of alcohol-related harms, including crime, violence and drink-driving. However, Stockwell and Chikritzhs (2009) suggest that these results may not be representative of long-term changes in alcohol consumption and related harms in response to increased trading hours. The studies are based on assessments of changes in harm variables in the first year after the Act was implemented (November 2005), when a limited proportion

of outlets took advantage of the extended trading hours. Indeed, Hough and Hunter (2008) found that half of the premises they surveyed maintained an 11pm closing hour. A review of trading hours two years after the Act had been implemented found that 78% of premises increased their trading hours post-implementation, with 23% of these premises delaying this extension (Humphreys and Eisner, 2010). These findings suggest that earlier studies may not have captured the full effect of the law change. Furthermore, Stockwell and Chikritzhs (2009) note that police statistics are not a robust indicator of changes in disturbance and offending rates for this period, as the implementation of the licensing changes coincided with increased police enforcement activity. As increased police presence is likely to act as a deterrent to offending, changes in recorded criminal offences may not entirely be a result of licensing changes.

In contrast, several studies of hospital admissions suggest that increased trading hours under the UK Licensing Act 2003 did result in increases in alcohol-related harms. A comparison of overnight emergency department attendances before and after the Act's implementation identified significant increases in overall alcohol-related hospital admissions, alcohol-related injuries and hospitalisations resulting from alcohol-related assaults (Newton et al., 2007). A later study by Peirce and Boyle (2011) also found an increase in assault presentations to an emergency department, with a significant increase in weekend assaults and a delay in peak presentations to later in the evening. While these findings are based on just two hospitals in the UK, they indicate that some regions are experiencing increased levels of alcohol-related harms as a result of extended trading hours.

A number of evaluations have identified a temporal displacement in the incidence of offences following the implementation of the Act. While Hough and Hunter (2008) and Humphreys and Eisner (2012) did not find evidence of changes in the total number of offences, both noted an increase in violent offences in the early hours of the morning. Just as Peirce and Boyle (2011) found a shift in peak assault presentations to between 1-4am, Humphreys and Eisner (2012) found a 36% increase in weekend violence between 3-6am. This temporal displacement of offences is mirrored in an analysis of changes in trading hours, which found that the Act did little to reduce peaks in closing times, but rather delayed peak closing by an hour (Humphreys and Eisner, 2010). The study identified limited 'staggering' of closing hours among clusters of premises, with 53-72% of clusters failing to remove large peaks in closing times.

Evaluations of extended trading hours in other countries have consistently reported increases in alcohol-related harms and the temporal displacement of harms (see Hahn et al., 2010). In Ireland, an increase in trading hours resulted in increases in binge drinking, accident and emergency attendances, reports of disorder, vandalism and offences (Plant and Plant, 2005). In Western Australia, the introduction of 1-2 hour

extended trading permits resulted in significant increases in the volume of high alcohol content purchases, monthly assault rates and monthly crash rates for late trading hotels ((Chikritzhs and Stockwell, 2002, Chikritzhs and Stockwell, 2006). Similarly in Canada, a one hour increase in closing hours was associated with a significant increase in alcohol-related motor vehicle casualties (Vingilis et al., 2006). A later study also identified a temporal shift in alcohol-related harms from peaking after 1am to peaking after 2am (Vinglis et al., 2008). Finally, a natural experiment with unrestricted trading hours in Iceland resulted in a 31% increase in the number of weekend night admissions to the A&E, and an 80% increase in drink-driving (Ragnarsdóttir et al., 2002). The increases in alcohol-related harms experienced in Iceland and Ireland resulted in trading hour restrictions being reinstated within 1-3 years of the original extension.

Restricted trading hours

Fewer studies have assessed the effects of restricted trading hours on alcohol-related harms. Nonetheless, several reviews conclude that restricted trading hours are an effective policy mechanism, associated with an overall reduction in the incidence of alcohol-related harms (Hahn et al., 2010, Rossow and Norström, 2012). In New South Wales, instating a policy of 1am lockouts and 3am closing times resulted in a statistically significant 37% reduction in alcohol-related assaults, with an 11% decrease in the proportion of assaults occurring after 3am (Jones et al., 2009, Kypri et al., 2011). Both studies found no change in assault rates in control sites over the same period. In a small community in Western Australia, Douglas (1998) found that restricted trading hours for off-licence premises resulted in a decrease in alcohol consumption, criminal charges and alcohol-related presentations at the hospital. An evaluation of on-premise trading hour restrictions in Brazil found a 44% reduction in homicide rates in the three years following the introduction of the policy (Duailibi et al., 2007). Furthermore, it has been argued that the evidence of increased harms with increased trading hours should mean that restricted trading hours will at least avert, if not reduce alcohol-related harms (Hahn et al., 2010). This supposition is supported by the findings of Rossow and Norstrom (2012), who reviewed the effects of extended and restricted trading hour policies in Nordic countries. They found that the effects of increased and decreased trading hours were symmetrical, with a 19-24% decrease in assaults in the city centre for every one-hour restriction of closing hours (Rossow and Norström, 2012).

Lock-out policies

The final ‘trading hours’ policy mechanism to have been evaluated in the academic literature is the lockout policy, also referred to as a ‘late hour entry declaration’. Lockouts are a recent policy initiative to have been implemented in Australia, and subsequently the evidence for their effectiveness is limited (Babor et al., 2010). A number of

evaluations have been conducted on the impacts of lockouts on alcohol-related harms, but their authors have noted methodological limitations to the findings of these studies (e.g. Palk et al., 2010). Not least of these limitations is the fact that lockout policies are usually implemented as part of a package of harm minimisation provisions (National Drug Research Institute, 2007). The evaluations identified in this review found some evidence for reductions in alcohol-related harms, including violent incidents, alcohol-related disturbances, and personal trauma (Centre for Health Research and Practice, 2004, Mazerolle et al., 2012, Palk et al., 2012, Palk et al., 2010). However, several evaluations identified increases in some types of alcohol-related harm, including damage to licensed establishments and vehicle-related offences (Centre for Health Research and Practice, 2004, Palk et al., 2012). Several studies report the temporal or spatial displacement of harms to later in the evening or the area outside licensed premises (Centre for Health Research and Practice, 2004, Palk et al., 2012). These evaluations highlight the conflicting nature of evidence on the effectiveness of lockouts. While Palk et al. (2012) found that Queensland's lockout policy had resulted in a reduction in harms in the Gold Coast, these effects were not found in Brisbane. Evaluations of the lockout policy in Ballarat have reported similarly conflicting results (cf.Centre for Health Research and Practice, 2004, Miller et al., 2012). However, it must be noted that these evaluations have been based on very limited datasets; the Palk et al. (2010, 2012) evaluations were conducted using only two months of data. Reviews of lockout policies conclude that more research is needed on the long-term impacts of lockout policies to ensure that they are implemented in the most effective times and places (National Drug Research Institute, 2007).

At present, no studies have been identified that evaluate the effects of other trading hour policy mechanisms, such as winding down or drinking up periods, on late night alcohol consumption or related harms.

Overall, the preceding review of evaluations of trading hour policies provide strong evidence for the effectiveness of trading hour controls in reducing alcohol consumption and related harms. Overseas experience has provided evidence that extending trading hours results in increased or temporally displaced harms, while restricting trading hours results in a reduction in harms. Evaluations of trading hour policies in the UK have also suggested that staggered drinking hours have been difficult to implement. There is some evidence that lockout policies can be effective at reducing late night/early morning harms, but this requires further investigation. As demonstrated in Table 2, the positive relationship between alcohol outlet trading hours, alcohol consumption and related harms has resulted in the general promotion of trading hour provisions as a key regulatory mechanism to reduce alcohol-related harms.

Table 2: Conclusions on trading hour mechanisms in professional and academic reviews

Review	**Conclusion**
World Health Organisation, 2004	Recommends restrictions on days and hours of sales as part of an effective policy mix, especially for targeting problem/high-risk areas and times.
Stockwell and Chikritzhs, 2009	Based on a review of literature evaluating the impact of changes to trading hours of on-licence premises, found that: "the balance of reliable evidence from the available international literature suggests that extended late-night trading hours lead to increased consumption and related harms."
Loxley et al., 2004	Identifies restrictions on late-night trading hours of licensed premises as a well-supported regulatory strategy: "Large, broad changes in trading hours (e.g. whole days of sale added or taken away) are associated with significant changes in overall level of harm… There is recent Australian evidence that even small changes (e.g. later hours) can be associated with a significant local-level impact on alcohol-related violence"
Casswell and Maxwell, 2005	"Restricted hours of sale and restricted density of liquor outlets both have good evidence for effectiveness, with the potential to reduce drinking and alcohol-related problems"
National Drug Research Institute, 2007	"Limitations on, or reductions to, trading hours and outlet density appear to reduce alcohol-related problems under a variety of conditions, with or without the support of other types of restrictions, and require minimal enforcement." "The limited evidence available suggests that levels of alcohol-related disorder may decline where lockouts are implemented."
Anderson et al., 2009a	Lists controls on hours and days of sale as 'effective': "reviews noted consistent evidence that increases in days and hours of sale increase consumption and harm, and that reductions in days and hours of sale reduce consumption and harm."
Hahn et al., 2010	"reducing hours of sale by >2 is likely to avert alcohol-related harms… The findings in this review support the potential value of allowing local communities to maintain restrictions on hours of sale."
Babor et al., 2010	Restricting the days and times of alcohol sale has been a common strategy for controlling alcohol-related harms. In recent years there has been increasing evidence that such availability restrictions prevent or reduce alcohol-related problems: "the weight of evidence suggests that restrictions on opening

	hours and days of sale are important policy levers for managing alcohol-related harm. Increasing the hours and days of sale is typically related to increased consumption and alcohol harms (usually acute harm) and studies of reduced hours of sale or bans on days of sale are associated with reduced problems."
Stockwell, 2013	"There is strong evidence that large changes in the trading hours of bars and liquor stores can influence the rates of consumption and harm." "well-designed studies have also begun to emerge that have demonstrated reductions in violent incidents following reduced trading hours."

Considerations for implementation of trading hour policies

The academic and professional literature highlights a number of additional considerations for the implementation of effective trading hour policies. These considerations are detailed in the paragraphs below.

Changes in trading hours may have a different impact for on- and off-licence premises. The majority of evaluations of trading hour policies have focused on the outcomes for on-licence premises, with less evidence on the effects for off-licences. However, the two evaluations of off-licence trading hour policies included in this review suggest that restrictions on off-licence trading hours may also result in reductions in alcohol consumption and harms. Douglas et al. (1998) found that restrictions on off-licence purchases resulted in a reduction in per capita consumption, alcohol-related assaults and hospital admissions. McMillan and Lapham (2006) reported increases in alcohol-related crashes in New Mexico following the legalization of Sunday trading, with subsequent reductions in communities that reinstated a ban on Sunday sales (McMillan et al., 2007). Despite this overall similarity in the relationship between off-licence hours and harms, it is important to consider how restrictions on on- and off-licence hours will affect the availability of alcohol in a particular place, the amenity of that place, and how current users of the premises will respond to the restrictions. Off-licence sales are frequently associated with alcohol consumption and related harms in public places and 'pre-loading' behaviour (Paschall and Saltz, 2007). Restricting off-licence trading hours could therefore contribute to wider reductions in alcohol-related harms, by reducing the availability of alcohol for consumption in public areas and reducing the level of intoxication inside and immediately outside on-licence premises (Palk et al., 2012).

Evaluations of trading hour policies have demonstrated that there is significant potential for the spatial and temporal displacement of harms following changes in trading hours. Surveys conducted by Hough and Hunter (Hough and Hunter, 2008) highlighted that extensions in trading hours resulted in patrons going out later in the evening, so that

overall levels of harm did not change, but were delayed into the early morning. This resulted in greater indirect harms, as residents were disturbed later into the night and the late hours put additional pressure on police and emergency service resources (Plant and Plant, 2005). In Canada, the extension of drinking hours resulted in an increase in alcohol-related crashes in Ontario, but a reduction in crashes involving Ontario-licensed vehicles in the neighbouring city of Detroit (Vinglis et al., 2006). These trends suggest a reduction in the number of patrons who cross the border due to bar closures in Ontario, resulting in the spatial displacement of alcohol-related accidents. This evidence of displacement highlights the importance of understanding current drinking behaviours, and how changes in trading hours will affect current behaviours, to create effective interventions that result in an overall reduction in harms (Babor et al., 2010).

The review of trading hour policies in Australia and the UK highlighted several other mechanisms that could be used to support the effective implementation of trading hour policies. Trials of extended hours, such as those instated by the City of Sydney Council, could be an effective way of ensuring that extensions to trading hours do not result in an increase in harms. Stockwell (2013) suggests “being allowed to stay open later could be used as a privilege rather than a right so that, for example, only premises with low rates of violent incidents could be permitted to stay open later.” A retractable extended licence privilege would mean that it is in the licensees’ interests to prevent and manage the incidence of harms. However, such approaches rely on the robust monitoring of harms for the licensing authority to identify and provide evidence of a breach of the conditions on an extended licence (Loxley et al., 2004). Another mechanism used to prevent harms associated with late night trading is the requirement for licence applicants to create a community impact statement and detailed risk management plan. A community impact statement is used to ensure that applicants and the community have considered the possible implications of an increase in trading, and provides the licensing authority with a mechanism to refuse licences if harms have not been appropriately assessed or addressed. A risk management plan can help to reduce secondary harms associated with late night trading, including measures to avoid noise pollution and littering, provision of food and water, and security measures. Several UK councils note that ‘vertical drinking’ is associated with higher per capita alcohol consumption (e.g. Manchester Statement of Licensing Policy 2013); providing seating and serving meals is one way of reducing excessive consumption of alcohol (Babor et al., 2010). Local authorities have an important role to play in risk management, by ensuring that public transport meets the needs of patrons of late night premises (National Drug Research Institute, 2007).

Finally, the evaluations of trading hour policies and studies on the relationship between trading hours and alcohol-related harms in this review highlight that changes to trading hours affect areas and sub-populations differently. The density and types of premises

located within an area, together with the surrounding land use, affect patrons' use of the area and their drinking patterns and behaviours. Changes to trading hours will interact with these location-based characteristics to influence consumers' behavioural responses and corresponding changes in alcohol-related harms. For example, fixed closing hours in high-density clusters have been shown to result in large numbers of patrons leaving at the same time, resulting in elevated peaks in violence and other harms (Livingston et al., 2007, Hough and Hunter, 2008). Different sub-populations, with different cultural practices, social norms and drinking patterns, may also respond to, or be affected by changes in trading hours differently (Stockwell and Chikritzhs, 2009). Several studies distinguish between the responses of 'heavy drinkers' and more moderate consumers (e.g. Gruenewald, 2011), and highlight responses by younger patrons (Plant and Plant, 2005, Paschall and Saltz, 2007). Spatial patterns of liquor outlets, land use and current harms, together with socio-spatial population patterns may therefore be important considerations in defining effective trading hour policies. As the review of trading hour policies in section 2.2 highlighted, a number of licensing authorities have dealt with these spatial differences by creating area-based trading hour restrictions and using zoning mechanisms (e.g. Victoria, Sydney). Area based restrictions provide a mechanism to control hours in areas currently experiencing high levels of harm, while zoning mechanisms ensure that trading hours are appropriate for the area and land use. These approaches are discussed further in the following section.

Alcohol Supply Policy Option 3: Location of licensed premises

Location is usually identified as an implicit policy issue in the discussion of the density and trading hours of licensed premises, rather than a policy issue or mechanism in its own right. However, New Zealand's new Sale and Supply of Alcohol Act 2012 ('the Act') allows councils to include provisions on the location of alcohol outlets in their local alcohol policies. This includes 'limits on the location of licences in relation to broad areas, or premises or facilities of particular kinds, such as schools or churches'. This section therefore investigates the location-based policy mechanisms other licensing authorities have included in their policy statements, and how effective such mechanisms are at reducing alcohol-related harms for specific sites and locations. The resulting review is intended to inform the Auckland Council on the range of location policy mechanisms it could implement under the location provision in the Act.

It is recognised that different areas have different population characteristics and economic activities, and that 'appropriate' land uses (including the sale of alcohol) therefore differ across space and place (Roberts, 2009). This has resulted in many governments and councils creating area specific policies to ensure that alcohol consumption behaviours are appropriate for particular areas. Livingston et al. (2007) have recently contributed to the literature on location by describing the impacts of alcohol outlets, consumption and related harms on area 'amenity'. They argue that the availability of alcohol (in the form of outlets) affects the character of areas, resulting in them attracting particular kinds of consumers and drinking behaviours. The effects of alcohol outlets on location amenity are therefore an important factor in the production of alcohol-related harms (Livingston et al., 2007, Babor et al., 2010).

The academic literature and alcohol policies also recognise that some areas contain sub-populations or sites that are vulnerable to the effects of alcohol consumption (see Babor et al., 2010). Exposure to alcohol and the availability of alcohol, along with area amenity, may affect some sub-populations more than others, resulting in greater experience of alcohol-related harms. Alcohol advertising has been implicated in spatial differences in population exposure to alcohol (see Collins et al., 2007, Kwate et al., 2007). Sensitive groups may include children and young people, elderly and problem drinkers (including recovering alcoholics), as well as schools and religious sites. Some authors have also noted that different socio-economic and ethnic groups experience greater exposure to alcohol and related harms, reinforcing existing social injustice (Day et al., 2012, Romley et al., 2007). In some regions, area-specific policies have been created in an attempt to reduce the impact of alcohol sales on these vulnerable sub-populations and sites (Boella et al., 2006, Grubesic et al., 2012).

Definition of the 'location' policy issue

In this review, location is defined as designated 'broad areas' (e.g. entertainment precincts) and sites (e.g. schools), based on the provisions in the Act. These areas or sites may be identified based on their land use (e.g. residential), the sub-populations that inhabit or use them (e.g. children), the activities undertaken on/in them (e.g. education), or the problems that occur on/in them (e.g. vandalism). Based on this broad definition of location, this review encompassed all policies (and research on policies) that seek to address alcohol-related harms occurring in specific locations, or the impacts of alcohol-related activities on specific locations. The review of the impacts of alcohol-related activities on 'sensitive' locations has extended beyond alcohol outlets to consider the impacts of alcohol advertising on levels of consumption and alcohol-related harms in these locations. Location-based policy mechanisms therefore include:

- regulations on the proximity of new/extended licences and alcohol advertising to sensitive sites,
- conditions on licences for outlets located near sensitive sites, and
- policies that regulate the licensing of premises in locations currently experiencing harms.

3.1 Review of evidence for the policy issue

This section reviews the available literature on the location of licensed premises to identify the strength of evidence for the theoretical relationship between outlet location, alcohol consumption and alcohol-related harms. Relevant literature was identified through searches of academic databases. The search focused on academic papers and a small number of professional reports that examined the relationship between alcohol outlet location and harms, including studies of the effects on sub-populations and sensitive sites.

A large number of studies have reported on differences in the spatial distribution of alcohol-related harms. Spatial analyses highlight that alcohol-related harms, including assaults, vandalism, crime and vehicle accidents tend to be concentrated in space (Donnelly et al., 2006, Burgess and Moffatt, 2011, Young et al., 2013). Section 1 on outlet density highlighted that some of this spatial variability can be explained by differences in the availability to alcohol, in terms of proximity to outlets of different types and sizes. The majority of these studies also reported statistically significant relationships between harms and other socio-economic variables, including population density, age, gender, ethnicity, income, education and employment characteristics (e.g. Huckle et al., 2008, Gruenewald and Remer, 2006, Kavanagh et al., 2011). In addition, a number of studies found evidence of spatial correlations between alcohol availability and

socio-economic characteristics (e.g. Huckle et al., 2008, Zhu et al., 2004, Ellaway et al., 2010). Alcohol outlets were found to be more densely distributed in areas with higher population density areas, lower average income and larger populations of young people (Freisthler et al., 2003, Zhu et al., 2004, Scribner et al., 2008).

Evidence of the relationship between these socio-economic descriptors, the location of alcohol outlets and levels of alcohol consumption and related harms is summarised in Table 19 (Appendix 6), based on a review of the academic literature. These findings suggest that some parts of the population experience greater levels of alcohol consumption and related harms as a result of high exposure to and availability of alcohol. In particular, men, youth, low income earners and some ethnic groups tend to consume larger quantities of alcohol (Huckle et al., 2008), practice 'problem drinking' behaviours (e.g. binge drinking (Kavanagh et al., 2011)) and experience greater levels of direct harms (e.g. health problems and violence (Day et al., 2012)). Residents of 'problem' areas also experience greater levels of indirect harms, including disturbance, assault and property damage (Wechsler et al., 2002, Donnelly et al., 2006). Differences in the alcohol outlet density have been thereby identified as contributing to social injustice, by fostering 'alcogenic' environments (Huckle et al., 2008) that reinforce societal inequalities in health and wellbeing (Day et al., 2012, Romley et al., 2007).

The academic literature has drawn particular attention to the relationship between alcohol outlet density, consumption and young people in secondary schools and universities. A number of studies have reported greater alcohol availability in areas with large student numbers (e.g. Scribner et al., 2008, Wechsler et al., 2002). The availability of alcohol, in terms of alcohol outlet density, has been found to be positively associated with the proximity to student residences (Kypri et al., 2008) and proximity to schools or university campuses (Weitzman et al., 2003). The majority of these studies have found that the greater availability of alcohol has resulted in higher rates of alcohol consumption, more frequent problem alcohol behaviours (including binge drinking and drunkenness), and more frequent experiences of alcohol-related harms (e.g. Weitzman et al., 2003, Huckle et al., 2008, Kypri et al., 2008, Young et al., 2012). Similar results have been found for adolescent smoking; the prevalence of smoking was 3.2% higher at schools in neighbourhoods with high tobacco outlet density (>5 outlets) than in neighbourhoods without tobacco outlets (Henriksen et al., 2008). Alcohol-related harms have been reported in terms of student experiences of harm (to themselves or others) (e.g. Kypri et al., 2008) and the experience and perception of the surrounding neighbourhood (e.g. Donnelly et al., 2006). In addition to alcohol outlet density, studies have identified a number of other factors affecting student drinking, including alcohol-based advertising near schools (Ellickson et al., 2005).

Table 20 (Appendix 6) reviews the evidence for a relationship between the location of alcohol advertisements and young people's drinking behaviour. Several studies have found that young people have a high exposure to alcohol advertising through the placement of alcohol billboards and other forms of advertising near schools and playgrounds (Pasch et al., 2007, Kwate et al., 2007, Kelly et al., 2008). This regular exposure has been demonstrated to relate to youth drinking behaviours. Young people with greater exposure to alcohol advertising have been found to start drinking earlier (Collins et al., 2007, Pasch et al., 2007), drink more frequently and consume more alcohol in a drinking session (Anderson et al., 2009b, Connolly et al., 1994). This change in drinking behaviour is partly explained by Mastro and Atkin (2002), who found that exposure to advertising influences young people's beliefs about and attitudes towards alcohol.

In addition, several authors have drawn attention to the effects of outlet density on the amenity of locations (Stockwell and Gruenewald, 2004, Livingston et al., 2007). Areas with large numbers of alcohol outlets, and especially clusters of outlets of a particular type (e.g. bars and nightclubs (Rowe et al., 2010)), tend to be 'attractors' of trouble (Gruenewald and Remer, 2006, Liang and Chikritzhs, 2011). Outlet clusters draw large numbers of patrons and contribute to high pedestrian volumes moving between premises (Livingston et al., 2007). Reviews by Anderson et al. (2009) and Gruenewald (2011) suggest that this clustering tends to attract problem drinkers and anti-social behaviour. For example, Parker et al. (2007) found outlet density to have a significant positive effect on gang violence. Premise clustering has subsequently become associated with high levels of alcohol consumption and more frequent incidences of alcohol-related harms, including violence, property damage and vehicle related injuries (Gruenewald, 2011). Therefore, while licensed premise clusters are often claimed to contribute to a vibrant nightlife, they can also negatively impact on the location amenity if poorly managed. The type and size of amenity impacts is also related to the type of area the clusters are located in; it has been suggested that impacts are greater in residential compared with inner-city areas (Donnelly et al., 2006).

Other location-based relationships with alcohol reported in the academic and professional literature include:

- The spatial distribution of harms in relation to alcohol outlet location. There is very little information available that explicitly assesses the relationship between 'sensitive' location types, such as churches and rehabilitation facilities, and alcohol-related harms. However, the reported relationship between proximity to outlets and a variety of alcohol-related harms suggests that proximity to alcohol outlets is likely to have significant impacts on sensitive populations and sites. For example:

- Wechsler et al. (2002) found that residents who lived within 1 mile from a college were significantly more likely to report noise and disturbances, vandalism, drunkenness, and vomit and urination than those living more than a mile from a school.
- Burgess and Moffat (2011) found that the majority of assaults in the CBD occur within 50m of on-licence liquor outlets.
- Day et al. (2012) reported double the rate of violence offences in areas within 900m of alcohol outlets, compared with areas between 0.9-1.6km of alcohol outlets.
- Young et al. (2012) found that 15 year olds living within 200m of an off-sales outlet were nearly twice as likely to drink weekly than those living more than 800m away from such outlets.

- The role of (the spatial distribution of) transport infrastructure in the incidence of alcohol-related harms. Councils in the UK and Australia are now focusing on the availability of public transport in order to ameliorate the harms resulting from taxi queues and the rates of drink-driving (and associated harms). Several studies have identified relationships between the location of outlets relative to transport routes and resultant collision and drink-driving rates (Chikritzhs et al., 2007, Escobedo and Ortiz, 2002, Gruenewald et al., 1996). Indeed, a Brazilian study found that outlet proximity to highway on-ramps was a significant factor in the rate of alcohol-related crashes (see Babor et al., 2010).
- Rates of liquor consumption and related in harms in public spaces. The literature suggests that youth drinking often occurs in public places, and that banning alcohol consumption in such places may reduce the incidence of alcohol-related harm (Babor et al., 2010). However, bans are less likely to be effective where off-licence outlets enable easy access to alcohol near public places (Campbell et al., 2009).

3.2 Overseas policy mechanisms: location controls

This section reviews the outlet location mechanisms contained in overseas governments' and councils' liquor licensing policies. Recent reforms in alcohol policy in the United Kingdom and Australia have formed the focus of this review, due to the similarity of their legal and governance frameworks to those in New Zealand. The purpose of detailing the location provisions contained in each country/state's licensing policies is to provide 'best practice' examples of outlet location mechanisms to inform the development of Auckland Council's local alcohol policy.

For the purposes of this review, outlet location mechanisms are considered to be any provision that applies to a specific location or is differentially applied within an area based on location characteristics. Location-based mechanisms are generally established to protect the community and/or character of an area (including sensitive sites and sub-populations) from existing or potential harms. Both the UK and Australian state governments have introduced location-based licensing controls in their recent revisions of national/state licensing legislation in an attempt to minimise the harms resulting from the proximity of alcohol outlets, particularly outlet clusters, to sensitive land uses. Location-based licensing policies have also been adopted to reduce the harms currently occurring in specific areas. These 'best practice' policy mechanisms will form the basis of this review. The UK and Australian legislation relating to the location of alcohol outlets is summarised, followed by an overview of the location provisions in local licensing policies. The section concludes by identifying the main types of policy mechanism used to control the location of alcohol outlets in the UK and Australia. The effectiveness of these policy mechanisms is reviewed in section 3.3.

3.2.1 Comparison of overseas policy mechanisms for outlet location

Regulating outlet location in the Licensing Act 2003

The UK government recognises the 'local' nature of alcohol-related issues; the Home Office's statutory guidance states that the local licensing authority is best placed to make decisions about its area through the implementation of its licensing policy. This approach enables local councils to identify and respond to issues concerning the location of alcohol outlets and resulting alcohol-related harms. Through the 'representations' process, other local authorities and stakeholders also have a role in defining the appropriateness of alcohol outlets for specific areas. These locally defined interventions are set out through the respective council's statements of licensing policy.

All of the local councils' policy statements included in this review contained location-based licensing provisions to minimize the impact of alcohol outlets on sensitive land

uses and areas experiencing harms. Two key mechanisms were used – provisions for the prevention of disturbance to residential areas, and the designation of special areas within which additional controls apply.

- **Controls on outlet location in residential areas:**

All councils' policy statements included provisions for outlet location in terms of the location of outlets relative to residential land uses. Residential areas are therefore positioned as a sensitive land use that requires location-based controls to prevent undue disturbance to local residents and workers. In the London Borough of Lewisham's policy statement, location controls are included through a provision that states that stricter conditions will apply when premises are situated in residential areas. London City Council simply prioritises the potential for disturbance to local residents and workers in their assessment of outlet impact, and notes that residents have a reasonable expectation that they will not be disturbed between the hours of 23.00 and 07.00. Newcastle and Manchester's statements of licensing policy include more explicit location-based provisions on trading hours; they state that earlier closing times will be considered appropriate in predominantly residential areas, or for premises situated in the vicinity of residential dwellings. Manchester City Council also notes that earlier closing times are appropriate for premises located outside the central city, where the infrastructure for managing late night venues (e.g. transport) is less well developed and the potential for disturbance to residential land uses is subsequently greater.

- **Restricted drinking areas:**

Three of the local councils also include special provisions for premises located in areas already experiencing high levels of harm. The councils' statements of licensing policy name the particular locations where these provisions apply, described as 'cumulative impact areas', 'special stress areas' and 'designated public place orders'. The councils state that applications for new licences or material variations to existing licences in these named locations will normally be refused, unless the applicant can demonstrate that the licence will not add to existing levels of harm.

The UK local council's location-specific policy mechanisms are further described in Appendix 7, Table 21.

<u>Regulating outlet location in the Licensing (Scotland) Act 2005</u>

The Edinburgh Licensing Board's Policy Statement 2010-2013 does not contain specific provisions for the control or management of outlet location under the Licensing (Scotland) Act 2005. Instead, the policy statement highlights the locality of licensed premises as a key consideration to be addressed by applicants in their proposed operating plans. The Edinburgh Licensing Board states that operating plans should have

regard to the nature of the area where the premises are to be situated, the type of premises, the activities to be provided and the concerns of the local community. The plan should demonstrate how applicants intend to ensure that the premises will be good neighbours to residents and to other venues and businesses.

Regulating outlet location in Australian states

The liquor licensing acts of all three Australian states included in this review contain location-based policy mechanisms. These mechanisms vary between states, but generally take three key forms: assessments of the potential impacts of liquor outlets on their local areas and communities, bans or restrictions on supply and consumption in public areas experiencing harm, and voluntary agreements to promote good behaviours in particular localities. The following paragraphs provide further detail on how each state has implemented these three mechanism types, with specific mention of how local areas and communities are described in the acts.

- **Assessment of impact of outlet location:**

Both Queensland and Victoria provide for the assessment of potential impacts on local residents and area amenity in their liquor licensing acts. Queensland's Liquor Act 1992 requires applicants for new or extended licences to submit a 'community impact statement', identifying the potential impacts resulting from the location of the proposed licence/licence variation. Each community impact statement must describe the characteristics of the locality and its community, including the proximity of the premises to sensitive sub-communities or sites, and the likely health and social impacts on that community or sub-community.

In Victoria, the location-based impacts of licensed premises are managed through a provision allowing for objections to licences on the grounds of area amenity, and the requirement for all licences to comply with the planning scheme for the area under the Planning and Environment Act 1987. The purpose of the act is to ensure that all activities undertaken in an area are consistent and appropriate for that location. Under the act, objections may be raised against licences on the grounds of proximity to sensitive land uses, including houses, schools or community and medical facilities. Melbourne's amended Planning Scheme (Clause 22.22) requires all applications for new licensed premise or the extension of existing licensed premises to include a location plan showing the location of properties used for sensitive uses in direct line of sight and within 100m of the premises.

- **Provisions for localised liquor bans or restrictions:**

All three states include provisions for area-specific liquor bans or restrictions in their liquor licensing acts. These bans and restrictions are applied to particular locations

where there is evidence of existing alcohol-related harms or disturbance. The scale and nature of the bans/restrictions vary between states. In Queensland, the regulatory authority may declare a community area to be a restricted area, and specify the maximum amount of liquor a person may have in their possession in that area without a permit. Similarly, the Victorian licensing authority may declare a public place in which alcohol-related violence or disorder has occurred a designated area, and apply bans or exclusion orders to that area. In NSW, authorities have established alcohol free zones in public areas that have attracted street drinkers, and banned the consumption of alcohol in these zones.

Other location-based restrictions include a temporary freeze on liquor licences for specified precincts in NSW, and the establishment of 'restricted alcohol areas' in NSW and 'drink safe precincts' in Queensland. All three types of restrictions are imposed by the licensing authority for specific locations to prevent alcohol-related disturbance and harms to the community of that area. Indeed, NSW's restricted alcohol areas are established based on the request of a group that represents the interests of the local community, and where the majority of the affected community supports the restriction. Possible restrictions on the sale, supply, possession or consumption of alcohol include restrictions on trading hours, the kinds of liquor that may be sold, or the way in which liquor is sold on licensed premises. In Queensland, late night premises in the Brisbane City Council area are also subject to additional conditions on their licences, including conditions about crowd controllers, incident registers and drinking practices.

- **Provisions for the creation of local liquor accords:**

The liquor licensing acts of all three states include provisions for the establishment of local liquor accords. Liquor accords are created for a specific location-based on an agreement or memorandum of understanding between two or more licensees or permittees in the area and the relevant licensing authority. Parties to the accord agree to a range of provisions, which are intended to promote responsible practices for the supply of liquor at licensed premises, minimise alcohol-related harms and minimise alcohol-related disturbances in the locality. Provisions may affect the supply of liquor, trading hours, public access to the premises, or other aspects of premises management (e.g. security staff) intended to minimise alcohol-related harms. In addition to these voluntary local accords, NSW's Liquor Act 2007 also includes provisions for precinct liquor accords and community event liquor accords, which do not require the agreement of accord participants to the stated measures. Precinct liquor accords may be established if there is significant risk of alcohol-related harms to members of the public within the precinct.

Further details on each state's location-based policy mechanisms are provided in Appendix 7, Table 23-Table 25.

3.2.2 Summary of alcohol outlet location policy mechanisms

The preceding review of international alcohol policies identified four main policy mechanisms that have been adopted by overseas governments and councils to minimise the effects of alcohol sales on particular locations:

- Liquor ban areas
- Restricted drinking areas
    - Cumulative impact policies
    - Freezes on additional premises
    - Restricted drinking hours
- Land use controls
    - Planning zones – allowed land uses
    - Residential and city zones – restricted hours
- Management strategies
    - Promoting mixed premise types
    - Identifying and managing community impacts
    - Managing impacts on sub-populations/sites
    - Local accords

The effectiveness of these policy mechanisms is reviewed in section 3.3.

3.3 Evaluation of the effectiveness of location-based policy mechanisms

This section summarises the available evidence on the effectiveness of location-based policy mechanisms in reducing alcohol-related harms. The summary is based on a review of the academic literature and professional reports, which sought to identify any evaluations of policy changes involving outlet location. Location-based policies are intended to reduce overall harms through targeting 'problem' areas, and/or reducing harms to vulnerable sectors of society. This section will review the policy mechanisms identified in section 3.2 in terms of their ability to affect these outcomes. The results of the review are summarised below, followed by a review of recommendations on outlet location mechanisms from the alcohol policy literature.

In comparison to alcohol outlet trading hours, very little research has been conducted on the effectiveness of location-based policies in reducing area specific and overall levels of alcohol-related harm. The limited evaluations that have been conducted have focused on the effectiveness of public liquor bans and local accords in reducing alcohol-related harms in Australia (see Babor et al., 2010, National Drug Research Institute, 2007). A brief evaluation of Newcastle's cumulative impact policy was also identified in a review of its statement of licensing policy. Table 26 summarises the available evidence on the effectiveness of these policy mechanisms. The review did not identify any evaluation of the effectiveness of restricted drinking areas, land use (zoning) controls or specific management strategies in the UK or Australia. While management strategies are identified as an important part of an effective policy mix (Babor et al., 2010), they are also context specific, so that the effectiveness of any one management mechanism will depend on the place in which it is implemented. The only evaluation of an attempt to manage impacts on sensitive sites identified in this review was an evaluation of the implementation of a US state licensing system (see Grubesic et al., 2012), which may be used to reflect on the likely effect of 'sensitive site policies' in the UK and Australia.

Public liquor bans:

While bans on the consumption of liquor in public places have been implemented in a number of countries, they are generally seen as having limited effectiveness and high implementation costs (Loxley et al., 2004, Babor et al., 2010). Two of the evaluations identified in this review highlight that while public bans may reduce the consumption of alcohol and related harms in specific areas, they do not generally result in overall reductions in harms, but rather displacement to other areas (National Drug Research Institute, 2007, National Preventative Health Task Force, 2008). However, Babor et al. (2010) suggest that public bans have the potential to reduce underage and marginalised

high-risk drinking, as these groups often use public venues for drinking. Comprehensive public bans will therefore reduce the availability of drinking locations for these groups. Indeed, in Canada, communities that adopted broad policies on drinking in public spaces significantly reduced the incidence of underage drinking, violence and vandalism (Gliksman et al., 1995). Bans may also be effective at reducing the impacts of alcohol consumption in areas currently experiencing high levels of alcohol-related harms and on sensitive sites, such as schools (National Drug Research Institute, 2007). However, such bans require ongoing enforcement, resulting in high implementation costs.

Local accords:

Local accords have been a popular location-based policy mechanism in Australia over the last twenty years; they have been incorporated into the licensing policy of several states and implemented by a number of communities. Homel et al. (2004) suggest that this growth in the number of accords resulted from a perceived lack of regulation in state wide policies during a period of licensing liberalisation. Local accords are an attempt to create cooperative agreements between local authorities, communities, police and licensees, in order to reduce the incidence of alcohol-related harms through agreed upon management strategies.

However, there is limited evidence of their effectiveness in reducing harms. Stockwell (2006) suggests that such voluntary codes of conduct can only be effective when there is a significant degree of enforcement, which is largely contrary to the intent of a cooperative approach. The evidence on the effectiveness of local accords is not conclusive; few evaluations have been conducted, and those studies that have evaluated the outcomes of accords are of limited methodological robustness (Mazerolle et al., 2012, National Drug Research Institute, 2007). The three reviews included in this study report on changes in the incidence of harms based on the perceptions of licensees, community and police, with mixed results. Further analysis is required to identify the extent to which accords have the ability to reduce alcohol-related harms over the long-term, and the circumstances in which they are most effective (Mazerolle et al., 2012).

The National Drug Research Institute (2007) suggests that local accords may be valuable management strategies purely due to the way in which they encourage improvements in communication and cooperation between licensees and police. Building such collaborative relationships may pave the way for more effective joint strategies in the future. Accords have also been noted to promote local ownership of alcohol issues, responsibility for the management of alcohol-related harms and the creation of management responses that are sensitive to place-based issues (Loxley et al., 2004). The success of local accords is therefore largely dependent on the level of community

and licensee buy-in and self-regulation (National Drug Research Institute, 2007). Several reviews suggest that such voluntary codes are likely to be ineffective in the long term unless supported by enforcement mechanisms such as costs of non-compliance (Stockwell, 2013). However, regulatory enforcement may deter community and licensee participation unless it is self-imposed.

Cumulative impact policies:

Table 26 also summarises the findings of two other evaluations of location-based policies. In reviewing its licensing policy statement, Newcastle City Council (in the UK) identified cumulative impact areas as an effective way of managing alcohol-related harms in high-risk areas. Cumulative impact areas were implemented through restricted trading hours for targeted areas, resulting in greater reductions in alcohol-related problems in those locations relative to the wider city. Cumulative impact areas have also been taken up as a policy mechanism within the State of Victoria as a means to control the licensing conditions and require additional management activities in problem areas. Other Australian governments have also used restrictions on licensing in particular areas to protect existing land uses, especially residential suburbs, from alcohol-related harms. While the increasing use of 'area' policies suggests that cumulative impact areas have been found to be an effective mechanism, there is a lack of evaluation to substantiate this finding.

Proximity controls:

Several councils also refer to restricting the proximity of alcohol outlets to sensitive sites or land uses (e.g. Edinburgh Statement of Licensing Policy). However, there are no evaluations available on the implementation or effectiveness of proximity policies in Australia or the UK. Similar policies have been used in some states in the USA, where alcohol outlets are not allowed to locate within a set radius of religious or educational sites. However, the review by Grubesic et al. (2012) demonstrates that the implementation of these proximity policies has not been successful in creating a buffer zone around community facilities.

Despite the limited evaluation of location-based mechanisms, the weight of policy evidence suggests that location-based policies may be an effective means of reducing harms in problem areas and preventing harms to vulnerable sub-populations and sites. Sections 1 and 2 have demonstrated that density and trading hour policies are two moderately effective ways of reducing the overall incidence of alcohol-related harms. If these policies are applied to sensitive areas or areas currently experiencing issues in a way that responds to local area characteristics, they are likely to be an effective way of reducing harms for that area. This review of the academic literature and government policy has also identified a range of management mechanisms that can be used to

support the implementation of place specific policies. Indeed, location-based policies that respond to the needs and issues of a particular site, area or population, reflect current arguments in the academic literature that effective policies are based on a robust understanding of the local context in which they will be implemented (Gruenewald, 2011, Gruenewald et al., 1996, Holder and Reynolds, 1998, Livingston et al., 2007). The importance of community or area based policies is reflected in the recommendations of professional and academic reviews of policy mechanisms to reduce alcohol-related harms (Table 3).

Table 3: Conclusions on outlet location mechanisms in professional and academic reviews

Review	**Conclusion**
Ashe et al., 2003	Affirms the role of local government and land use planning in licensing decisions and the regulation of alcohol availability: "For practitioners, the research suggests the importance of zoning decisions regarding individual outlets within a particular neighbourhood setting."
World Health Organisation, 2004	Recommends restrictions on days and hours of sales as part of an effective policy mix to target problem/high-risk areas. Also suggests regulating the location of alcohol outlets, including near schools, religious place of worship or workplaces.
Stockwell, 2013	"strategies that are seen to directly target harms or high-risk drinkers are generally better received… In most countries, a relatively small number of bars and clubs contribute to the bulk of incidents of violence and public disturbance – for example, as few as 10% may contribute to more than 60% of disturbances. This means there is a special role for police and licensing authorities being involved in identifying and targeting higher risk venues."
Loxley et al., 2004	Recommends continued and enhanced investment in four key areas, including: "Targeted interventions to address vulnerable and disadvantaged groups, with particular attention to Indigenous Australians" Identifies licensee codes of conduct (e.g. accords) as having moderate evidence of effectiveness when accompanied by enforcement.
Loxley et al., 2005	Community initiated restrictions (including limitations on hours of sale and banning the sale of wine in casks): "Generally, restrictions have been found to be effective in reducing consumption and harm measured by key indicators such as hospital admissions and police arrests. They have been most effective when they have been initiated by Indigenous people, conducted as part of broader strategies to address alcohol-related harm, and have had

	wide community support."
Casswell and Maxwell, 2005	"The development of sound policy mechanisms for better control over density, location and hours is also a priority. Amendments of the Sale of Liquor Act could require the development of policies that enable more effective means of control and meaningful community input, and greater use could be made of the potential for social impacts of premises to be considered through the Resource Management Act."
Romley et al., 2007	"existing policies intended to mitigate the localized impacts of alcohol retailing—such as restrictions on proximity to schools (Ashe et al., 2003) or per capita restrictions—might be supplemented with restrictions on outlets per roadway mile."
Herring et al., 2008	Suggests that cumulative impact policies and opportunities for community 'representations' against licence applications puts residents in a stronger position to influence liquor licensing, and that this will help to prevent increases in alcohol-related harms.
Anderson et al., 2009a	Community programmes: "Interventions that have controlled access, which have included the environmental contexts of selling and distribution and which have involved enforcement, are effective in reducing alcohol-related traffic fatalities and assault injuries."
Day et al., 2012	"Policies to reduce the availability of alcohol should involve greater efforts to improve local alcohol retail environments including interventions restricting the establishment and trading hours of alcohol outlets, particularly in socially disadvantaged neighbourhoods and neighbourhoods with vulnerable populations."

Two key considerations in the implementation of location-based policies are highlighted in the academic literature:

- **The importance of a sound evidence base**

A survey of local councils' implementation of the UK Licensing Act 2003 identified that a sound evidence base was needed if decisions on cumulative impact zones were to be upheld against industry challenges (Herring et al., 2008). The availability and collection of evidence was also important in identifying potential cumulative impact areas and assessing the claims of stakeholders on the incidence of harms in the area. Roberts (2006) highlights that large alcohol companies can afford specialist lawyers to contest planning and licensing decisions; area based decisions therefore require a firm evidential basis. However, the collection of robust evidence, in particular the establishment of causal relationships, can be challenging:

"The rhetoric of evidence-based policy and practice has been prominent across policy domains although the reality of providing adequate baseline and evaluation

data often falls far short of the ideal. …The challenges of collecting and collating evidence and also of deciding what counted as evidence were raised repeatedly within the interviews, particularly in relation to 'special policies' such as cumulative impact zones and representations, especially from residents." (Herring et al., 2008)

- **The role of monitoring and enforcement**

Effective implementation of location-based licensing policies requires baseline data collection on harms to identify target areas, as well as long-term monitoring of harm indicators to track policy effectiveness. Monitoring will help to inform a responsive policy framework and appropriate levels of policy enforcement. Effective monitoring may include the level of implementation, as well as police and hospital statistics:

"In order to know, with reasonable surety, whether a restriction or a suite of restrictions has had or continues to have the desired effect(s), there needs to be a process of formal evaluation and/or monitoring…Well designed evaluations typically include a core set of characteristics: a complementary collection of reliable, relevant and objective data to 'measure' outcomes; a comparison of measures taken 'before' and 'after' the implementation of the intervention… and, the identification and consideration of other characteristics or interventions which might also be responsible for apparent outcomes." (National Drug Research Institute, 2007)

Conclusion

This research involved a review of the professional and academic literature on the relationship between three measures of alcohol availability and the incidence of alcohol-related harms, and the effectiveness of different policy mechanisms in regulating availability and reducing harms. The three measures of alcohol availability assessed were the density of licensed premises, trading hours (including one-way door policies) and the location of licensed premises. These measures form the basis of the three policy options being investigated by the Auckland Council for the development of its local alcohol policy.

The review found evidence for the effectiveness of a range of policy mechanisms in reducing alcohol-related harms. Both density controls and trading hour restrictions were identified as having moderate evidence of effectiveness in reducing alcohol consumption and related harms. Other reviews have also identified these mechanisms as having a low cost to implement (Babor et al., 2010). Less evidence was available for the effectiveness of location-based policy mechanisms, but reviews of local alcohol policies and the academic literature found that location-specific policies were often used to control impacts on sensitive sites and sub-populations. The following paragraphs summarise the evidence for each policy issue, the key policy mechanisms implemented in the UK and Australia, and the evidence for the effectiveness of these mechanisms. The section concludes by describing key considerations for the implementation of supply-based policies, identified from the review of the academic literature.

Outlet density policy mechanisms

The academic and professional literatures provide consistent evidence of a positive relationship between alcohol outlet density and alcohol-related harms. While the review of empirical studies illustrated variability in the relationship between density and different types of harm, all studies identified at least one positive, statistically significant relationship with an alcohol-related harm. A number of studies also identified the additional role of outlet clusters in causing alcohol-related harms, including alcohol-related crashes, pedestrian road injuries and violent assaults. Furthermore, reviews of the international academic literature reported consistent evidence for the positive relationship between alcohol outlet density, consumption levels and the incidence of alcohol-related harms, including violence, crime, medical harms and drink-driving accidents (e.g. Popova et al., 2009).

Governments and local authorities in the UK and Australia have incorporated density control measures into their alcohol policies, including region-wide and area-specific cumulative impact policies, plan zoning and licence freezes. While there has been

limited evaluation of the effectiveness of these policies in reducing alcohol-related harms, the available evidence demonstrates that greater outlet density is associated with increased alcohol consumption and related harms. Based on these findings, it is argued that a decline in harms will occur with the introduction of density controls or a reduction in density. Indeed, the well-evidenced positive relationship between alcohol outlet density, alcohol consumption and related harms has resulted in the general promotion of density controls as a key regulatory mechanism in reducing alcohol-related harms (e.g. World Health Organisation, 2004, National Drug Research Institute, 2007, Babor et al., 2010).

Review of the academic literature and international 'best practice' suggests that alcohol outlet density mechanisms can be an effective means of reducing alcohol-related harms. Potential mechanisms include:

- targeting problem areas, with a presumption against further licences in those areas
- requiring all applicants to identify their proximity to other premises, sensitive sites, transport infrastructure
- making licensing decisions on the basis of their merits and/or community impact
- creating different requirements/restrictions for different licence types (greater control on the density of some licence types)
- creating different requirements/restrictions for different land use types (e.g. centres, suburbs).

Outlet trading hour policy mechanisms

This review of the academic and professional literature also provided evidence of a positive relationship between alcohol outlet trading hours and alcohol-related harms. While fewer empirical studies could be found, the available evidence demonstrates that alcohol-related harms are concentrated in time, with a peak in incidents coinciding with the closing time of licensed premises. Other studies demonstrated that premises with extended trading hours experience a greater number of assaults and other alcohol-related crime. The results of this review are consistent with the findings of other reviews that have been conducted on the relationship between trading hours and alcohol-related harms (e.g. Stockwell and Chikritzhs, 2009).

Despite the liberalisation of licensing legislation in the UK in the last decade, and subsequent deregulation of trading hours in the UK, a number of UK local authorities incorporated trading hour restrictions in their local licensing policy statements. Authorities in Australia employ a range of controls on trading hours, including restrictions on different area types, premises types and zones, extended hours applications, lockout

policies, impact assessments and management plans. Evaluations of extended trading hour policies and restrictions on trading hours provide a wealth of evidence of the effectiveness of trading hours in reducing alcohol-related harms. Evaluations of extended trading hours in the UK and elsewhere have reported increases in alcohol-related harms and the temporal displacement of harms, while longitudinal studies of restricted trading hours found that they were associated with an overall reduction in the incidence of alcohol-related harms. There is some evidence that lockout policies can be effective at reducing late night/early morning harms, but this requires further investigation. The positive relationship between alcohol outlet trading hours, alcohol consumption and related harms has resulted in the general promotion of trading hour provisions as a key regulatory mechanism to reduce alcohol-related harms (e.g. World Health Organisation, 2004, National Drug Research Institute, 2007, Stockwell, 2013).

Review of the academic literature and international 'best practice' suggests that alcohol outlet trading hour mechanisms can be an effective means of reducing alcohol-related harms. Potential mechanisms include:

- setting different standard hours and extended licence hours for different areas, based on their land use type and current levels of harms
- restricting off-licence trading hours
- granting extended licences on a trial basis
- implementing lockout policies in late night 'hotspots'
- targeting problem areas, with a presumption against licence extensions and late night trading in those areas
- requiring community impact assessments and management plans for licence applications that include late night trading.

Location-based policy mechanisms

The final policy option investigated was the implementation of location-based policies, intended to protect sensitive sites and sub-populations (such as schools, churches and young people) from alcohol-related harms. The academic literature suggests that some parts of the population experience greater levels of alcohol consumption and related harms as a result of high exposure to and availability of alcohol. Men, youth, low-income earners and some ethnic groups tend to consume larger quantities of alcohol, practice 'problem drinking' behaviours (including binge drinking and drunkenness) and experience greater levels of direct harms. In particular, studies draw attention to the relationship between alcohol outlet density and young people. In addition to outlet density, studies have identified a relationship between alcohol-based advertising near schools and student drinking. The review also identified that residents of 'problem' areas

experience greater levels of indirect harms, including disturbance, assault and property damage.

The review of international alcohol policies found that overseas governments and councils have adopted a range of policy mechanisms to minimise the effects of alcohol sales on particular locations and land uses. Mechanisms include liquor ban areas, restricted drinking areas, land use controls and management strategies (including local accords). However, very little research has been conducted on the effectiveness of location-based policies in reducing area-specific and overall levels of alcohol-related harm. Bans on the consumption of liquor in public places are reported to have limited effectiveness and high implementation costs, as they do not generally result in overall reductions in harms, but rather displacement to other areas. However, bans are promoted for the reduction of alcohol-related harms in sensitive sites and areas currently experiencing high levels of harms. Evidence on the effectiveness of local accords is not conclusive; few evaluations have been conducted, and those studies that have evaluated the outcomes of accords are of limited methodological robustness. Similarly, while cumulative impact areas and land use zoning have been indicated as successful strategies by local authorities, insufficient evidence is available to substantiate these findings. Despite the limited evaluation of location-based policy mechanisms, professional and academic reviews highlight the importance of community- or area-based policies in the reduction of alcohol-related harms. Indeed, it is argued that effective alcohol policies are based on a robust understanding of the local context, and respond to the needs and issues of a particular site, area or population in which they are implemented (Gruenewald et al., 1996, Livingston et al., 2007, Gruenewald, 2011).

Review of the academic literature and international 'best practice' suggests that location-based policy mechanisms can help to reduce the impact of alcohol consumption on sensitive sites or sub-populations. Potential mechanisms include:

- requiring applicants to undertake community impact assessments to identify sensitive sites and potential social impacts (e.g. through Environmental Impact Assessments under the RMA)
- in considering the merits and potential impacts of licence applications, giving particular consideration to the proximity of outlets and advertising to school entrances and exits
- creating area-based policies (such as liquor bans and trading hour or density restrictions) to target problem areas
- exploring opportunities to develop cooperative partnerships with licensees (e.g. accords)

Considerations for the implementation of policy mechanisms

The academic literature has also identified a range of considerations for the effective implementation of supply-based policy mechanisms. Reviews of each policy issue and the effectiveness of policy mechanisms highlighted significant variability in findings, dependent on the harms, country, licence type and population in question. This variability demonstrates the need for local alcohol policies to respond to the issues and policy history of a particular place, and the diversity in land uses, population characteristics and experiences of alcohol-related harms within that place. In particular, effective policies will reflect the different harms associated with on-and off licence premises and socio-spatial differences in the experience of harms. Effective policy creation is therefore dependent on the construction of a strong evidence base, to ensure that policy mechanisms are appropriate to the area in which they are implemented, and targeted at the key policy issues. The literature also suggests that effective interventions are reliant on robust, reflexive implementation planning, incorporating enforcement and monitoring:

> *"Although certain restrictions may hold considerable promise for reducing consumption and related harms in some areas, it must be recognised at the outset that they also need considerable support to achieve their full potential… In order to know, with reasonable surety, whether a restriction or a suite of restrictions has had or continues to have the desired effect(s), there needs to be a process of formal evaluation and/or monitoring…"* (National Drug Research Institute, 2007)

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Appendix 1: Review of evidence for the policy issue: density of licensed premises

Table 4: Summary of recent studies investigating the relationship between alcohol outlet density (AOD) and alcohol-related harms, published in academic journals and professional reports*

*reports that have not been subject to peer review are indicated with an asterisk in the 'study' column

Study	Focus of study	Density measure(s)	Setting	Key findings
Burgess and Moffatt, 2011	Spatial effect of licensed premises and outlet density on assault incidence.	- proximity to outlet - number of outlets in a cluster - number of outlets per unit area	Sydney	A disproportionately high number of assaults occur within the immediate vicinity of licensed premises. e.g. the area within 20m of a liquor outlet has 37% of the assault incidents in Sydney LGA, yet accounts for just 3% of the land area. 56.8% of assault incidents recorded by police in the Sydney CBD occur within 50m of a licensed premises. Each additional alcohol outlet per hectare in the Sydney LGA will result in 4.5 additional assaults p.a. on average.
Cameron et al., 2010*	Effect of liquor outlets on the number of police events or incidents (per 10,000 population, per year)	- number of outlets per 10,000 population	Manukau	The addition of a single extra off-licence was associated with an extra 60-65 police incidents in the year to June 2009. Each additional club or bar was associated with an extra 98-101 police incidents. Each additional restaurant or café was associated with an extra 24-29 police incidents.
Campbell et al., 2009	Used time-series studies of changes in outlet density and policy to assess the effects of outlet density on alcohol-related harms.	Review: multiple measures used	High income nations	All five studies that assessed the association between outlet density and alcohol consumption found that increased density was associated with increased consumption. Two studies, using the same methods and database in California, found mixed results when evaluating the association between on- and off-premises outlet density and fatal and nonfatal motor-vehicle crashes.

				Seven of nine time–series studies found positive associations between changes in outlet density and alcohol-related harms, particularly interpersonal violence.
Chikritzhs et al., 2007*	Collected information on alcohol consumption and related harms to objectively evaluate the impact of changes to outlet density on public health and safety. Tested the relationship between the type of licensed outlet and the location of offence, time of offence and type of offence.	Three measures: - number of outlets per local government area - number of outlets per unit area - volume of wholesale alcohol purchases by outlets	Australia	Outlet density had a positive association with all the harm indicators measured – that is, as the outlet density increases so too does harm. The strength of associations was highly variable. All three outlet density measures indicate strong associations with assaults, drink-driver road crashes and roadside breath testing offences. Outlet density, as measured by wholesale purchase volume, is strongly associated with alcohol-attributable hospitalisations and deaths. The strength of associations between wholesale purchases and harm varies by licence type. For all models tested, both volume of purchases and count of outlet density measures were significantly associated with levels of assaults after adjusting for socio-economic/demographic variables. Despite the predictive power of demographic and socio-economic variables, volume of purchases predicted the greatest amount of variance in reported assaults and was the most influential of all predictor variables in five out of six models.
Connor et al., 2011	Examined the association of outlet density within 1km of an individual's home with their self-reported alcohol consumption and harm, while controlling for area deprivation and socioeconomic status.	Number of outlets within 1km of a person's home	New Zealand	No statistically significant association was seen between outlet density and average alcohol consumption or risky drinking. Density of off-licences, bars and clubs was positively associated with binge drinking. The study showed a 4% increase in the likelihood of binge drinking with each additional off-licence within 1km of home. Density of all types of outlet was significantly associated with alcohol-related harm scores. Density of clubs had the strongest association with harm scores, where one additional club within 1 km of home was associated

				with a 5.7% increase in the score. The positive associations between alcohol outlet density and both binge drinking and alcohol-related problems are independent of socioeconomic status.
Day et al., 2012	Examined the association between distance to nearest alcohol outlet (grouped by licence type) and serious violent offences recorded between 2005 and 2007 for each police station area.	Road travel distance to the nearest outlet for each area	New Zealand	There were significant negative associations between distance to licensed outlets and the incidence of serious violent offences. I.e. greater levels of violent offending were recorded in areas with close access to licensed premises compared to those areas with least access. serious violence offence rates were higher for on-licence than off-licence outlets. Found strong evidence of a negative relationship between distance to closest outlets and serious violent offending after controlling for area-level confounders. Those areas with the greatest geographic access to alcohol outlets, regardless of licence type and category, recorded the highest incidences of serious violent crime, with the incidence of violent crime lessening in areas with increased travel distances to alcohol outlets. The exception was off-licence premises, which were a significant predictor of area-level violent crime incidence, regardless of geographic distance.
Donnelly et al., 2006*	Examined the relationship between the concentration of licensed premises in a given area and perceptions of alcohol-related problems in that locale. This investigation examined two outcomes: (1) reported problems with drunkenness in the neighbourhood, (2) reported problems with property damage in the	Outlet accessibility: average distance to the 5 closest outlets for each census area. Outlet density: number of outlets per	New South Wales	Statistically significant associations were found for both liquor outlet accessibility and density with reported neighbourhood problems with drunkenness, after controlling for the other confounder variables: • 24.4% of respondents who lived within 0.5km of the five closest licensed premises reported problems with drunkenness in their neighbourhood, cf. 9.5% of those who lived further than 1.6 km away. • 20.8% of the respondents who lived in areas with more than 22 licensed premises per 10,000 population reported neighbourhood problems with drunkenness, cf. 11-15% of respondents who lived in areas with fewer premises.

	neighbourhood. Alcohol outlet concentration measured by: (1) liquor outlet accessibility and (2) liquor outlet density.	10,000 population		Statistically significant associations were found for liquor outlet accessibility with reported property damage in the neighbourhood, after controlling for the other confounder variables: • 36% of respondents who lived within 0.5km of the five closest liquor outlets reported that there were problems with property damage in their neighbourhood, cf. 23% who lived further than 1.6 km away.
Escobedo and Ortiz, 2002	Assessed the relationship between alcohol outlet density and alcohol-related health outcomes, including arrests for driving while intoxicated, alcohol-related crashes, crash fatalities, suicides and homicides.	Number of outlets per capita (drinking age population)	New Mexico	Suicide, alcohol-related crash, and alcohol-related crash fatality are significantly associated with outlet density. These associations remain statistically significant after being adjusted for socio-demographic variables. Homicide and drink-driving arrest rates were not significantly associated with outlet density. With one unit increase in liquor outlet density: • the rate of suicide (per 1000 population) increases by 0.23 • the rate for alcohol-related crashes (per 1000 population) increases by 2.4 • the rate for alcohol-related crash fatalities (per 1000 population) increases by 0.22
Freisthler et al., 2004	Examines the relationship between the number of licensed premises per population and rates of physical child abuse and neglect.	Number of outlets per zip code	California	There was a statistically significant positive association between the number of off-premise outlets per population and rates of child abuse. There was a statistically significant positive association between the number of bars per population and rates of child neglect. The number of restaurants serving alcohol was not related to rates of physical abuse or neglect.
Freisthler et al., 2009	Uses hierarchical linear modelling to assess whether greater densities of alcohol outlets interact with levels of parental monitoring to affect levels of deviance among adolescents. Adolescents	Number of outlets per roadway mile	California	Adolescents in areas with more bars per roadway mile report lower levels of parental monitoring behaviours, which is associated with higher levels of adolescent deviance: • Adolescents living in areas with greater densities of bars reported lower levels of parental monitoring. • grade point average, abstaining from alcohol use, and

	were asked to report on the frequency with which they had participated in a range of behaviours (e.g. stealing, fighting) and their level of parental monitoring.			parental monitoring had a statistically significant negative correlation with levels of adolescent deviance.
Freisthler et al., 2007	Examined how changes in alcohol outlet density over a 6-year period were related to rates of referrals, substantiations and foster care entries as a consequence of child maltreatment.	Number of outlets per zip code	California	Statistically significant increases in child maltreatment referrals, substantiations and foster care entries were found for areas with higher concentrations of off-premise alcohol outlets. The model estimated that an average decrease of one off-premise outlet per zip code area would reduce total referrals across the 579 zip codes by 1,040 cases, substantiations by 180 cases, and foster care entries by 93 cases. Increases in bar density were significantly correlated with more foster care entries in local and neighbouring zip code areas. Higher numbers of restaurants in local and neighbouring zip codes were significantly related with decreases in maltreatment.
Gruenewald et al., 1996	Studied the relationship between single vehicle night-time crashes and outlet density by outlet type in four communities.	Number of outlets per roadway km	California	The results demonstrated significant relationships between restaurant densities and crashes both across and within communities. The positive relationship between outlet density and crashes was strongest for restaurants. No significant effects were found for the density of bars or off-licence premises. The relationship between restaurant density and crashes may be due to drinking patterns. Restaurants were frequented twice as often as bars for the consumption of alcohol. A 10% increase in restaurant density was related to 1.7% higher crash rates.
Gruenewald and Remer, 2006	Used 6 years of longitudinal data to examine the relationship between assault rates, demographic data and the number of alcohol outlets	Number of outlets per zip code	California	A 10% increase in local numbers of off-premise outlets was related to a 1.67% increase in violence. Across local and lagged areas, a 10% increase in numbers of bars was related to a 2.06% increase in violence. Based upon this analysis, the addition of 1 bar to the average zip

	in an area.			code area in the current study would produce about 0.17 hospitalized assaults per year or 1 assault for every 6 bars. However, areas with very large numbers of bars (up to 61 in the current study) and very dense populations can expect to have far greater numbers of assaults related to bars - up to 76 per year based on current analyses.
Gyimah-Brempong and Racine, 2006	Used a nonparametric method to investigate the relationship between alcohol licence density and crime rates, including violent crime, property crime and homicide.	Number of licences per 1000 people in a census area	Detroit	There is a positive and statistically significant relationship between crime rates and alcohol licence density. A unit increase in licence density is associated with 14.45, 2.93, 11.53 and 0.04 unit increases in total crime, violent crime economic crime and homicide rates respectively. The impact of alcohol availability is considerably higher than suggested by parametric models.
Huckle et al., 2008	Examined the relationship between the physical, socio-economic and social environments and alcohol consumption patterns of adolescent drinkers. Environmental measures included alcohol outlet density, local willingness to sell alcohol and neighbourhood deprivation.	Number of outlets per meshblock and CAU	Auckland	Outlet density was significantly correlated with the quantity of alcohol consumed on a typical occasion and approached significance for frequency of drunkenness. Outlet density was not related to frequency of drinking. NZDEP was correlated highly with outlet density. A number of other factors were significant in predicting the quantity and frequency of adolescent alcohol consumption, including the frequency of social supply (by parents etc), age, ethnicity and self reported purchasing.
Kavanagh et al., 2011	Examined the association between access to off-premises alcohol outlets and harmful alcohol consumption, including drinking at levels associated with short-term and long-term harm, and frequency of consumption.	Number of outlets within a 1km road network of respondents' homes	Melbourne	Alcohol outlet density was significantly correlated with alcohol consumption at levels associated with short- term and long term harm. Outlet density was most strongly correlated with monthly consumption of alcohol at levels related to short term harm. The risk of harmful consumption was highest when there were eight or more outlets within 1km of respondents' homes. Density was not significantly associated with the frequency of alcohol consumption.

				No statistically significant trend was detected for the proximity of alcohol outlets.
Kypri et al., 2008	Examined the relationship of alcohol outlet density with drinking patterns, personal problems and second hand effects among University students. Alcohol-related harm was assessed on a student level by testing the correlation between outlet density within a 1km and 3km range of each student's residence and daily drinking levels and related problems.	Number of outlets within 1km and 3km of the campus. Number of outlets within 1km and 3km of student homes.	New Zealand	There were consistent significant associations for both on- and off-licence outlet densities with all three outcomes in student-level, adjusted models. Effects were largest for 1 km densities and off-licence outlets. For each additional 10 off-licence outlets within 1 km of respondents' homes: • respondents consumed, on average, 1.090 times as many drinks per drinking day (P=0.01) • respondents had 1.107 times as many alcohol-related problems (P<0.0001) • respondents experienced 1.133 times as many second-hand effects (P<0.01) For a national university student population of 333 000, in a given 4-week period, each additional off-licence alcohol outlet within 1 km of respondents' residences would be associated with: • 5,570 more alcohol-related problems among drinkers • 10,130 additional second-hand effects Another significant factor affecting student drinking and related harms was their 'propensity to drink', measured in terms of whether respondents were frequent binge drinkers in high school.
Lascala et al., 2001	Used archival data to Investigate whether neighbourhood characteristics, including alcohol outlet density, was related to the number of alcohol-related pedestrian injury collisions	Number of outlets per roadway km	California	Alcohol-involved pedestrian collisions occurred more often in areas with greater bar densities and greater population, and where the local population reported drinking more alcohol per drinking occasion. Alcohol outlet density was significantly positively correlated with the number of alcohol-related pedestrian collisions.
Liang and Chikritzhs, 2011	Used a cross sectional study to investigate the effect of the number of outlets, alcohol	Number of outlets per local	Perth, Western Australia	Average alcohol sales volume per off-site outlet was significantly associated with all measures of assault. The incidence rate ratio was largest for assaults occurring at

	sales and types of alcohol outlets on the risk of assault.	government area		residential locations; for every 10 000 additional litres of alcohol sold by an off-site outlet, the risk of violence on residential premises increased by 26%. Numbers of on-site outlets significantly predicted violence with the exception of assaults occurring at residential premises. The strongest association was for assaults which occurred at on-site outlets, estimated as a 5% increase in violent assault for one additional on-site licence. Alcohol sales from off-site outlets predicted violence occurring at on-site outlets.
Livingston, 2008a	Used cross-sectional data on police reported assaults, alcohol outlets and socio-demographic characteristics to test the relationship between outlet density and assault.	Number of outlets per 1000 residents in postcode	Melbourne	The density of general, on-premise and off-premise licences were all found to have a significant, positive relationship with alcohol-related assault rates. General and on-premise licence densities had stronger, more significant relationships with assault rates. A non-linear model of the effect of outlet densities provided the best fit for the data. A non-linear relationship suggests that the effect of an additional outlet on assault rates will vary depending on the number of existing outlets. Examination of the non-linear effects of outlet density demonstrated a critical threshold for general licence density, after which each additional outlet contributes increasing numbers of additional assaults.
Livingston, 2008b	Longitudinal analysis of 9 years of data measuring alcohol outlet density and alcohol-related violence (police recorded night-time assaults) from 186 postcodes in the metropolitan area.	Number of outlets per postcode	Melbourne	Significant, positive relationships were established between the density of general, off-licence and on-premises licences and the number of alcohol-related assaults. Modelled postcode clusters demonstrated that the link between outlet density and violence was significant in all neighborhood types, but the specific relationships varied substantially between neighbourhoods: • off-licence liquor outlets were consistently associated with violence in suburban areas • general (hotel) and on-premise (nightclubs, restaurants,

				and bars) licences were associated with violence in inner-city and inner-suburban areas.
Norstrom, 2000	Time-series analysis of the association between the number of public drinking places and crime statistics (violence charges and convictions) per 100,000 inhabitants	Number ofoutlets per 10,000 inhabitants	Norway	A statistically significant positive relationship was found between alcohol outlet density and the number of violent crimes investigated by police. A positive relationship was also identified between alcohol outlet density and convictions for criminal violence. However this relationship was of borderline significance (P = 0.057).
Scribner et al., 2008	Examined the relationship between the physical availability of off-campus alcohol and drinking outcomes among college students. Students residing on campus reported on four problem-drinking-related outcomes: average number of drinks when partying, frequency of drunkenness in the past 2 weeks, 30-day frequency of drinking and greatest number of drinks in one sitting.	'Physical availability': number of outlets within 3 miles of campus per 1000 enrolled students.	USA	Higher densities of on-premise alcohol outlets were strongly related to drinking outcomes even after controlling for individual predictors of college drinking. At the campus level, the average on-premise alcohol outlet density at 3 miles was 24.5 per 1,000 enrolled, whereas the average off-premise alcohol outlet density was 9.7 per 1,000 enrolled. On-premise alcohol outlet density had a statistically significant effect on the level of student drinking when partying. The magnitude of the effect was equivalent to a 1.13 drink increase in the reported number of drinks when partying with a 2SD difference in on-premise outlet density across study campuses. On-premise outlet density was significantly correlated with "frequency of drunkenness" outcome, explaining 28.4% of the variance at the campus level. The estimated effect of a 2SD increase in on-premise alcohol outlet density was an 0.74 increase of in the "frequency of drunkenness" for the past month. On-premise outlet density accounted for approximately 25% of the variance in the frequency of consumption at the campus level and was significantly associated with drinking frequency at the individual level. A 2SD increase in on-premise outlet density across the study

				campuses was associated with a 1.14 occasion increase in the number of drinking occasions in the past 30 days.
Treno et al., 2003	Investigated the relationship between AOD and self-reported underage drinking and driving, acquired through two telephone surveys. AOD was measured by the number of on- and off-premise establishments licensed to sell alcohol in a zip code area.	Number of outlets per square mile	California	There was a statistically significant positive association between AOD and the frequency of drinking and driving among respondents. There was a statistically significant positive association between AOD and the frequency of 'riding with drinking drivers' among respondents. In both instances, younger respondents and women were more likely to be affected by outlet densities. The relationship between AOD and drinking and driving was almost identical for on-licence and off-licence premise densities.
Weitzman et al., 2003	Designed to determine whether AOD correlated with heavy and frequent drinking and drinking-related problems. AOD was compared with the geo-referenced results of the Harvard School of Public Health College Alcohol Study. Relationships were investigated across all student drinkers and particular subgroups.	Number of outlets within a 2 mile radius of university campus	Boston, USA	There was a significant correlation between AOD and heavy drinking (i.e. consumed 5+ drinks at an off-campus party) for all drinkers. Significant correlations were also found for multiple subgroups of students, including males and students who picked up binge drinking in college. AOD was significantly correlated with frequent drinking (i.e. drank on 10+ occasions in past 30 days) for all drinkers. AOD was significantly correlated with problem drinking (i.e. reporting 5+ problems since the beginning of the school year) among all drinkers. Significant correlations were also found for women, underage students and students who reported picking up binge drinking in college.
Wechsler et al., 2002	Examined the relationship between a college's level of binge drinking and nearby alcohol outlet density, with the secondhand effects of student alcohol use	Number of outlets within 1 mile of respondents' homes	USA	Residents near colleges and particularly near colleges with heavy episodic drinking reported a statistically significant difference in the presence of alcohol outlets within a mile of their homes. Neighbours living near college campuses were more likely to report a lowered quality of neighbourhood life through such

	experienced by residents. Used a phone survey to identify residents' experiences of secondhand effects of alcohol use (e.g. noise, vandalism). Compared the responses of individuals living near colleges to those that do not, and the correlation between outlet density and resident responses.			secondhand effects of heavy alcohol use as noise and disturbances, vandalism, drunkenness, vomiting and urination A path analysis indicated that the number of nearby alcohol outlets was an important factor mediating the relationship between colleges and such secondhand effects.
Young et al., 2013	In a cross-sectional study of 979 15-year old Glaswegians, we investigated the association between alcohol outlet availability (outlet density and proximity), outlet type (on-premise vs. off-premise) and frequent (weekly) alcohol consumption.	Roadway distance between participant home and nearest outlet. Number of outlets within 1.2km of participant home	Glasgow, Scotland	Proximity and density of on-premise outlets were not associated with weekly drinking. Network distance to nearest off-sales outlet and the number of off-sale outlets within 1200m were significantly associated with weekly alcohol use. Adolescents living close (within 200m) to an off-sales outlet were nearly twice as likely to drink weekly than those living more than 800 m away from such outlets. Pupils living in areas with a high density of nearby off-sales outlets (31+ within 1200m) were approximately 50% more likely to drink weekly than those with 0–10 off-sales outlets within 1200m.
Zhu et al., 2004	An ecological study of the relationship between alcohol outlet density and violent crime, controlling for neighbourhood sociostructural characteristics and the effects of spatially autocorrelated error.	Number of outlets per 100 residents for each census area	Austin and San Antonio, Texas	The neighbourhood socio-structural characteristics explained close to 59% of the variability in violent crime rates in Austin and close to 39% in San Antonio. Adding alcohol outlet density in the target and adjacent census tracts improved the explanatory power of both models. Alcohol outlet density in the target census tract remained a significant predictor of violent crime rates in both cities when the effects of autocorrelated error were controlled for. In Austin, the effects of alcohol outlet density in the adjacent census tracts also remained significant.

Appendix 2: Overseas policy mechanisms: density of licences

Table 5: UK local council policies relating to outlet density

Council, policy	Provisions relating to density
City of London Statement of Licensing Policy, 2013	"When considering whether any licensed activity should be permitted, the City Corporation will assess the likelihood of it causing unacceptable adverse impact, particularly on local residents and businesses, by considering the following factors amongst other relevant matters:… v) …any negative cumulative impact of licensed premises in an area" "In determining an application, the authority will take into account, in the interests of public safety and the avoidance of nuisance, any representations relating to the negative cumulative impact that the existence of a saturation of premises in one area may have. A saturation of licensed premises can attract customers to the area that has an impact on the surrounding area beyond the control of individual licence holders. The City Corporation will take this into account whenever it receives representations about cumulative impact on the licensing objectives if warranted within a specific area."
London Borough of Lewisham Licensing Policy 2010	"Where the Council receives satisfactory evidence that the cumulative impact of a concentration of licensed premises in a specified area is undermining the promotion of one or more of the licensing objectives, it may include within this Policy a special cumulative impact policy (CIP) in respect of that area." "The effect of any cumulative impact policy is to create a rebuttable presumption that applications for new premises licences or club premises certificates or material variations to existing licences/certificates will normally be refused if relevant representations are received unless it can be demonstrated that the operation of the premises involved will not add to the cumulative impact already being experienced" "Before the Council may lawfully consider giving effect to its CIP a relevant representation must have been made."
Newcastle City Council Statement of Licensing Policy 2011-2013	"The Licensing Authority has… adopted a "Cumulative Impact Special Policy" in relation to cumulative impact in five areas of the city where the number, type and density of licensed premises are unusual and serious problems of nuisance and disorder may be arising or have been shown to arise at licensed premises, outside licensed premises or otherwise connected with such premises." "Responsible authorities and interested parties must note that the Licensing Authority will give effect to this Cumulative Impact Special Policy in respect of any application for premises within the areas *only* if a relevant representation is received. It is for any person making such representations to provide evidence to the Licensing Authority that the addition of the premises concerned would cause the cumulative impact claimed." "Applications for new premises licences or material variations that are likely

	to add to the existing cumulative impact, will be refused following relevant representations, except in exceptional circumstances." "Where …an application would normally be refused following relevant representations, unless the applicant can demonstrate why the operation of the premises involved will not add to the cumulative impact already being experienced, the onus will be on the applicant to show that there will be no negative cumulative impact."
Manchester City Council Statement of Licensing Policy 2011-2014	"The cumulative impact on the promotion of the Licensing Objectives of a concentration of licensed premises by number, type or density in a particular area is a matter that the licensing authority will consider and, where there is good evidence that crime and disorder or public nuisance are happening and are caused by customers of licensed premises located in such an area, consideration will be given to adopting a special policy to help address such issues." "The effect of the special policy is that the Council will refuse applications for a new Premises Licence or club Premises Certificate, or variation of an existing licence or certificate, whenever it receives relevant representation, unless an applicant can demonstrate why the operation of the premises involved will not add to the cumulative impact already being experienced." "Before the Council can lawfully consider giving effect to its special policy a relevant representation must have been made…"

Table 6: Licence density provisions in the Edinburgh Licensing Board Policy Statement 2010-2013

Overprovision: According to section 7 of the Act, the Board is required to include a statement on the extent to which it considers there to be overprovision of licensed premises (generally or of a particular type) in any locality. Following consideration of representations received, the Board has determined that several main thoroughfares are overprovided with traditional pubs and premises offering off-sales. In this locality there is a presumption against the grant of any further licences of this description, although all applications continued to be considered on their own merits. The Board is willing to consider applications for restaurants, hotels and other premises which would not increase the problems deriving from the current high concentration of licensed premises in the locality and which will either fill gaps in existing service provision or will significantly enhance amenity for residents and visitors. The Board will consider carefully the fine detail of any licence application or variation that would have the effect of increasing the present off-sales capacity within the area. The Board may call for further reports to assist in its determination of any off-licence applications or variations, and may expect applicants to participate in Community Alcohol Partnerships. Unless there are strong counter indications, any such application or variation will be viewed as likely to be inconsistent with the licensing objectives. The Board is particularly concerned about large drinking establishments that are used primarily for the sale and consumption of alcohol, and provide little or no seating for patrons. The Board defines these premises as those with a capacity for 200 or more patrons, whether seated or standing at any particular time. The Board considers that disturbance arising from the density of licensed premises is likely to be increased by large premises. Each application/variation will be considered on its merits but the Board will consider very carefully the type, size and capacity of licensed premises relative to the particular locality.

Table 7: Licence density provisions in Victoria's Liquor Control Reform Act 1998 (last updated 13 February 2013)

Provision	**Details of mechanism**
Amenity	Objection on ground of amenity: Any person may object to the grant, variation or relocation of a licence on the ground that the grant, variation or relocation would detract from or be detrimental to the amenity of the area in which the licensed premises or proposed licensed premises are situated. Factors that may be taken into account in determining whether the grant, variation or relocation of a licence would detract from or be detrimental to the amenity of an area include— (a) the presence or absence of parking facilities; (b) traffic movement and density; (c) noise levels; (d) the possibility of nuisance or vandalism; (e) the harmony and coherence of the environment; (f) any other prescribed matters.
Compliance with planning scheme	It is a condition of every licence and BYO permit that the use of the licensed premises does not contravene the planning scheme that applies to the licensed premises under the Planning and Environment Act 1987.

Table 8: Restrictions contained in the temporary freeze on licences in the NSW Liquor Act 2007 (last updated 11 January 2013)

During the freeze period, the following types of licences must not be granted for subject premises: (a) hotel licence, (b) club licence, (c) on-premises licence that relates to a public entertainment venue, (d) packaged liquor licence, (e) producer/wholesaler licence. During the freeze period, the Authority must not grant an on-premises licence for subject premises if the Authority is satisfied that the granting of the licence is likely to result in: (a) an increase in the number of persons who enter the freeze precinct in which the premises are situated principally to consume alcohol, or (b) an increase in the patron capacity of the premises. During the freeze period: (a) an extended trading authorisation must not be granted in relation to subject premises, and

(b) an extended trading authorisation applying to subject premises must not be varied so as to increase the trading hours of the premises

Since December 2012, none of the freeze restrictions apply to small venues in any of the freeze precincts. Small venues have a capacity of 60 people or fewer with no gaming machines or takeaway sales. They must also not be a public entertainment venue or trade after 2am.

Appendix 3: Review of evidence for the policy issue: outlet trading hours

Table 9: Summary of recent studies investigating the relationship between alcohol outlet trading hours and alcohol-related harms, published in academic journals and professional reports*

*reports that have not been subject to peer review are indicated with an asterisk in the 'study' column

Study	Focus of study	Setting	Key findings
Briscoe and Donnelly, 2001*	Examines patterns of alcohol-related crime in police records over a year, including the number of assault, offensive behaviour and malicious property damage incidents. Data is analysed to identify where and when alcohol-related crime is most likely to occur.	New South Wales	Assaults and offensive behaviour incidents are highly concentrated in time – the top ten three-hour periods over the week account for 32% of all recorded assaults and 44% of all recorded offensive behaviour. Assaults, offensive behaviour and malicious damage to property incidents were most frequently reported to occur: • between midnight and 3.00 am on Saturday and Sunday mornings • and between 9.00 pm and midnight on Friday and Saturday nights. These peak times for alcohol-related incidents closely correspond with the closing times of hotels and clubs.
Briscoe and Donnelly, 2003	This study examines the spatial and temporal distribution of harmful outcomes across licensed premises in three inner-urban areas of NSW. Police-recorded assault incidents on licensed premises were analyzed over a 2-year period in inner Sydney, Newcastle and Wollongong.	New South Wales	In all three areas, a small proportion (<15%) of licensed premises hotels and nightclubs accounted for the majority of all on-premise assaults. Licence types identified as being the most problematic for violence on licensed premises were hotels and nightclubs. Assault incidents on licensed premises were concentrated late at night or early in the morning and on weekends. In particular, hotels with extended or 24-h trading recorded a greater number of assaults compared with those trading standard hours. Of all assaults on licensed premises in inner Sydney, 56% were reported to occur between 12 am–3 am and 3 am–6 am.

Chisholm et al., 2004	Models the cost effectiveness of strategies for reducing hazardous alcohol use, including restricted hours of sale. Used primary data from several Scandinavian studies. Cost effectiveness was modelled for different world regions based on their socio-economic parameters.	Western Pacific region	Reduced hours of sale among retail outlets resulted in: • a modest reduction of 1.5%-3.0% in the incidence of hazardous drinking • a reduction of 1.5%-4.0% in the incidence of alcohol-related traffic fatalities. For the Western Pacific region (Australia etc), this translated to: • an intervention cost of $0.25million/1m population p.a. • an intervention effect of 68 DALYs/1m population p.a. • average cost effectiveness ratio of $3,672/DALY (a high cost per DALY).
Chikritzhs and Stockwell, 2002	Examined the effect of a 1 – 2 hours closing time extension after midnight on police reported assaults and volumes of alcohol sales attributable to individual licensed premises in Perth. Assaults associated with premises trading with standard hours were used as a control, to identify whether late trading resulted in additional assaults.	Perth, Western Australia	There was a significant increase in monthly assault rates for hotels with late trading following the introduction of extended trading permits. Monthly assault rates doubled in extended hours premises and were not changed in control venues. The study also identified significant increases in volumes of high alcohol content beer, wine and distilled spirits purchased by late trading hotels. It is suggested that greater numbers of patrons and increased levels of intoxication contributed to the observed increase in violence.
Chikritzhs and Stockwell, 2006	Examined the impact of later trading hours (extended trading permits – ETPs) for licensed hotels on levels of impaired driver road crashes and breath alcohol levels using police data.	Perth, Western Australia	Regression analyses of time series data showed a significant increase in monthly crash rates for hotels with an ETP. After adjusting for crash trends associated with non-ETP hotels and the introduction of booze-buses to freeways, the mean crash rate for ETP hotels increased by ~47.0% compared with the pre-ETP introduction period. This relationship was largely accounted for by higher volumes of high-alcohol content beer, wine and spirits purchased by ETP hotels. There were strong, significant correlations between wholesale alcohol purchases made by hotels and the impaired driver

			road crash rates. No relation was found between driver breath alcohol levels and the introduction of extended trading hours.
Chikritzhs and Stockwell, 2007	Examined the effect of a 1 – 2-hour closing time extension after midnight on positive driver breath alcohol levels (BALs) among patrons of late trading premises by time of day, age and gender. Driver breath alcohol levels among patrons of normally trading premises were used as controls.	Perth, Western Australia	Extensions of hotel closing hours influence average BALs among some patrons and that the outcome varies by time of day, age and gender. Males aged 18–25 years, who were apprehended between 12.01am - 2.00am and last drank at a hotel with active extended trading hours, had significantly higher BALs than patrons of non-ETP hotels.
Douglas, 1998	The effect of trading hour restrictions on longitudinal patterns of alcohol consumption, incidence of crime and hospitalisation in a small town.	Halls Creek, Western Australia	Adult per capita consumption of alcohol in Halls Creek declined from 16.59L pre-intervention to 15.35L in year one of the restrictions and 15.76L in year two. State consumption steadily increased over this time. Total criminal charges remained static in year one, then declined by 18% in year two compared to pre-intervention. Alcohol-related presentations to the hospital and presentations resulting from domestic violence decreased relative to the equivalent quarterly period prior to the intervention. Emergency evacuations as a result of injury showed a marked decrease in the two years following the intervention.
Duailibi et al., 2007	Examined the relationship between the introduction of a policy which prohibited on-premises alcohol sales in bars after 11 PM and the incidence of homicides and violence against women.	Diadema, Brazil	Per capita crime rates for the pre-policy period were compared with the 3-year period following the introduction of the policy: • The study found a 44% decrease in homicides (i.e. 319 homicides) during the first 3 years of the policy, while controlling for both previous enforcement changes and linear time trends • Assaults against women decreased by 56% in the 3 years following the intervention, but this effect was not significant in models that controlled for underlying time trends.

McMillan and Lapham, 2006	Examined the relative risk of alcohol-related motor-vehicle accidents and fatalities after New Mexico lifted its ban on Sunday packaged alcohol sales. Time series data on alcohol-related crashes (ARC) and ARC fatalities were modeled to detect trends, seasonal components, and differences between the pre- and post-intervention periods.	New Mexico	The study found a 29% increase in alcohol-related crashes on Sundays after the ban on Sunday packaged alcohol sales was lifted. No other day of the week showed a significant change in the relative alcohol-related crash risk. Alcohol-related crash fatality rates on Sunday increased by 42% after the ban on Sunday packaged alcohol sales was lifted. Sunday was the only day of the week on which a statistically significant change in alcohol-related crash fatality rates occurred after adjustment for trend, seasonal, and holiday effects. These increases translated to an excess of 543.1 alcohol-related crashes and 41.6 ARC fatalities on Sundays in the 5 years after the ban was lifted.
McMillan et al., 2007	Measured county-level variability in changes in alcohol-related crash (ARC) rates following the legalization of Sunday packaged alcohol sales. Bayesian hierarchical binomial regression models were used to examine spatial patterns in changes to the ARC rate, while adjusting for county socio-demographic characteristics, spatial patterns in crash rates and temporal trends in ARC rates.	New Mexico	Results show marked variability in the impact of legalized Sunday packaged AS on ARC rates across counties. Relative risks of an ARC for the post-repeal versus pre-repeal period vary across counties, from 1.04 to 1.90. Counties with an older population suffered a greater negative impact of legalized Sunday packaged alcohol sales. Counties with communities that quickly passed the local option to re-ban packaged sales on Sundays were able to mitigate most of the deleterious impact that increased alcohol availability had across the state.
Newton et al., 2007	Measured the impact of new licensing laws, which permit 24h alcohol trading, by assessing any changes in overnight attendances at the emergency department. Attendances for March 2005 (prior to the new licensing laws) were compared with those in March 2006 (after the	St Thomas' Hospital, London	Significant increases were reported for all alcohol-related attendance outcome measures: • of the overnight attendances in March 2005, 2.9% were classified as alcohol-related, while in March 2006, 8.0% were classified as alcohol-related • the proportion of alcohol-related assaults resulting in overnight hospitalization went from 0.99% of all overnight attendances in 2005 to 1.98% in 2006

	introduction of the new licensing laws). All people over 16 years who attended the emergency department between 21:00 and 09:00 during the two study periods were included. All patients were examined to determine the extent to which their attendances were related to alcohol intoxication.		• alcohol-related injuries increased from 1.61% in 2005 to 4.11% in 2006 • alcohol-related hospital admissions went from 0.88% in 2005 to 2.46% in 2006.
Palk et al., 2007	Investigated the occurrence, crime characteristics, and resource impact of alcohol-related incidents on first response police officers.	Queensland	Overall, the data indicate that approximately 25% of all incidents attended by police were alcohol-related, with specific incident types recording higher percentages. A statistically greater number of alcohol-related incidents occur on the weekend compared to the weekdays. The distribution of alcohol-related incidents across a 24-hour period indicates that the period from midnight to 4am is the busiest for police; almost 50 percent of police work is alcohol-related between midnight and 4am. Alcohol-related incidents after 10pm are most frequent on Friday and Saturday nights compared with other days for the same period.
Ragnarsdóttir et al., 2002*	Assessed the consequences of an experiment with unrestricted serving-hours for alcohol in bars and restaurants. The consequences were evaluated in terms of crowds gathering in streets and bars in the city center, the workload of the police and the workload of professionals at the emergency ward during weekend-nights. Data included statistics from police reports and the emergency ward; a survey of barkeepers; interviews with representatives for residents and professionals; and two field visits.	Reykjavik, Iceland	The number of calls or work-tasks of the police in the city center rose in number from 251 in 1999 to 286 in 2000 (14%). In comparison, the number of police work-tasks in the whole town rose 6%, from 573 cases in 1999 to 610 in 2000. The total number of cases admitted to ER during the weekend-nights increased by 31% in 2000 compared with 1999. The total number of all admitted cases in March and April, regardless of the time of day, was only 3% greater than the previous year. The number of cases admitted to ER on Saturdays and Sundays rose by 20% but decreased by 2% during other weekdays.

	Data from eight weekend nights in March and April 1999 were compared with eight weekend nights in March and April 2000.		The numbers of cases of suspected drunk driving increased by 80% from 29 in 1999 to 52 in 2000.
Vingilis et al., 2006	Examined effect of extending closing hours from 0100 to 0200 on alcohol-related road traffic casualties, compared with an external control area (Detroit, USA). Also investigated potential cross-border effects in the neighbouring Detroit region.	Windsor, Ontario	In the Windsor region, a significant increase was found for alcohol-related motor vehicle casualties after the drinking hours were extended, compared with no change in casualties for the total Ontario region. The Detroit region showed a statistically significant decrease in alcohol-related motor vehicle casualties concomitant with Ontario's drinking hour extension. A significant decrease was found for injury collisions involving vehicles with Ontario licence plates in the Detroit region. These results suggest a reduction in the number of patrons who cross the border when Ontario's bars and restaurants close.
Vingilis et al., 2008	Examined the effect of extending alcohol sales by 1 hour on two cities in Ontario. Police services data on monthly impaired driving and assault offences between 11pm-4am on each day of the week were compared for the 4 years pre- and 3 years post- policy change.	Windsor and London, Ontario	London and Windsor exhibited significant overall reductions in impaired driving charges aggregated over the 11pm–4am time period after the drinking hours were extended. London showed significant decreases in impaired driving charges for the 1–2am time periods and a significant increase for the Sunday–Wednesday 3–4am time period. Windsor demonstrated significant decreases in impaired driving charges for 1–2am time periods and significant increases for 2–3am and Sunday–Wednesday 3–4am periods. The authors note that impaired driving charges may have decreased for reasons other than the alcohol hours policy, including changes in driver licensing laws. For assault charges, no overall pre–post differences were found for the aggregated 11pm–4am time period for either city. A significant decrease in assault charges was found in London for Thursday–Saturday 1–2am, with significant increases for Sunday–Wednesday 2–3am and Thursday–Saturday 3–4am

			time periods. In Windsor, no significant decreases in assault charges were found, and one significant increase occurred during the Thursday–Saturday 2–3am period. Overall, the results suggested a temporal shift in alcohol-related harm peaks from after 1am to peaking after 2am.

Appendix 4: Overseas policy mechanisms: trading hours

Table 10: Trading hour provisions in UK local councils' licensing policies

Council, policy	Provisions relating to trading hours
City of London Statement of Licensing Policy, 2013	"The City Corporation… considers that the risk of disturbance to local residents is greater when licensable activities continue late at night and into the early hours of the morning… Residents have a reasonable expectation that their sleep will not be unduly disturbed between the hours of 23.00 and 07:00." "It is therefore the policy of the City Corporation to strike a fair balance between the benefits to a community of a licensed venue, and the risk of disturbance to local residents and workers. Notwithstanding that all applications will be determined on their merits." Variable closing times policy: "In areas containing a number of licensed premises, the policy of the City Corporation will be to encourage licensees to vary their closing times so that patrons leave for natural reasons over a longer period."
London Borough of Lewisham Licensing Policy 2010	"Any decision not to allow sales of alcohol at particular times will be based on evidence of the need to prevent crime, disorder, public nuisance or the protection of children from harm and public safety." "Stricter conditions however are likely to apply where the premises are situated in areas where there is potential for nuisance or disturbance to be caused to residents so as to minimise disturbance to local residents. "Section 55 of the Crime and Security Act 2010 amends section 172 of the Act to allow Licensing Authorities to make 'early morning alcohol restriction orders'. An order made under this section would effectively override any premises licence... that authorises the sale or supply of alcohol between 3am and 6am." "Limitations on operating hours may be imposed as appropriate, for example, following police and/or local resident representations in the case of isolated premises known to be a focus of disorder, disturbance or for people engaging in anti-social behaviour..."
Newcastle City Council Statement of Licensing Policy 2011-2013	"The Licensing Authority will normally consider that an earlier closing time for a licensed premises is appropriate in a predominantly residential areas, while a later closing time may be permitted for premises located in predominantly commercial areas, where customers can readily disperse by means of public transport and taxis, and the operating schedule submitted with the application deals suitably with the licensing objective of preventing public nuisance." "The Licensing Authority believes that when preparing operating schedules there is merit in applicants giving consideration to the

	principle of "winding down periods" at the end of the night…" "…subject to receiving relevant representations, restricted licensing hours may be appropriate in cases where licensed premises are situated in the vicinity of residential dwellings or where the trading hours of the premises and competing businesses in the vicinity are likely to lead to additional public nuisance, disorder and anti-social behaviour and where licensed premises include outside areas…"
Manchester City Council Statement of Licensing Policy 2011-2014	Sets out a number of Key Factors, which are primary issues that should be considered by licensees. "Failure to do this may increase the possibility of representations being made against applications, particularly by Responsible Authorities." Key Factor 3: Hours for licensed premises. "The licensing authority will have particular regard to the hours applied for and considers that later hours will typically be more sensitive and higher risk in causing problems, especially related to drunkenness and particularly after midnight. Consequently, the licensing authority expects a higher level of control measures to be implemented at the premises when later hours are applied for." "The Authority will have particular consideration to the location of premises and their likely effect on the locality for such applications in relation to appropriate hours…" "The licensing authority considers it more appropriate that terminal hours will normally be earlier for licensed premises located in areas with a higher density of residential property, particularly those outside the city centre, than those within the city centre due to the developed infrastructure in respect of managing a later night-time economy…"

Table 11: Trading hour provisions in the Edinburgh Licensing Board Policy Statement 2010-2013

Provision	**Details of mechanism**
Off-sales premises	Licensing (Scotland) Act 2005: 10am and 10pm each day. There is no discretion to permit licensed hours outside of these times. In some circumstances, the permitted terminal hour of 10pm should be restricted. "The Board… will consider most carefully whether late opening hours are justified." "Each case will be taken on its merits, considering all the licensing objectives, in particular those relating to crime, children, public health and public nuisance."
On-sales premises	The Board has noted the Guidance that in considering applications for licensed hours Boards may wish to consider applications for up to 14 hours as being reasonable but local circumstances and views

	of local licensing forums should always be considered. Opening hour: - Monday-Saturday –9am - Sunday –12.30pm Terminal hour (every day): - Licensed premises offering restaurant facilities and/or entertainment (except adult entertainment) – 3am - Members' clubs – 3am - Premises licensed for casino operation – 6am - All other on-sales premises – 1am When preparing operating plans applicants should give consideration to the principle of winding down periods at the end of the night, by gradually increasing the lighting and winding down entertainment such as loud music before the end of the permitted hours. Restricted licensing hours may be appropriate in cases where licensed premises are situated in the vicinity of residential property or where the trading hours of the premises and competing businesses are likely to lead to undue pressure on public transport systems or additional public nuisance, disorder or anti social behaviour and where licensed premises include external areas. The Board may impose different restrictions on hours for different licensable activities and for different days of the week. Where no relevant representations are received from either a responsible body or any interested party and there is no departure from the Board's adopted policies, the Board will consider granting an application in accordance with the terms of the operating plan.
Extended hours applications	Extended hours applications allow for an extension of licensed hours and operate only for a period of up to one month. The Board may make a determination to extend licensed hours to enable premises to remain open longer for certain special occasions or large public events.

Table 12: Trading hour provisions in Queensland's Liquor Act 1992 (last updated 1 January 2013)

Provision	**Details of mechanism**
Licence types	Commercial hotel, commercial special facility, commercial other (including subsidiary on-premises, subsidiary off-premises, bar, industrial canteen and producer/wholesaler licences). Community club, community other.
Ordinary trading hours	The ordinary trading hours of licensed premises are between 10am

	and 12 midnight. Exceptions: (a) Ordinary trading hours of an airport or casino are between 5am and 12 midnight. (b) Ordinary trading hours of premises to which a commercial hotel licence, community club licence or commercial special facility licence relates, for the sale of takeaway liquor, are between 10am and 10pm (c) Ordinary trading hours of a producer/wholesaler are the trading hours of the premises under the *Trading (Allowable Hours) Act 1990*. (d) Industrial canteen licences. The commissioner can order that the ordinary trading hours of specified licensed premises be reduced on specific days or times.
Extended trading hours approval	Licensees may apply to the commissioner for an extended trading hours approval for a new or existing licensed premises. For all licences (other than a 'community other' licence), an application may be made to extend trading hours to include trading between: (a) 12am and 5am (b) 9am and 10am For commercial hotel, community club or commercial special facility licences, an application may be made to extend trading hours for the sale of takeaway liquor to include trading between: (a) between 9am and 10am; or (b) between 10pm and midnight. The applicant must satisfy the commissioner that there is a demonstrated community need for the application to be granted.
Extended hours applications - moratorium	On 16 September 2009, the Government announced a moratorium on all applications for extended hours between 12 am and 5 am. The moratorium took effect immediately and was to be in place for 12 months pending the outcomes of the Law Justice and Safety Committee inquiry into alcohol-related violence. The moratorium has now been extended to 31 December 2013.
Lockout provisions	Applies to licensed premises where the licensee is authorised to sell or supply liquor during the period from 3am - 6am It is a condition of the licence or permit that a patron must not be allowed to enter the premises at or after 3am during the trading period. Exceptions: this division does not apply to— (a) a casino under the *Casino Control Act 1982* (b) that part of licensed premises used principally for the residential accommodation of guests staying on the premises (c) licensed premises at an airport terminal.

Risk Assessed Management Plan (RAMP)	The purpose of a RAMP is to outline how the licensee will manage the premises in a manner that will minimise harm caused by alcohol abuse and misuse. The following applications must include a RAMP: (a) new licence applications (b) extended trading hours approvals (c) permanent variation of licence applications (d) permanent changes in licensed area (e) transfers of existing licence (f) restricted liquor permits. RAMPs must address: (a) Principal activity to be conducted on the premises (b) Hours of operation (c) Details of responsible service of alcohol initiatives (d) Details of participation in a liquor accord (e) Details of security (f) Provision of food (g) Staff training (h) How to mitigate outdoor or amplified entertainment
Community Impact Statement (CIS)	The CIS is a submission lodged with an application for a liquor licence. It shows how activities on the licensed premises will impact on the amenity of the community in which it is located. A CIS is required with the following applications: (a) new licence (except for community other) (b) variation of licence (c) extended trading hours approval on a regular basis to include trading between 12 midnight and 5:00am. Need to address: (a) existing and projected population trends (b) the number of persons residing in and passing through the locality and their expectations (c) the likely health and social impacts the application would have on the population (d) the likely magnitude, duration and probability of health/social impacts (e) the proximity to identified sub-communities within the locality of the proposed licensed premises or proposed premises to which the proposed permit is to relate - for example, schools and places of worship - and the likely impact on those sub-communities.

Table 13: Trading hour provisions in Victoria's Liquor Control Reform Act 1998 (last updated 13 February 2013)

Provision	Details of mechanism
Licence types	General licence, on-premises licence, restaurant and café licence, club licence, packaged liquor licence, late night licence, pre-retail licence, wine and beer producer's licence, limited licence, major event licence, BYO permit.
Ordinary trading hours	In relation to a general licence, late night (general) licence, on-premises licence, late night (on-premises) licence or restaurant and cafe licence: (a) 7 am - 11 pm on each day, other than Sunday (b) 10 am - 11 pm on Sunday In relation to a club licence: (a) any time on any day other than Sunday (b) 10 am - 11 pm on Sunday In relation to a packaged liquor licence or late night (packaged liquor) licence: (a) 9 am - 11 pm on each day, other than Sunday (b) 10 am - 11 pm on Sunday In relation to a wine and beer producer's licence: (a) 7 am - 11 pm on each day, other than Sunday (b) 10 am - 11 pm on Sunday Applicants may apply for additional trading hours according to the type of licence they hold.
Extended hours	it is a condition of every licence that authorises the supply of liquor outside ordinary trading hours that the licensee does not cause or permit undue detriment to the amenity of the area to arise out of or in connection with the use of the premises to which the licence relates during or immediately after the hours outside ordinary trading hours to which it relates.
30-minute period for consumption of liquor after hours	A licence that authorises the supply of liquor during any period for consumption on the licensed premises or on any authorised premises also authorises liquor so supplied to be consumed on those premises during the 30 minutes next after the expiration of that period.
Late hour entry declaration	The Commission, at its own initiative, may make a late hour entry declaration for an area or locality. A late hour entry declaration must specify: (a) the area or locality to which it applies; and (b) the licences or class of licences to which it applies; and (c) the hours during which it applies.

	Subject to any conditions specified in a late hour entry declaration, the licensee of licensed premises to which the declaration applies must not permit any patrons to enter or re-enter the premises during the hours during which the declaration applies.
Compliance with planning scheme	It is a condition of every licence and BYO permit that the use of the licensed premises does not contravene the planning scheme that applies to the licensed premises under the Planning and Environment Act 1987.

Table 14: Trading hours in the Melbourne Planning Scheme (22.22 Policy for licensed premises that require a planning permit)

Provision	**Details of mechanism**
Hours of operation	Capital City Zone and Docklands Zone: • Hours of operation of taverns, hotels and nightclubs should be limited to 1am • Outdoor areas, including smoking areas, rooftops and open courtyards, should not be occupied past 1am and in noise sensitive areas alcohol should not be consumed in those areas after 11pm. Residential 1 and 2 Zones: • Operating hours beyond normal business hours (9am – 6pm) for licensed premises in the Residential 1 Zone beyond will be discouraged. Mixed Use Zone: • Hours of operation of licensed premises should be limited to 11pm. Business Zones: • Hours of operation of licensed premises should be limited to: o 11pm if the licensed premise is within 30m of a residential zone; o 1am elsewhere. • Outdoor areas, including smoking areas, rooftops and open courtyards, should not be occupied past 1am and in noise sensitive areas alcohol should not be consumed in those areas after 11pm.
Extended trading authorisation	Licensed premises operating after 11pm are required to demonstrate how amenity impacts would be addressed, including the potential for cumulative impacts where there are existing late night venues in the locality. Applications to extend operating hours beyond the hours otherwise specified will only be supported where the further extension of hours will not unreasonably impact on the amenity of the surrounding area.

Table 15: Trading hour provisions in NSW's Liquor Act 2007 (last updated 11 January 2013)

Provision	Details of mechanism
Licence types	Hotel, club, on-premises, packaged liquor, producer/wholesaler, limited licence
Standard trading period	The standard trading period applies to hotels, registered clubs, on-premise licences, packaged liquor licences and the licensed premises of a wine or small-scale producer. (a) For any day of the week other than a Sunday: 5 am to midnight (b) For a Sunday: 10 am to 10 pm The trading hours for limited licences cannot include the time between 3am and 6am.
Extended trading authorisation	The Authority may grant an extended trading authorisation, specifying: (a) the extended trading hours during which the licensee is authorised to sell or supply liquor, and (b) the part of the licensed premises to which the authorisation applies. Extended trading authorisation for consumption *on premises: a*uthorises the sale or supply liquor, for consumption on the licensed premises, during any of the following periods: (a) hotel licence—midnight to 5 am on any day of the week (other than midnight Sunday), (b) club, on-premises and producer/wholesaler licences — midnight to 5am on any day of the week, (c) in any case—5 am to 10 am on a Sunday, (d) in any case—10 pm to midnight on a Sunday. Extended trading authorisation for *take-away* sales on Sundays: authorises the sale or supply liquor, for consumption away from the licensed premises, during the following periods: (a) 5 am to 10 am on a Sunday, (b) 10 pm to midnight on a Sunday. Extended trading hours will only be authorised if the Authority is satisfied that: (a) practices are in place that ensure that liquor is sold, supplied or served responsibly on the premises (b) the extended trading period will not result in frequent undue disturbance of the quiet and good order of the neighbourhood If the sale or supply of liquor after midnight on licensed premises is authorised at least once a week, the licensee is required to maintain an register of incidents that occur outside of the standard trading period.

Late hour entry declaration	The purpose of a late hour entry declaration is to prevent patrons entering licensed premises during late trading hours even though the premises are authorised to trade during that time. Late hour entry declarations must specify: (d) the area or locality to which it applies, and (e) the licensed premises or class of licences to which it applies, and (f) the times when it applies. Any licensed premises to which a late hour entry declaration applies must not permit patrons to enter or re-enter the licensed premises during the time the declaration applies.
Six-hour closure period	For liquor licences granted on or after 30 October 2008, or have an extended trading authorisation granted on or after that date, a daily 6-hour minimum continuous closure requirement also applies. A licence to which this section applies is subject to the condition that liquor must not be sold by retail on the licensed premises for a continuous period of 6 hours during each consecutive period of 24 hours.
Community Impact Statement (CIS)	The object of the CIS is to facilitate the consideration by the Authority of the impact that the granting of certain licences, authorisations or approvals will have on the local community. The CIS summarises the results of consultation between the applicant and the local community about any issues and concerns with a proposed application. The following applications must be accompanied by a CIS: (a) an application for a hotel, club or packaged liquor licence (b) an application for an extended trading authorisation in relation to a hotel, club or packaged liquor licence (c) an application for an extended trading authorisation in relation to an on-premises licence that will result in trading between 12am-5 am (d) an application for an extended trading authorisation in relation to (e) a producer/wholesaler licence that will result in trading between 12am-5 am Where a CIS is required, the Authority cannot grant a licence, authorisation or approval unless it is satisfied that the overall social impact will not be detrimental to the well being of the local or broader community.

Table 16: Trading hour policies in the City of Sydney Late Night Trading Premises Development Control Plan 2007 (Amendment No. 2; 3.03.2011)

Policy	Details of mechanism
Premise types	Late night trading premises are categorized into one or more of the following types: (a) Category A Premises - High Impact (a hotel not designated as a general bar licence, a hotel designated as a general bar licence with capacity >120 patrons, a night club with capacity >120 patrons, a club, or a karaoke venue) (b) Category B Premises - Low Impact (premises with capacity <120 patrons, restaurants, cafes, theatres etc)
Area types	A hierarchy of three late night trading areas is described for the City of Sydney: (a) Late Night Management Areas: primarily include areas that are focal points for varied night-time social and recreational activity (b) City Living Areas: primarily include areas that are, at least in part, places with a distinct night-time entertainment character (c) Local Centre Areas: primarily include areas where a night-time entertainment character is evolving, and the area is considered to have the capacity for an increase in late night activity.
Trading hour considerations	Appropriate trading hours for night trading premises will be determined by taking into account a number of primary issues, including: (a) the location of the premises, including proximity to residential and other sensitive land uses and other late trading premises (b) the nature of the premises (e.g. pub, nightclub) and the proposed hours of operation (c) the existing hours of operation of surrounding business uses (d) the size and patron capacity of the premises (e) the impact of the premises on the mix, diversity and concentration of late night uses in the locality (f) the likely operation of the proposal during day time hours (g) submission of a plan of management that demonstrates a strong commitment to good management of operations, particularly in relation to managing potential impacts on surrounding land uses and premises (h) the diversity of retail services within an area and the impact of a late night proposal on this diversity; (i) measures to be used for ensuring safety, security and crime prevention both on the site of the premises and in the surrounding public domain (j) the accessibility and frequency of public transport during late night trading hours.
Plans of Management	Plans of Management are required to include information about the operational and contextual aspects of a premises (e.g. locality, numbers, noise emission, trading hours) and details about the actions that will be taken to ensure that premises will be responsibly managed (eg. crowd control procedures, noise minimisation, waste management). Plans of Management are required to accompany the following development applications for late night trading premises:

	(a) New Category A premises; (b) Existing Category A premises that seek a renewal or extension of existing approved trading hours; (c) Existing Category A premises that seek extensions, additions or refurbishment which will lead to an intensification of that use; (d) Existing category B premises that seek extensions, additions or refurbishment which will increase the patron capacity to >120 patrons; (e) Applications for outdoor trading on the same lot as a Category A and Category B premises. The operators of late night trading premises are required to review their Plan of Management following every trial period and make revisions necessary to maintain an level of amenity and safety in the vicinity of the premises which is at an acceptable community standard.
Trial periods	Approvals for late night trading premises or extended hours will be subject to a trial period to enable Council to assess the ongoing management performance of a premises and its impact on neighbourhood amenity. Category A and B premises seeking extended trading hours may be permitted up to two additional operating hours per trial period if a previous trial period is considered by the Council to have been satisfactory. Trial periods may be permitted up to the following durations: (a) First trial – 1 year (b) Second trial – 2 years (c) Third and subsequent trials – 5 years Once the full range of extended trading hours are reached, an application must be lodged every 5 years to renew trading hours. A renewal or extension of trading hours may only be permitted if Council is satisfied that a late night trading premises has demonstrated good management performance following the completion of a satisfactory trial period. If the Council determines that a trial period has been unsatisfactory then trading hours will revert to the base hours.

Table 17. Trading hours in the City of Sydney Development Control Plan – Late Night Trading Premises Development Control Plan 2007

	CATEGORY A PREMISES		CATEGORY B PREMISES	
	Indoor Trading Hours	Outdoor Trading Hours	Indoor Trading Hours	Outdoor Trading Hours
LATE NIGHT MANAGEMENT	Base – 6am to Midnight Extended – 24 hours	Base – 10am to 10pm Extended – 10am to 1am	Base – 6am to 2am the following day Extended – 24 hours	Base – 8am to 10pm Extended – 8am to 1am
CITY LIVING	Base – 7am to 11pm Extended – 7am to 5am the following day	Base – 10am to 8pm Extended – 10am to midnight	Base – 7am to 1am the following day Extended – 7am to 5am the following day	Base – 9am to 8pm Extended – 9am to midnight
LOCAL CENTRE	Base – 10am to 10pm Extended – 10am to midnight	Base – 10am to 8pm Extended – 10am to 10pm	Base – 8am to 11pm Extended – 8am to midnight	Base – 10am to 8pm Extended – 10am to 10pm
ALL OTHER CATEGORY A PREMISES	Base – 10am to 10pm Extended – 10am to Midnight	Base – 10am to 8pm Extended – 10am to 10pm		

Appendix 5: Evaluations of the effectiveness of trading hour policies

Table 18: Studies evaluating the effectiveness of Australian and UK policies on the opening hours of licensed premises

Paper	Policy evaluated	Details of mechanism	Findings on effectiveness
Foster et al., 2009	UK Licensing Act 2003	Deregulation of fixed trading hours, introduction of cumulative impact areas	Reports on a nationwide survey of 225 (63%) chairs/senior members of local licensing authorities in England: • 17% of local authorities had a cumulative impact (saturation) area, the majority of which were in urban areas • extended hours applications were more common than new applications in both on- and off–licensed premises. • the only variable perceived to increase by respondents was the number of licensed premises • the perception of those surveyed was of 'no change' in the following alcohol-related variables; public noise levels (59%) violence and fights (60%), under-aged drinking (67%), crime (68%), and drink-driving (86%).
Hough and Hunter, 2008	UK Licensing Act 2003	Replaced statutory licensing hours with opening hours set locally through the conditions of individual licences	Summarizes the results of a Home Office evaluation, including a survey of police, review of accident and emergency statistics and a community survey. Identifies the impact of changes to the licensing laws on crime and disorder in their first year: • implemented changes to licensing hours were variable but modest, with half of on-licensed premises continuing to close at 11pm and the majority of the remainder extending their opening by half an hour or an hour • a minority of premises requested 24 hour licences • extensions to opening hours primarily occurred on weekends, with some premises closing earlier on weekdays

			• most respondents reported no great increase in trade or profits as a result of extended opening hours • changes in drinking patterns were observed, with customers arriving later and leaving in a more gradual process • self-reported alcohol consumption indicates a 6% decrease in the average units of alcohol consumed per week • little evidence of behavioural change, with >80% of respondents reporting no change in their drinking patterns • there were minor, variable changes in violent crime and disorder according to a range of measures, including crime statistics, victim surveys and medical statistics • there appears to have been some temporal displacement of offences, pushing a small proportion of offences forward into the early morning.
Humphreys and Eisner, 2010	UK Licensing Act 2003	Deregulation of fixed trading hours – intended to remove stagger closing times across regions.	Compared the opening and closing times for the two year period prior to the Act's implementation with the two year period post-implementation: • 78% of the sample premises extended their trading hours post implementation, while 19% maintained and 4% reduced their trading hours • Total trading hours increased to an average weekly duration of 99.3 hours • Peaks in the number of premises closing at the same time decreased by approximately 50% • Peak closing times occurred an hour later than pre-implementation • 14-20% of premise clusters failed to stagger closing times between premises in the cluster • 6-7% of bars were involved in an increased concentration of closing times post-implementation • 53-72% of clusters failed to remove large peaks in closing times within the cluster of premises

			Overall, the findings suggest that while staggering was achieved in most clusters, the magnitude of these changes was relatively modest. Peaks in closing times were diluted but not removed.
Newton et al., 2007	UK Licensing Act 2003	Deregulation of fixed trading hours - which permit 24h alcohol trading	Compared overnight, alcohol-related attendances at the emergency department in March 2005 (prior to the new licensing laws) with those in March 2006 (post-introduction). Significant increases were reported for all alcohol-related attendance outcome measures: • Of the overnight attendances in 2005, 2.9% were classified as alcohol-related, while in 2006, 8.0% were classified as alcohol-related • the proportion of alcohol-related assaults resulting in overnight hospitalization went from 0.99% of all overnight attendances in 2005 to 1.98% in 2006 • alcohol-related injuries increased from 1.61% in 2005 to 4.11% in 2006 • alcohol-related hospital admissions went from 0.88% in 2005 to 2.46% in 2006.
Peirce and Boyle, 2011	UK Licensing Act 2003	Deregulation of fixed trading hours – intended to remove stagger closing times across regions.	Examined the number and demography of assaults presenting to a Cambridgeshire emergency department between 2001 and 2009. The study found that, following the implementation of the Licensing Act: • the number of assaults presenting at the hospital increased from a mean of 1083 assaults annually to a mean of 1216 • There was a statistically significant trend towards increasing assaults • There was a significant decrease in the number of female assault victims • the peak time of presentation shifted from 1–2am to between 1-4am • There was a statistically significant increase in the number of

			assaults presenting at the weekend There was no significant change in ambulance usage.
Humphreys and Eisner, 2012	UK Licensing Act 2003	Deregulation of fixed trading hours – intended to remove stagger closing times across regions.	Examined police data on violent incidents and licensing authority data on licensed premises trading hours to identify trends in Manchester during 2004-2008: • there was significant variability in the implementation of trading hours under the new regulations • 67% of premises extended trading hours, 16% did not change, and 3% restricted trading hours • only one premise acquired a 24 hour liquor licence • analysis of total violence showed no evidence of any immediate, temporary, or delayed intervention effects • analysis of violence at different times of the day showed a significant 36% increase in weekend violence between 3-6am.
Plant and Plant, 2005	Ireland, Intoxicating Liquor Act 2000	Later closing hours – Monday- Wednesday: 11.30pm Thursday-Saturday: 12.30am Sunday: 11pm + 30 min 'drinking-up' time. Clubs were allowed special exemptions until 2.30 a.m + 30m drinking up period.	Summarised evidence on the negative consequences of extended trading hours in Ireland: • binge-drinking increased, especially among under-age drinkers • an increase in A and E attendances, between and quarter and a third of which were alcohol-related • the Commission on Liquor Licensing noted a perceived increase in disorder, drunkenness, vandalism and injury after the extension of trading hours among the public • police reported a significant increase in alcohol-related and public order offences between 2000 and 2001 • the number of alcohol-related offences involving juveniles rose from 12.4% to 17% • club-operators reported that the decreased margin of time between pub-closing and club-closing was damaging profit

			• in 2003 a new Intoxicating Liquor Act was introduced to combat problems created by the Act of 2000.
Hahn et al., 2010	Reviewed studies from Australia, London, Iceland and Scotland on the effectiveness of limiting or maintaining existing limits on the hours of sale	1. Events that resulted in a change of >2 hours of sale. 2. Events that resulted in a change of <2 hours of sale.	Among the ten studies six events that resulted in a change of >2 hours in alcohol sales hours: • two studies found that an increase of >2 hours in the hours of sale led to decreased alcohol-related harms • six studies found an increase in alcohol-related harms relative to the period before the increase in hours of sale took place • two studies found no significant effect • these studies provide sufficient evidence to conclude that increasing hours of sale by 2 or more hours increases alcohol-related harms. Among the six studies of five events that resulted in a change of <2 hours of sale: • One study reported substantial increases in wholesale alcohol purchases, assaults and vehicle crashes • Two studies reported small and inconsistent changes in alcohol-related outcomes including consumption, mortality and motor vehicle crashes • Two studies reported small and inconsistent changes in alcohol sales and consumption • The evidence was insufficient to determine whether increasing hours of sale by <2 hours increases consumption and related harms.
Chikritzhs and Stockwell, 2002	Liquor Act 1988, Western Australia	1 – 2 hour extended trading permit	Examined the effect of extended closing times on police reported assaults and volumes of alcohol sales: • There was a significant increase in monthly assault rates for hotels with late trading following the introduction of extended trading permits • monthly assault rates doubled in extended hours premises and

			were not changed in control venues. • the study also identified significant increases in volumes of high alcohol content beer, wine and distilled spirits purchased by late trading hotels it is suggested that greater numbers of patrons and increased levels of intoxication contributed to the observed increase in violence.
Chikritzhs and Stockwell, 2006	Liquor Act 1988, Western Australia	1 – 2 hour extended trading permit	Examined the impact of extended trading permits (ETPs) on levels of impaired driver road crashes and breath alcohol levels: • regression analyses of time series data showed a significant increase in monthly crash rates for hotels with an ETP • after adjusting for crash trends associated with non-ETP hotels and the introduction of booze-buses to freeways, the mean crash rate for ETP hotels increased by ~47.0% compared with the pre-ETP introduction period • this relationship was largely accounted for by higher volumes of high-alcohol content beer, wine and spirits purchased by ETP hotels • there were strong, significant correlations between wholesale alcohol purchases made by hotels and the impaired driver road crash rates • no relation was found between driver breath alcohol levels and the introduction of extended trading hours.
Douglas, 1998	Liquor licence restrictions in Halls Creek, Western Australia (1992)	Trading hour restrictions for off-licence sales	Adult per capita consumption of alcohol in Halls Creek declined from 16.59L pre-intervention to 15.35L in year one of the restrictions and 15.76L in year two. State consumption steadily increased over this time. Total criminal charges remained static in year one, then declined by 18% in year two compared to pre-intervention. Alcohol-related presentations to the hospital and presentations resulting

			from domestic violence decreased relative to the equivalent quarterly period prior to the intervention. Emergency evacuations as a result of injury showed a marked decrease in the two years following the intervention.
Jones et al., 2009	Newcastle, NSW	Restrictions on hotel trading hours: lockout from 1am bringing forward premise closing time to 3am cease sale of alcohol 30m before closing time	Used recorded crime data, last place of consumption data and police call-out data to examine changes in the incidence of assault: • a statistically significant reduction in alcohol-related assaults in the intervention site but not the comparison site • night-time assaults decreased by 1.7 assaults per month in the year following the introduction of restrictions • no evidence of any geographic displacement of assaults to other licensed premises or neighbouring areas • the proportion of assaults occurring after 3am decreased by 11% in the intervention site, but not in the comparison sites.
Kypri et al., 2011	Newcastle, NSW	Pub closing times restricted to 3:00 a.m., and later 3:30 a.m. in the CBD	Compared police recorded assaults in the CBD before and after the restriction with those in a neighbouring area of Hamilton: • recorded assaults fell from 99.0 per quarter before the restriction to 67.7 per quarter afterward • In the same periods in Hamilton, assault rates were 23.4 and 25.5 per quarter, respectively. This study indicates that a restriction in pub closing times produced a 37% reduction in assault incidence in comparison to a control locality.
Mazerolle et al., 2012	Two entertainment districts in Queensland	Lockout policy for nightclubs trading after 3am	Used monthly crime incident data from Queensland Police for the period 1996-2008: • lockout legislation led to a direct and significant reduction in the number of violent incidents inside licensed premises • introduction of the lockouts more than halved the average number of violent incidents in licensed premises per month for both

			districts • areas outside licensed premises accounted for approximately 80% of all violence in the two districts • violent crime offences outside licensed premises remained stable throughout the data series, with no evidence that the lockout had a discernable impact on violence on streets and footpaths outside licensed premises.
Palk et al., 2010	Queensland – Gold Coast City	Lockout policy for nightclubs trading after 3am	Compared police activity log data for 4 weeks before and 5 weeks after the introduction of the lockout policy: • 3.4% of incidents requiring police attendance were recorded in and around licensed premises, compared with 4.6% of incidents before the policy change • the number of alcohol-related incidents between 3 and 6 a.m. was significantly reduced by 12.3% following the lockout policy • no displacement of incidents to other time periods was observed • alcohol-related disturbances were reduced by 6.2%, street disturbances by 12.3%, and sexual offences by 33.7% • minimal changes in traffic offences were recorded (a slight increase of 0.8%) • non-significant reductions were evident for offences against the person (10.8%), property (0.8%), and stealing (1.7%).
Palk et al., 2012	Queensland – Gold Coast and Brisbane City/Fortitude Valley	3am lockout policy for nightclubs trading after 3am	Compared police activity log data for 4 weeks before and 4 weeks after the introduction of the lockout policy in each city: Gold Coast: • a significant difference in the number of alcohol-related incidents before and after the introduction of lockout for all time periods • significantly fewer alcohol-related incidents between 3 a.m. and 6 a.m. after the lockout was introduced • significantly fewer street/disturbances (12.3%) and sexual offences (33.7%) after the introduction of the lockout policy

			• disturbance/disputes involving alcohol were 19.2% less likely to occur between 12 a.m. to 3 a.m. after the introduction of the lockout • Traffic offences were more likely (4.5%) to occur after the introduction of the lockout. Brisbane City/Fortitude Valley: • No significant differences were found for alcohol-related incidents across all the time periods following the introduction of the lockout • no significant differences for alcohol-related incidents in the 3 a.m. and 6 a.m. time period after the introduction of the lockout legislative provision • the only major offence category to experience a significant change was personal trauma, with a 30% reduction in alcohol-related trauma offences after the lockout was introduced • significantly fewer traffic offences (12.9%) during the 3 a.m. to 6 a.m. time period following the introduction of the lockout • alcohol-related disturbances/disputes significantly decreased (29.0%) between 12 a.m. to 3 a.m., but significant increased (33.8%) between 3 a.m. to 6 a.m. Interviews were conducted with premise operators, state and local representatives, police and liquor licensing managers: • licensees stated that they were initially opposed to the lockout because they felt it would have a negative impact on revenue. • However, most licensees indicated that patron numbers and income remained largely unaffected by the lockout policy, and some noted that marketing strategies coupled with the lockout policy improved patron numbers and income revenue • Licensees indicated that most violence occurred on the street; some believed that the level of violence on the streets had been curbed by the lockout whereas others felt the lockout had no impact • Police officers generally reported that it was much quieter on the streets during the lockout policy

			• A main disadvantage identified was the possibility that the lockout policy created two rush hours that led to overcrowding at entry points to licensed premises and long waiting lines for taxis.
Miller et al., 2012	City of Ballarat, Victoria	3:00 am 'lockout' policy (implemented since August 2003)	Compares alcohol-related emergency department presentations pre- and post-lockout intervention (1999-2009) in Ballarat with similar data from Geelong, Victoria (control site): • A decrease in ED attendance in Ballarat was noted over a 6-month period following the introduction of the lockout • After this decline, ED attendance rates in Ballarat steadily increased, surpassing Geelong by late 2005 • Both Ballarat and Geelong experienced a moderate-strong positive trend in ED presentations in the study period • A model of seasonal ED presentations showed that the lockout was not a significant predictor of ED presentation rates within Ballarat.
Centre for Health Research and Practice, 2004	Ballarat, Victoria	2:00am voluntary lockout (later changed to 3:00am), along with better street lighting in the precinct and increased policing.	Following the implementation of the measures there was: • a 39.85% decrease in assaults • a 47.54% decrease in the number of assaults in licensed premises • a 33.33% reduction in assaults in public places • a 17.32% decrease in property damage outside of licensed premises • a 25% increase in property damage to licensed premises.

Appendix 6: Review of evidence for the policy issue: location of licensed premises

Table 19. Relationship between socio-economic variables and outlet density, alcohol consumption and harms reported in the academic literature (2000-present)

Reference	Socio-economic variable*	Findings on relationship with alcohol outlet location, alcohol consumption or related harms
Connor et al., 2011	Age and gender	The prevalence of drinking above the guidelines, 'binge drinking' and alcohol-related harm scores were higher: • in men than in women • in younger age groups (highest for 18-20 year olds).
Day et al., 2012	Ethnicity, age, gender, population density, deprivation	Areas with the highest rates of violent offences: • Had the highest proportions of Māori population • Had the highest percentage of young males • Had the greatest population density • Were predominantly urban areas • Had the highest level of social deprivation.
Donnelly et al., 2006	Suburb type, deprivation	Bivariate relationships highlighted that some respondents experienced greater problems with drunkenness in their neighbourhood: • respondents living in non-urban area • respondents living in the most disadvantaged areas.
Freisthler et al., 2007	Household income, ethnicity	The positive relationship between off-premise outlet density and child maltreatment rates was affected by neighbourhood characteristics: • Medium household income was significantly negatively related to rates of child protection services referrals, substantiations and foster placements. • All three rates of child maltreatment were also related to the ethnic composition of the neighbourhood.

Gruenewald and Remer, 2006	Income, ethnicity	Increased assault rates (related to increases in the number of outlets) were most strongly related to: • lower median household incomes in the area • higher percentages of ethnic minorities in the area.
Huckle et al., 2008	Deprivation, ethnicity	Neighbourhood deprivation score (NZDEP) was correlated highly with outlet density Typical drinking occasion quantity was predicted by: • Ethnicity • NZDEP Annual frequency of drinking and drunkenness were also predicted by ethnicity. Maori and Pacific respondents drank more frequently and a greater quantity compared to Europeans, who drank more and more often than Asian respondents.
Kavanagh et al., 2011	Household socio-economic characteristics	Drinking at levels associated with harm was generally higher: • in households with no children • in blue-collar occupations than in professional occupations • in low-income households compared with high-income households • in younger age groups.
Kypri et al., 2008	Student demographics	Males drank more than females and experienced more alcohol-related problems Drinks per day, alcohol-related problems and secondary effects decreased with age Relative to students of NZ European ethnicity students of Chinese or other ethnicity drank less and experienced fewer harms There was no significant difference in drinking or harms between Maori and NZ European students.
Lascala et al., 2001	Population density	Population density is significantly positively related to rates of alcohol-related pedestrian collisions.
Livingston, 2008b	Suburb type	Identified that different types of suburbs experience different numbers of assaults, associated with different types of liquor outlets: • Inner city assaults were associated

		with general or hotel licences • Suburban assaults were associated with packaged liquor licences.
Romley et al., 2007	Ethnicity, income	The density of liquor stores is greater for: • areas with a dominantly black population • lower income areas • nonwhites in lower-income areas than among whites in lower- and higher-income areas and nonwhites in higher-income areas • non-white youths than white youths.
Weitzman et al., 2003	University campus	Outlet density was negatively related to distance from campus centres, with half of the outlets located within a 2 mile radius of the campus 'centre point'.
Zhu et al., 2004	Ethnicity, population density and poverty	In Austin: • total alcohol outlet density was positively correlated with poverty levels, ethnicity and population density. • violent crime was positively correlated with poverty levels, ethnicity and population density and outlet density • the strongest correlations were for outlet density and poverty, and violent crime and poverty.

*socio-economic variables that were reported to have a statistically significant relationship with outlet density, alcohol consumption or related harms.

Table 20: Studies on the relationship between exposure to alcohol advertising and youth

Study	**Focus**	**Key findings**
Connolly et al., 1994	Used a multi-year survey to examine the relationship between recall of alcohol advertising at ages 13 and 15 on subsequent alcohol consumption	For males, number of commercial advertisements recalled at age 15 predicted average and maximum amounts of beer consumed on an occasion. For females, the number of commercial advertisements recalled at age 13 predicted frequency of beer consumption.
Mastro and Atkin, 2002	Examined the relationship between themes on alcohol	The results did not support the hypothesis that high exposure to alcohol billboards would result in elevated perceptions of peer alcohol

	billboards surrounding a public high school in Chicago and the beliefs and social perceptions of drinking among high school students	consumption and perceptions regarding drinking. Brand exposure was found to be positively and significantly associated with approval of underage drinking. Acceptance of positive themes related to drinking was found to significantly and positively general acceptability of drinking and acceptance of underage drinking.
Collins et al., 2007	Surveyed exposure to beer advertising among 6th graders and its relationship to drinking intentions and behaviour in 7th grade.	Exposure to advertising from multiple sources at 6th grade was strongly predictive of 7th grade drinking and intentions to drink. Youth at high levels of overall advertising exposure were subsequently 50% more likely to drink and 36% more likely to intend to drink as those at low levels.
Pasch et al., 2007	Describes all outdoor alcohol advertisements surrounding schools and examines the association between exposure to alcohol advertising in sixth grade and youth alcohol use, intentions, norms, and attitudes in eighth grade.	On average, each school site had 14.8 advertisements within 500m of the school. Exposure to all types of outdoor alcohol advertisements in sixth grade was significantly associated with eighth-grade alcohol behaviours and intentions. Exposure to alcohol advertising around schools at the end of sixth grade was found to predict alcohol intentions at the end of eighth grade. This finding held true even for those students who were nonusers of alcohol in sixth grade.
Kwate et al., 2007	This study examined the spatial relationship between alcohol advertisement density and schools, churches and playgrounds in Central Harlem	Alcohol advertisements were densely distributed. Almost half alcohol advertisements fell within 152 m of schools and churches, while one quarter fell within 152m of playgrounds. Advertisement density was positively associated with retail liquor outlet density.
Kelly et al., 2008	Describes the volume and nature of outdoor food advertisements and factors associated with outdoor food advertising in the area surrounding Australian primary	Alcoholic beverages were the most frequently advertised food products in the area within a 250 m radius of primary schools. Alcoholic beverages comprised 22% of all food advertisements in the area surrounding primary schools. The density of alcohol advertisements was twice as high in the area within 250m of

	schools.	schools, compared with the area 250-500m from schools (25 vs. 13 per km^2).
(Anderson et al., 2009b	Reviewed 13 longitudinal studies to assess the impact of alcohol advertising on future adolescent alcohol use.	Twelve of the thirteen studies concluded that exposure to alcohol advertising and promotion was correlated with an impact on subsequent alcohol use, including initiation of drinking and heavier drinking amongst existing drinkers. The thirteenth study, which tested the impact of outdoor advertising placed near schools failed to detect an impact on alcohol use, but found an impact on intentions to use alcohol.

Appendix 7: Overseas policy mechanisms: location of licensed premises

Table 21: Location provisions in UK local council's statements of licensing policy

Council, policy	Provisions relating to outlet location
City of London Statement of Licensing Policy, 2013	"The City Corporation… considers that the risk of disturbance to local residents is greater when licensable activities continue late at night and into the early hours of the morning… Residents have a reasonable expectation that their sleep will not be unduly disturbed between the hours of 23.00 and 07:00." "It is therefore the policy of the City Corporation to strike a fair balance between the benefits to a community of a licensed venue, and the risk of disturbance to local residents and workers. Notwithstanding that all applications will be determined on their merits." When considering whether any licensed activity should be permitted, the City Corporation will assess the likelihood of it causing unacceptable adverse impact, particularly on local residents and businesses, by considering the following factors amongst other relevant matters: (a) the type of use (b) the proposed hours of operation (c) the means of access to and exit from the premises by patrons (d) the measures that are proposed to avoid nuisance being caused to residents and businesses in particular from outside smoking, drinking and eating in terms of noise, obstruction of the highway and anti-social behaviour.
London Borough of Lewisham Licensing Policy 2010	"Any decision not to allow sales of alcohol at particular times will be based on evidence of the need to prevent crime, disorder, public nuisance or the protection of children from harm and public safety." "Stricter conditions however are likely to apply where the premises are situated in areas where there is potential for nuisance or disturbance to be caused to residents so as to minimise disturbance to local residents. Cumulative Impact Policy: The effect of the CIP in respect of Blackheath Village and The New Cross Corridor is that the Council will refuse applications for a new premises licence or club premises certificate, or material variations of an existing licence or certificate, whenever it receives relevant representation unless an applicant can demonstrate why the operation of the premises involved will not add to the cumulative impact already being experienced.
Newcastle City Council Statement of Licensing Policy 2011-2013	"The Licensing Authority will normally consider that an earlier closing time for a licensed premises is appropriate in a predominantly residential areas, while a later closing time may be permitted for premises located in predominantly commercial areas,

	where customers can readily disperse by means of public transport and taxis, and the operating schedule submitted with the application deals suitably with the licensing objective of preventing public nuisance." "…subject to receiving relevant representations, restricted licensing hours may be appropriate in cases where licensed premises are situated in the vicinity of residential dwellings or where the trading hours of the premises and competing businesses in the vicinity are likely to lead to additional public nuisance, disorder and anti-social behaviour and where licensed premises include outside areas…" City Centre Special Stress Area: Within the City Centre two Special Stress Areas have been identified; these have been requested by Northumbria Police. In the areas where this special policy applies, applications for new premises licences or club premises certificates or material variations to existing premises will be dealt with according to a matrix. Applications for new premises licences or material variations that are likely to add to the existing cumulative impact, will be refused following relevant representations, except in exceptional circumstances. For certain applications, such as for a pub or takeaway in the City Centre Special Stress Area, the applicant would need to prove that there are exceptional circumstances persuading the Licensing Authority to depart from the Cumulative Impact Special Policy and not to refuse the application. Where the matrix indicates that an application would normally be refused following relevant representations, unless the applicant can demonstrate why the operation of the premises involved will not add to the cumulative impact already being experienced, the onus will be on the applicant to show that there will be no negative cumulative impact.
Manchester City Council Statement of Licensing Policy 2011-2014	The licensing authority considers the following as key issues in relation to the location of licensed premises: (a) The proposed operation of the premises having regard: i. to the licensable activities applied for, ii. the size and proposed capacity, iii. the type/nature of the business (b) The proximity of the premises to local residents. (c) The proximity of the premises to other local businesses that could be affected (d) The general character of the surrounding area including crime and antisocial behaviour levels (e) The availability of transport to and from the premises. "There is the need to balance the needs of residents with that of the night-time economy. Licensees should consider how their premises could impact upon the needs of local residents and

	businesses." "The Authority will have particular consideration to the location of premises and their likely effect on the locality for such applications in relation to appropriate hours…" "The licensing authority considers it more appropriate that terminal hours will normally be earlier for licensed premises located in areas with a higher density of residential property, particularly those outside the city centre, than those within the city centre due to the developed infrastructure in respect of managing a later night-time economy…" "Consideration should be given to the effective availability of transport in relation to the premises including the proximity of public transport … to ensure customers are able to get home safely and without causing disturbance." "Manchester City Council has implemented Designated Public Place Orders in several areas throughout Manchester in order to help address and prevent numerous problems caused by public consumption of alcohol." Cumulative impact and saturation policy: The effect of the special policy is that the Council will refuse applications for a new Premises Licence or club Premises Certificate, or variation of an existing licence or certificate, whenever it receives relevant representation, unless an applicant can demonstrate why the operation of the premises involved will not add to the cumulative impact already being experienced.

Table 22: Location provisions in the Edinburgh Licensing Board's policy statement

Consideration of applications by the Board: When considering whether any licence should be granted, the Board will assess the likelihood of the grant having an adverse impact. The Board will take into account relevant matters including : (a) the nature of the premises, activities to be carried on and whether amplified music will be played (b) the potential number and profile of the customers likely to attend the premises (c) the proposed hours of operation (d) whether children are to be admitted to the premises and the arrangements made for them (e) the means of access to the premises including the location and adequacy of customer entrances and exits (f) the level of public transport accessibility for customers either arriving or leaving the premises and the likely means of public or private transport that will be used by them (g) the likely level of car parking demand on principal roads and surrounding residential streets in comparison with the existing situation, its effect on local residents and on residential parking and emergency access Where it is possible to take steps to mitigate or prevent any potential impact the Board may still be able to grant a licence subject to conditions; each case will be considered on its merits.

Table 23: Location provisions in Queensland's Liquor Act 1992 (amended as of 1 Jan 2013)

Policy mechanism	**Provisions relating to outlet location**
Community Impact Statement (CIS)	The CIS is a submission lodged with an application for a liquor licence that shows how activities on the licensed premises will impact on the amenity of the community in which it is located. The purpose of a community impact statement is to help the commissioner assess the impact on the community concerned, having regard to the main purpose of the Act. The following applications must be accompanied by a CIS: (a) an application for a licence, other than a 'community other' licence (b) an application for a variation of the licence (c) an application for an extended trading hours approval A CIS must address the following: (a) the existing and projected population and demographic trends in the locality (b) the number of persons residing in and passing through the locality and their expectations (c) the likely health and social impacts the application would have on the population (d) the likely magnitude, duration and probability of health/social impacts (e) the proximity of the premises to identified sub-communities within the locality, including, for example, schools and places of worship, and the likely impact on those sub-communities. In preparing a community impact statement, the applicant must have regard to relevant guidelines issued by the commissioner.
Restricted areas	A regulation may declare an area to be a restricted area. This may be a community area, or part of a community area. The regulation must state the quantity of a type of liquor that a person may have in possession in the restricted area without a restricted area permit. In a restricted area, a person must not have in possession more than the prescribed quantity of a type of liquor for the area, other than under the authority of a restricted area permit. In recommending the regulation, the Minister must be satisfied the declaration is necessary to achieve the purpose of the Act.
Drink safe precincts	A regulation may prescribe an area to be a drink safe precinct. This area may include any or all of the following: (a) a single licensed premises; (b) multiple licensed premises; (c) an area in the vicinity of licensed premises or multiple licensed

	premises. In recommending the regulation, the Minister must be satisfied the declaration is necessary to achieve the purpose of the Act.
Liquor accord	Any 2 or more interested persons may be parties to a liquor accord for a locality in which licensed premises are situated. A liquor accord means an agreement, memorandum of understanding or other arrangement entered into for the purposes of— (a) promoting responsible practices in relation to the sale and supply of liquor at licensed premises situated in the locality; and (b) minimising harm caused by alcohol abuse and misuse and associated violence in the locality; and (c) minimising alcohol-related disturbances, or public disorder, in the locality.
Conditions of licences for Brisbane City Council area	Applies to licensed premises that are authorised to sell or supply liquor on the premises at any time after 1am in the area of the Brisbane City Council. Conditions of licences: (a) conditions about crowd controllers (b) conditions about closed-circuit television equipment (c) conditions about incident and training registers (d) conditions about drinking practices.

Table 24: Location provisions in Victoria's Liquor Control Reform Act 1998 (last updated 13 February 2013)

Provision	**Details of mechanism**
Licence types	General licence, on-premises licence, restaurant and café licence, club licence, packaged liquor licence, late night licence, pre-retail licence, wine and beer producer's licence, limited licence, major event licence, BYO permit.
Amenity	Objection on ground of amenity: Any person may object to the grant, variation or relocation of a licence on the ground that the grant, variation or relocation would detract from or be detrimental to the amenity of the area in which the licensed premises or proposed licensed premises are situated. Factors that may be taken into account in determining whether the grant, variation or relocation of a licence would detract from or be detrimental to the amenity of an area include— (a) the presence or absence of parking facilities;

	(b) traffic movement and density; (c) noise levels; (d) the possibility of nuisance or vandalism; (e) the harmony and coherence of the environment; (f) any other prescribed matters.
Compliance with planning scheme	It is a condition of every licence and BYO permit that the use of the licensed premises does not contravene the planning scheme that applies to the licensed premises under the Planning and Environment Act 1987.
Liquor accords	A code of practice or an agreement: (a) that affects the supply of liquor, the opening and closing of licensed premises or other aspects of the management of or conduct of business on licensed premises; and (b) that is entered into in writing between 2 or more licensees or permittees (or both), with the approval of the Chief Commissioner and the Commission, for the purpose of minimising harm arising from the misuse and abuse of alcohol. A liquor accord may make provision for or with respect to authorising or requiring any licensees or permittees who are parties to it to do either or both of the following— (a) to cease to supply liquor or to allow the consumption of liquor at their licensed premises; (b) to ban access by the public, or individual members of the public, to their licensed premises in a manner and to the extent provided by the accord.
Designated areas	The Commission may declare an area to be a 'designated area' if the Commission believes that: (a) alcohol-related violence or disorder has occurred in a public place that is in the immediate vicinity (100m) of licensed premises within the area; and (b) the exercise of powers under Division 2 (banning notices) or 3 (exclusion orders) of this Part in relation to the area is reasonably likely to be an effective means of reducing or preventing the occurrence of alcohol-related violence or disorder in the area.

Table 25: Location-based licensing provisions in NSW's Liquor Act 2007 (last updated 11 January 2013)

Provision	**Details of mechanism**
Temporary freeze on licences	The NSW Government introduced the liquor licence freeze in 2009 and it has subsequently been extended a number of times. The freeze initially applied to 3 precincts in the local area, and will continue for 2precincts until at least December 2013 and December 2015 respectively. CBD South is no longer subject to the liquor freeze at this time. During the freeze period: (a) licences must not be granted for hotels, clubs, on-premises licences that relates to a public entertainment venue, packaged liquor outlets and producer/wholesaler premises (b) extended trading authorisations must not be granted for premises, (c) extended trading authorisations must not be varied so as to increase the trading hours of the premises
Restricted alcohol areas	The regulations may: (a) declare any area of the State to be a restricted alcohol area, and (b) restrict the sale, supply, possession or consumption of liquor on any premises (whether or not licensed premises) in any such restricted alcohol area. For a restricted alcohol area, the regulations may restrict: (a) the trading hours for licensed premises, and (b) the kinds of liquor that may be sold or supplied, and the way in which liquor is sold or supplied, on licensed premises. A regulation may be made only if the Authority has recommended that the area should be declared a restricted alcohol area, in response to a request by a group of persons: (a) who seek to have the area declared a restricted alcohol area, and (b) who represent the interests of the community in that area. The Authority may not make such a recommendation unless it is satisfied, after consultation, that the proposed regulation is in the public interest and has the support of the majority of the community that is likely to be affected by the declaration. Any regulation declaring a restricted alcohol area must specify a period (not exceeding 3 years) during which the declaration is to have effect.
Alcohol free zones	The City has responded to requests from the community and established alcohol-free zones in areas that have attracted street drinkers, including lanes and parks. Where an alcohol-free zone is established, it is an offence for members of the public to drink alcohol in the zone 24 hours a day, 7 days a week.

	Local police enforce these laws. Applications for an alcohol-free zone can be made by members of the community or the police.
Liquor accords	Liquor accords are voluntary partnerships between the liquor industry (owners of licensed premises), local and state governments and the police. Such area-based accords can help develop local responses to specific issues. The Commissioner of Police and the Director-General are to endeavour to ensure that local liquor accords are prepared for all areas of the State. Local liquor accords are any code of practice, memorandum of understanding or other arrangement that aim to: (a) improve the operation of the licensed premises (b) promote the responsible service and consumption of alcohol (c) prevent or reduce alcohol-related harm. An accord may make provision for any of the following: (a) trading hours/days (b) restricted public access (c) to restrict the use of glass containers (d) to maintain an incident register (e) to install and operate CCTV or any other security device (f) to provide security staff (g) or any other thing to minimise alcohol-related harm. A precinct liquor accord or community event liquor accord is a set of measures, approved by the Director-General, that does not require the agreement of the accord participants to the measures provided. The Director-General may approve a precinct liquor accord if: (a) there is/is potential for a significant risk of harm to members of the public associated with the misuse and abuse of liquor in the precinct, and (b) the measures to be provided for by the accord are necessary: i. to prevent harm to members of the public associated with the misuse and abuse of liquor in the precinct, or ii. to protect and support the good order or amenity of the precinct in connection with issues arising from the presence of, or proposed increase in, licensed premises in the precinct
Kings Cross precinct	Regulatory controls for licensed premises in Kings Cross precinct The conditions prescribed by the regulations under this section may: (a) prohibit or restrict the use of glass or other breakable containers (b) prohibit or restrict the sale or supply of certain types of liquor on the licensed premises

	(c) prohibit or restrict the sale or supply of liquor on the licensed premises in certain circumstances or at certain times (d) prohibit patrons from entering the licensed premises at certain times (e) require the implementation of security or public safety measures (f) require incident registers to be kept (g) require the exclusion from licensed premises of persons of a specified class (e.g. gang member) (h) require the licensee to contribute towards the costs associated with measures to minimise or prevent alcohol-related violence or anti-social behaviour or other alcohol-related harm in the precinct.

Appendix 8: Evaluations of the effectiveness of location-based policies

Table 26: Available evaluations of the location-based policy mechanisms used by overseas councils

Mechanism type	Implemented in	Evaluation conducted	Evidence of effectiveness
Liquor bans (public places)	Australia	National Drug Research Institute, 2007	Local bans have been found to decrease public order problems in designated areas. Local bans have not led to overall reductions in public order offences, alcohol-related hospitalisations or police detentions of intoxicated persons. Apparent reductions in public order problems in designated areas are due to drinkers moving away to other areas where there are no, or fewer, restrictions.
		National Preventative Health Task Force, 2008	"While local dry area bans have been found to decrease public order problems in designated areas, overall it is not yet fully known if they reduce public order offences, alcohol-related hospitalisations or police detentions of intoxicated persons. Often dry area restrictions simply displace drinkers to other areas where there are no, or fewer, restrictions".
	Canada	Gliksman et al., 1995	86% of Canadian communities that adopted formal policies on the use of alcohol in public facilities experienced reductions in harms, including underage drinking, violence and vandalism. Reductions in police callouts and public complaints involving alcohol. Bans needed to be in place for six months or longer before communities experienced significant reductions in harms.
Local accord	Australia	National Drug Research Institute, 2007	"Most [evaluations] have been unable to demonstrate effectiveness in either short- or (particularly) long-term reduction of alcohol-related harms." "The appeal of accords probably rests more on the development of local communication networks, the facilitation of local input, a sense of local 'control', and improving public relations through open negotiations, than in the actual reduction of harm."

		Evaluation of the Geelong Local Industry Accord	97% of licensees believed the accord had yielded positive results for the local businesses. There was a high level of awareness and feeling of 'ownership' among members. Only 42% licensees had undertaken responsible beverage service training. Licensees reported: reductions in violence, property damage and movement between venues; a safer environment; reduction in binge drinking, intoxication and underage drinking; and improvement in nightclub image. Other key informants also reported a reduction in vandalism.
		Evaluation of the Fremantle Police-Licensee Accord	Pre- and post-intervention levels of harm indicators were examined among a selection of ten high-risk premises: • The evaluators did not find any evidence of significant reductions among any of the alcohol-related harm indicators • Survey data indicated that there was no overall perceived change in levels of harm.
		Evaluation of the Surfers Paradise Safety Action Project	Most licensees had made at least some positive changes to their management practices during the accord period. The overall level of safety perceived by nightclub patrons in vicinity had improved. Community and business survey respondents continued to report high levels of observed crime in the surrounding area. Although there was a slight decline in the number of assaults from the period before the accord to the post-intervention period the difference was not statistically significant.

Cumulative impact areas	UK, Victoria	Newcastle licensing policy statement review, 2013	"The current staggered closing times of licensed premises in the City Centre Cumulative Impact Area has helped to reduce the problems associated with large numbers of people leaving premises at the same time… Having considered the evidence of alcohol-related crime, disorder and anti-social behaviour, the density of licensed premises in the city centre and the views of local residents the Licensing Authority considers that the city centre as defined should remain a CIA." Reductions in reports of anti-social behaviour in the cumulative impact areas have exceeded the city-wide reductions (35-55% compared to 16%) for 2008-09. "The CIAs … have generally preserved a terminal hour of 11pm which has maintained the cosmopolitan feel of these mixed residential and commercial areas of the city but at the same time ensured that they remain relatively low for crime. This has found favour with residents and the licensed premises have generally upheld the licensing objectives. It is therefore proposed that these CIAs together with [three new CIAs] will remain in place."
Policies to manage impacts on sub-communities/ sites	Australia – sensitive sites and residential areas UK – residential areas	Grubesic et al., 2012	The current Pennsylvania liquor licensing system states that premises for new or transferred licences must be located at least 300 feet from schools, churches, hospitals, and playgrounds. Comparative evaluation of the existing distribution of outlets against the guidelines shows that there are currently 744 instances where alcohol outlets are within 300 feet of a community facility (i.e. 37% of all outlets in Philadelphia). In total, in 48% of all cases the licensing board allowed outlets to violate the community standards pertaining to the spatial distribution of alcohol outlets.