

## **EPA Victoria – Submission to the Parliamentary Inquiry into Environmental Design and Public Health**

Thank you for the opportunity to provide a submission to the Victorian Parliamentary Inquiry into Environmental Design and Public Health.

Environment Protection Authority Victoria (EPA) has an important contribution to make in improving planning and environmental design to protect public health. Over 40 years, EPA has developed considerable expertise and a significant monitoring and evidence base about the impact of activities on environmental quality and public health and options to mitigate these. This information about public health impacts is important to take into account when making decisions about planning and environmental design.

EPA sets environmental quality standards to protect public health and liveability. EPA also undertakes monitoring and scientific analysis on environmental impacts, including health impacts, to ensure the implications of environmental quality on human health are understood and considered in decision making. It is in this context and through this experience that EPA provides information to the Inquiry.

There are strong links between planning, environmental design and public health outcomes. These decisions can have major impacts on environmental quality and consequently the mental and physical health and wellbeing of local communities. Impacts typically include:

- Air quality impacts from industry, transport including from road and rail, and land use, for example from windblown dust, bushfire and wood smoke;
- Noise from industry, transport, agricultural and commercial facilities, for example industry located in residential/commercial activity centres;
- Odour from industrial and agricultural activities and the management of waste and wastewater;
- Water quality impacts, for example from urban run-off; and
- The public health risks associated with the use of contaminated sites.

Preventing and mitigating these impacts depends on a mixture of controls and considerations through planning and environment schemes. This includes, but is not limited to:

- setting environmental criteria to protect environmental quality, and through this, public health (a core role of EPA);
- control at source through design and operation of industrial facilities (a core role of EPA);
- regional and strategic planning to minimise impacts, for example reducing the reliance on road transport and ensuring land uses are compatible with adjacent land uses;
- design of precincts and sensitive land uses to be compatible with transport and to minimise pollution impacts;
- local planning to ensure local land use decisions are compatible, for example, land is not contaminated or is suitable for a particular use.

The environmental and health impacts of decisions can be acutely felt by local communities, such as those living near to an industrial estate. As a regulator, EPA seeks to ensure compliance, thereby helping to address issues of public health. However, planning sits alongside compliance as a key element in preventing and managing these impacts.

EPA provides expert and statutory advice, as a referral authority, as an input into some planning decisions, for example, approvals of new industrial facilities or changes in land uses near to industrial areas.

Many of the more significant health gains however can come from improving up front, regional and strategic planning and design considerations in areas such as transport, land

use and residential design. For example, new subdivisions can be designed to respond to the potential air and noise impacts of road and rail through setbacks, housing design and orientation.

Increasingly EPA is seeking to engage in such regional and strategic planning processes to ensure that critical information and expert advice about the impacts on environmental quality and public health is available and can be properly considered in the decision making process. This necessarily involves State Government agencies involved in planning and infrastructure investment, and local government. Frequently EPA has the opportunity to contribute information and expertise in these processes, however there are opportunities to improve the consistency with which this occurs.

In ensuring best practice environmental design and public health outcomes, engagement across the range of agencies involved is critical. This includes ensuring information is available to decision makers from the earliest possible point in the strategic planning processes. Interagency cooperation also has the benefit of ensuring that there is a balance between considering social, economic and environmental issues to consider the best overall outcome for Victoria. It ensures that community health is protected up front and that costly retrofits are avoided down the track. In some cases, it is not possible to retrofit controls and further development or use of important infrastructure can be limited by environmental and public health impacts.

EPA has recently completed a strategic planning process to align our work with issues critical for environment protection in the next five years. At a local and strategic scale, the critical interface with planning was identified as a priority for EPA over the next 5 years. This focus particularly highlights EPA's role in understanding environmental criteria and standards to assist in applying leading environmental design practices to our future planning. It is important that EPA is included during the planning and design stages where this knowledge and expertise can be applied.

## **Introduction - the role of EPA Victoria**

EPA Victoria is as an independent statutory authority established by the *Environment Protection Act 1970* (the Act). The Act defines EPA's powers, duties and functions and provides a framework for the prevention and control of air, land and water pollution, and noise.

### ***EPA's role in regulating for public health outcomes***

To provide further definition to desired environmental quality subordinate legislation, *State Environment Protection Policies* (SEPPs), express in law the community's expectations, needs and priorities for using and protecting the environment.<sup>1</sup> This is achieved through establishing uses and values of the environment that the community wants to protect, defining environmental quality objectives and describing attainment and management programs to meet SEPP objectives. Of relevance to enhancing public health, the SEPPs define uses and values that address:

- environmental quality that is protective of human health, considering toxicological, physiological and similar effects;
- amenity that is critical to the wellbeing and mental health of Victorians;
- other uses that support a healthy community including recreation, production of food and the critically important underpinning ecosystem functions.

Under the *Environment Protection Act 1970*, the requirements in environmental regulations, works approvals, licences and other regulatory tools, must be consistent with SEPPs. Much of EPA's regulatory activity is focussed on addressing environmental quality to protect public health.

### ***Case Study – State Environment Protection Policy (Control of Noise from Commerce, Industry, and Trade)***

The *State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade)*, SEPP N1, was developed as a direct recognition of the fact that Melbourne's planning scheme may position industrial areas near residential zones. The aim of the SEPP is to protect people from the effects of noise in noise sensitive areas. The policy requires new and proposed industries to be designed so as to not exceed the noise limits outlined in the SEPP. The planning scheme requires consideration of SEPPs in many planning decisions. In this way, SEPP-N1 is intended as a planning tool.

### ***EPA's Role in monitoring and assessing impacts on the environment***

EPA has a key role in monitoring and assessing the health impacts associated with environmental quality. EPA maintains a number of ongoing monitoring programs for air and water quality which provide important data to inform EPA's regulatory activities, and information to assist other decision makers and the community. Examples include:

- EPA's continuous monitoring of air quality at 15 locations across Melbourne and the Latrobe Valley, with information available directly via EPA's website;
- EPA's Beach Report program which monitors and forecasts bacterial water quality at 36 beaches around Port Phillip Bay.

As well as undertaking routine air and water environmental quality testing, EPA undertakes targeted investigations into environmental quality and the impact of environmental quality on human health. This includes scientific studies, social surveys and international literature

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<sup>1</sup>The key SEPPs relate to air quality, water quality, noise and contaminated land.

reviews to determine appropriate design standards to protect environmental quality and public health.

EPA's work in monitoring and assessing environmental impacts provides an information-base to contribute to continuing improvements in planning and environmental design decisions.

### **Case Study – Air Epidemiological Studies**

In 2000 and 2001, EPA conducted epidemiological studies in Melbourne which showed that approximately 300 deaths per year and 1,000 hospital admissions can be attributed to air pollution (EPA Publications 709 and 789). The people most vulnerable to the impact of air pollution are children, the elderly and people with existing cardiovascular and respiratory disease, including people with asthma. The findings of this study are consistent with international studies and previous studies conducted in Victoria and other parts of Australia (EPHC 2010).

Similar work has recently been completed nationally and a specific study focussing on children's health is nearing completion.

### **EPA's Role in Planning**

This submission refers to planning as encompassing:

- strategic land use planning, such as where new suburbs will be located and major transport investment decisions;
- setting environmental design standards for developments, such as precinct layout and housing design, to consider environmental impacts from sources including industry or transport;
- statutory planning decisions, such as the approval of new industrial uses, rezoning of land and subdivisions.

Many of the significant environmental design impacts on human health are associated with strategic land use decisions and related decisions about environmental design. Example opportunities to improve public health outcomes include:

- reducing reliance on private motor vehicles to assist in decreasing air pollution to meet air quality standards;
- design of new growth areas to help ensure dwellings are protected from road or rail noise and to reduce the impact of stormwater runoff on nearby waterways;
- designing precincts to help ensure air pollution is not trapped between high density developments, and that night time entertainment activity does not disturb sleep of nearby residents.

Knowledge of environmental conditions, and the statutory framework identifying the uses and values of the environment to be protected, need to inform these areas of planning. EPA's contribution to such decisions depends on effective engagement with whole of government planning strategies (e.g. Metropolitan Strategy), design guidance (such as advice from the Growth Areas Authority) and local government strategic planning functions. This is an area EPA has identified as a priority.

EPA is an important referral authority in planning schemes for particular types of use and development. EPA is a mandatory referral authority for any use or development requiring an EPA works approval or licence, or for approval of uses with 'adverse amenity potential' as defined in section 52.10 of the planning scheme (e.g. odorous or noisy industry). In some statutory referrals, EPA's consent is required for a planning authority to approve an

application. The focus of these planning requirements is to ensure that industries are designed and located appropriately.

While referral of some matters to EPA is mandatory, others are at the discretion of the relevant authority. For example, EPA is not a mandatory referral authority to develop a subdivision. This can mean that established industries can be encroached upon by new residential uses. This commonly results in environmental impacts such as air pollution, dust, odour or noise pollution, which can harm human health. EPA's compliance activities are commonly directed to these situations.

### **Case Study – Ports and Environs Advisory Committee**

This Planning Panels Victoria Advisory Committee recently submitted its report to the Planning Minister. The committee examined issues to do with encroachment of sensitive uses on ports, and the land use planning measures that can be applied to protect long term viability of ports. Its establishment was driven by concerns that incoming new residential uses may be impacted by ports' noise and air pollution, and that in turn the encroachment of new uses could lead to significant environmental compliance challenges for the ports. This could affect their long term viability.

The committee's discussion paper identified that there are currently no consistent planning controls to manage sensitive development. EPA submitted that future controls should respond to the SEPPs for air and noise management. This would ensure that port emissions were audited against the SEPPs and that new uses are appropriately located and designed to maintain port compliance and protect the expectations of residents.

### **Links between planning, environmental quality and health**

#### ***Odour Impacts***

Offensive odour affects the general life, health and wellbeing of individuals. The impact can depend on the intensity, character, frequency and duration of the odour.

Most of the odour incidents reported to EPA are due to existing premises that have not been appropriately designed or located, or where housing has since been built up to an existing industrial site. Local government administers planning schemes and has a key role in ensuring that planning permit applications for industry are properly assessed.

EPA has a role in protecting the community from odour through provisions in the EP Act. Some industries require a licence from EPA to operate. All licences issued by EPA to industries include the following statement to protect the air environment and prevent a breach of s41(1) of the Act, '*Odours offensive to the senses of human beings must not be discharged beyond the boundaries of the premises.*'

EPA publication AQ 2/86, *Recommended buffer distances for industrial residual air emissions*, gives guidelines for planning authorities to consider in the planning process with the aim of reducing odour impacts. Councils also assess compliance with existing planning permits and can take action to address amenity and health issues.

### **Case Study – Broiler Farms**

A key issue in odour management is the interaction between broiler farms and the encroachment of residential housing. These interactions cause concern for intensive animal industries and related industries (e.g. manure processing) that do not have planning controls that ensure industry security and the protection of sensitive land uses. They also impact on the enjoyment and liveability of residential areas close to these industries.

EPA has received 3762 pollution reports since 1 January 2000 complaining of odours from poultry farms, nearly all of which were due to broiler farms. Most broiler farms have under 5000 birds, and therefore do not require an EPA licence to operate.

Currently the approvals and compliance for these industries sit with local government which, due to the complexity of odour monitoring and enforcement, tend to not have the expertise or resources to ensure compliance. EPA has identified that early engagement and support to local government in these more complex planning decisions is a priority.

### **Case Study – SITA Hallam Road Landfill**

The proximity of landfill operations to residential areas is another key stressor on public health and liveability, again relating to issues in odour management.

The Hallam Road Landfill is one of the largest landfills in Victoria serving nine of Melbourne's municipal councils. Residents of the Lynbrook residential estate have been repeatedly and intermittently impacted by odours emanating from the Hallam Road landfill site for a number of years.

The landfill operator was fined in 2010 for failing to adhere to a licence condition that does not allow offensive odours beyond the boundary of the premises. Problems at the landfill are ongoing with hundreds of odour complaints received from nearby residents since 1 January 2011. Residents live within the 500 metre buffer zone around the landfill. EPA will continue to monitor the landfill operation, and take appropriate actions as per EPA's Compliance and Enforcement Policy.

The case study shows the importance of environmental design, in this instance retaining buffers, to protect public health and liveability. EPA recently made submissions in VCAT proceedings in relation to planning permit applications for residential developments close to the Hallam Road Landfill recommending that residential developments not be allowed within the 500metre buffer of the landfill. Further, encroachment on the buffers at this site will have the practical effect of limiting further development at the landfill.

### **Air Quality**

Melbourne's air quality has improved since the 1980s, largely due to industry complying with EPA standards and the introduction of emission controls on motor vehicles. In an international context, compared to similar urban centres, Melbourne's air quality is relatively good.

Air quality in Victoria can be impacted by emissions from industry, road and rail transport, woodfire smoke, bushfires, and windblown dust. Transport is the biggest contributor to Melbourne's air pollution and is a significant issue for urban planning. International studies

have shown that the health impact of air pollution is greater near major roads with the impact extending up to 500 metres (depending on the conditions). These health effects include increases in mortality and hospital admissions for respiratory and cardiovascular disease as well as exacerbation of asthma and increases in respiratory symptoms (HEI 2010). Vulnerable groups include children and the elderly. Providing adequate set back of residential development will help to reduce this impact. Consideration of the location of sensitive uses such as schools, kindergartens and aged care facilities away from roads will reduce the exposure of these sensitive groups to transport related air pollution.

Air Quality in Victoria is protected through two air SEPPs. The *State Environment Protection Policy (Ambient Air Quality)* sets air quality objectives and standards for the whole of Victoria adopted from national environment protection measures. The *State Environment Protection Policy (Air Quality Management)(SEPP)(AQM)* adopts measures to safeguard against harmful and unhealthy levels of air pollution. EPA's licensing and works approval system requires industry to meet the air quality standards within SEPP.

To ensure that the policy objectives are being met, the EPA keeps a close watch on air quality, monitoring for breaches of the objectives. Using this monitoring data, EPA is able to target its activities to control pollution from traffic, power generation, industry and other sources.

#### **Case Study – Brooklyn Industrial Precinct**

The Brooklyn industrial precinct is a legacy mix of industry and residential areas that demonstrates some of the difficulties that arise in part through the location of incompatible land uses. While industry practice has improved, environmental health and liveability for residents around the Brooklyn Industrial estate still remains a concern for residents. In particular, dust is a major pollution problem in the area with contribution from various sources including unsealed roads, earthworks and industrial activities. PM10 dust particles can affect individuals who have pre-existing respiratory or heart conditions. An EPA dust particle monitoring program shows that dust levels in Brooklyn exceeded the air quality objectives under SEPP (AQM) 46 times between October 2009 and March 2011.

In addition to ongoing EPA monitoring and enforcement activities focussing on industry compliance, EPA continues to work with local governments and other agencies to address sources outside of our direct regulatory control including through the sealing of unsealed roads and through maintenance and planning activities.

#### **Noise Impacts**

According to the World Health Organization's 2011 report on the burden of disease from environmental noise, sleep disturbance and annoyance related mostly to road traffic noise comprise the main burden of environmental noise. Widespread exposure to environmental noise from road, rail, airports and industrial sites contributes to this burden. One in three individuals is annoyed during the daytime and one in five has disturbed sleep at night because of traffic noise. Epidemiological evidence indicates that those chronically exposed to high levels of environmental noise have an increased risk of cardiovascular diseases. Thus, noise pollution is considered not only an environmental nuisance but also a threat to public health (WHO 2011).

According to the EPA's noise survey (2007), noise levels measured across Melbourne are similar to those measured in the past, despite growth in traffic volumes and increased urbanisation. However more people are affected by noise than 20 years ago (70% of people hear traffic noise in their homes and over one million Victorians are significantly annoyed, bothered or disturbed by it)(Green Light Report 2010). Noise from construction at residential

and other premises is also significant. For transport noise, such as rail, it is important to consider both transport-based controls and complementary planning and environmental design measures.

EPA's role in protecting the community from noise includes:

- contributing to the statutory framework for noise - two SEPPs for noise have been gazetted - Control of Noise from Commerce, Industry, and Trade and the Control of Music Noise from Public Premises;
- dealing with noise from larger industries and entertainment; and
- developing guidance and support for use by other agencies (e.g. local government, police and transport agencies).

### ***Water Quality Impacts***

Healthy water is essential to sustain the many demands that we, as a community, place on our water environments. Water environments are also of great environmental and cultural value to all Victorians, especially aboriginal and rural communities, which often see our water environments as the lifeblood of their communities.

The increasing percentage of built environments has resulted in a change to the hydrological regime. After rain events, hard surfaces (e.g. concrete, roadways) produce run off of a higher volume in a shorter amount of time than natural surfaces (e.g. grasslands, bushlands). Hard surfaces also accumulate vehicle emissions (e.g. hydrocarbons, fuel additives), litter, pet wastes (e.g. bacteria), and other pollutants that are all flushed into waterways during rain events.

The EPA Beach Report's long-term, historical results for beach water quality reinforce the pattern of rain temporarily causing poor water quality at bay beaches. As a general precaution, EPA advises against swimming near stormwater drains, rivers, streams and other outlets into Port Phillip Bay during rainfall and for at least 24 hours afterwards. This can impact significantly on recreation activities and enjoyment of outdoor areas.

The importance of improved stormwater management to mitigate these impacts is identified in the *State environment protection policy (Waters of Victoria)*(SEPP(WoV)). The Urban Stormwater Best Practice Environmental Management Guidelines (BPEMG) establishes stormwater quality objectives to assist in determining the level of stormwater management necessary to meet the SEPP (Waters of Victoria) objectives.

### ***Contaminated environment impacts***

Historically, land contamination has been a consequence of many types of industrial activity, most frequently occurring in urban centres. As the competitive advantages of inner urban locations decreases, many industries are moving to green-field sites on the outskirts of cities, leaving vacant industrial land available for commercial or residential development.

Experience has shown that such land often bears a burden of contamination which can significantly restrict its development potential. Historical contamination is also common in mining areas and in some agricultural areas (e.g. where sheep dip sites or chemical stores were located). Management of contaminated environments is important to ensure that the health of the community is protected.

The *State environment protection policy (Prevention and Management of Contamination of Land)* has been developed to help prevent the contamination of land and guide management of land that has become contaminated.

The key mechanism for preventing residents living on land that is contaminated and not suitable for use is a planning mechanism. Where former industrial land is to be redeveloped for a sensitive use, including residential use, then an environmental audit is required before the use commences, to demonstrate the site is suitable for that purpose.

Similarly, redevelopment of major former industrial sites represents a significant opportunity for urban renewal and innovative environmental design. It is also important that the issues of contamination of land and groundwater are considered early to ensure protection of public health in the most cost-effective manner.

### **Opportunities for future environmental design – EPA’s role**

The case studies above outlined that there are improvements that can be made in environmental design and planning to ensure better public health outcomes. Early and robust engagement between EPA and the range of agencies involved in planning is critical in achieving this. EPA has identified this as a priority and there are opportunities for improvement in this area.

The importance of work in this area is illustrated by the impact of the former Stevenson’s Road landfill on the residents of the Brookland Greens Estate in Cranbourne. This has been an important contributor in EPA identifying the need to better support planning decisions to protect public health.

#### **Case Study – *Dandenong South***

Southern Dandenong is a thriving region where industry and residents live in close proximity. As a region of active urban growth, Dandenong South presents an opportunity to optimise health outcomes through planning industrial and residential co-development. This region includes the Dandenong South Industrial Zone where important industries are located. The precinct also generates considerable levels of industrial emissions within the City of Greater Dandenong. The Department of Health is completing a health assessment (Dandenong South and Lyndhurst Health Study) in response to community concerns that emissions from the Dandenong South Industrial Zone and Taylors Road landfill may have led to an increase in cancer and birth defects in local residents. EPA and the Department of Health are focusing on this area to ensure good practice from business and a quality environment for residents.

EPA also has significant scientific knowledge and expertise that can be applied to help decision making for future planning. This capability can be used to ensure that future planning and environmental design decisions incorporate information about likely environmental quality trends and hotspots based on different environmental stressors.

### **Case Study – Future Air Project**

The development of effective air quality policies and strategies for the future requires an understanding of the likely future changes to air quality (e.g. climate change, population trends, bushfires). The Future Air Project is a joint venture between EPA and CSIRO to assess the impact of population growth, climate change and different emission scenarios on future air quality and human health.

Based on EPA's and CSIRO's air science expertise, the project will develop a modelling system which will demonstrate how planning, transport and industry development decisions impact on air quality across Victoria. This can then be used to assist in planning that supports best practice health outcomes.

### **Conclusions**

This submission has provided EPA's insight into issues of environmental design and public health as they relate to protecting environmental quality, in particular air, noise, water, odour and contaminated land. EPA contributes to environmental design and public health outcomes through setting and regulating against environmental quality standards as well as providing scientific information and expertise.

Early and robust engagement with agencies responsible for planning and environmental design decisions will continue to be important in ensuring environmental quality is protected and public health outcomes enhanced.

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