

**City of Melbourne**  
**Submission to Victorian Climate Change Green Paper**

DRAFT

## Executive Summary

The City of Melbourne's important role in achieving emissions reduction and implementing adaptation measures in the capital city municipality can be significantly leveraged with State Government assistance. Our inner city and regional alliances, such as the the Inner Melbourne Action Plan (IMAP) and the Northern Alliance for Greenhouse Action (NAGA) have also proven to effective for developing and implementing programs.

Key areas where government can implement reforms, initiatives and regulations to achieve emissions reductions and enable communities to adapt to the effects of climate change. In the built environment these include:

- the continuation and expansion of the VEET scheme
- initiatives aimed at commercial buildings. Such as the City of Melbourne's 1200 Buildings program to retrofit of 1200 commercial buildings by 2020 and reduce emissions by 383,000 tonnes/year.
- Deployment of combined heat and power systems which will significantly reduce emissions.

In the transport sector where there is significant potential for emissions savings, opportunities exist for:

- Provision of incentives for low emissions vehicles, car share services and grid to vehicle technologies will reduce emissions from private vehicles.
- Greater support for walking and cycling programs to shift to lower emissions modes – from cars to public transport and from public transport to walking and cycling.
- The decarbonisation of the public transport system.
- Innovations in last kilometre freight systems to reduce the energy intensity of local freight services.

Government support and partnership with local government for such systems, either through direct investment and regulatory reforms will facilitate change, create momentum and develop industry capacity and jobs.

State and local governments will need to partner to support communities adapting to the inevitable effects of climate change. The physical and social infrastructure in the City of Melbourne will need to be prepared, including health and welfare services, and defenses against flooding and sea level rises. The review and amendment to building codes and planning regulation will be needed to ensure the built environment is made for the conditions of the city's future climate.

The Green Paper positions Victoria with the ambition to lead in meeting the challenges of climate change. But there is much to be done to move from Victoria's current highly carbon intensive economy. International alliances and lessons from other jurisdictions nationally and around the world will be important. The City of Melbourne is eager to work with State government to achieve the ambition set out in the Green Paper.

## Summary of Recommendations

- **Governments working together**
  1. That State funding be continued for individual councils and regional collaborations between local governments to develop and implement local and regional climate change mitigation and adaptation programs.
  2. That State Government recognise the role for local governments to address mitigation and adaptation through planning controls.
- **Has the Government set the right priorities for short term action on climate change? Should there be others?**
  3. That there be greater use of regulations to focus on sectors which are least likely to adopt emissions reduction measures without regulatory intervention. This includes the property sector, areas where there are split incentives and existing regulatory or cultural barriers to change.
  4. That the Building Code of Australia be strengthened to achieve greater emissions reductions.
- **What actions are required to enable Victoria to develop a diverse portfolio of low emissions energy sources to ensure supply, create jobs and attract investment and minimise costs?**
  5. Increased proportion of renewable energy sources in the electricity generation system.
  6. Resolve the grid connection barriers to the adoption of embedded energy generation within buildings and to the development of district scale combined heat and power systems.
  7. That distributed cogeneration and tri-generation systems (combined heat and power) be incorporated in public developments.
- **What information, incentives or assistance would help households, businesses and community organisations to become more energy efficient?**
  - **What would drive the development of the new green jobs, skills and services needed to make it easy for households, businesses and communities to become more energy efficient?**
  - **What is the role of regulation in helping Victorian businesses achieve efficiency savings, driving industry development and establishing energy efficiency standards?**
  8. That focus be given to residential and small commercial tenancies who are least likely to adopt energy efficiency measures without intervention.
  9. That the VEET scheme be extended to the commercial sector.
  10. That smart grids be developed to enable savings to peak load, development of distributed generation and real-time consumer information.
  11. That sale of property laws be used to require minimum energy performance standards to residential and commercial properties at the time of sale.
- **How can the Government build on the Victorian Transport Plan and Melbourne 2030 to encourage concentration of housing, jobs and recreation opportunities around key centres to minimise journeys?**
  12. Provide proactive incentives and removal of disincentives for greater mixed use densification along transport corridors and in central activity centres.
  13. Improved ease, safety and convenience for walking and cycling in the central city and activity centres.
- **What activities are needed to drive the development of low emissions vehicles to reduce emissions and create jobs and investment in Victoria?**
  14. That grid to vehicle technology be incorporated into public developments
  15. Provide incentives for owners of electric vehicles including reduced registration costs, free parking, access to priority lanes.

16. Pilot the use of electric cars in car sharing services incorporating charging at the parking bays in public parking stations and in public streets
  17. Increase the use of electric vehicles in Government fleets.
  18. Provide Planning permit concessions for the provision of car share facilities in developments
  19. Regulate for higher vehicle efficiency and emissions standards.
  20. Decarbonising public transport system through the deployment of combined heat and power systems within dense urban development at transit nodes and along tram corridors.
  21. Decarbonisation of bus networks through fuel switching and use of low emissions technologies
  22. Make marginal reductions to speed limits across the road network to support fuel efficient, lower emission driving.
  23. Implement 'last kilometre' freight solutions as identified in the Freight Futures strategy for service and delivery in the central city and Central Activity Districts.
- **What information and assistance is needed to encourage mode shift?**
    24. Ensure safe and convenient access and priority for walking and cycling throughout the central city, activity centres and strips.
    25. Make vehicle traffic more compatible with pedestrian and cycle traffic by reducing road speed limits throughout activity centres and strips.
    26. Implementation of improved public transport frequencies, improvements to the bus system and greater integration between modes.
  - **What actions are required to ensure our cities, towns, suburbs and homes produce low emissions and are located and designed to deliver comfort and affordability as our climate changes?**
    27. Government needs to be pro-active in resolving and addressing the blockages and disincentives to urban consolidation including delays and uncertainty in planning permission.
    28. Be affirmative in promoting the benefits of urban consolidation and living and working in mixed use high density, transit oriented neighbourhoods.
    29. Shifting the substantial incentives identified by Newman et al currently underpinning fringe development to urban consolidation development.
    30. Adopt greater stringency in energy performance requirements in building regulations.
  - **What actions are needed to make Victoria a centre of innovative and sustainable building products and services?**
    31. That State Government provide support in the form of funding for the delivery and implementation of the City of Melbourne's 1200 Buildings building retrofit project.
    32. That the Government assist in skills and knowledge development in the construction, facilities management and building design sectors.
    33. That targeted monetary incentives be aimed at those buildings least likely to otherwise undertake retrofit activities.
  - **What actions are required to make Victoria a centre for resource recovery industries and technologies?**
    - **How can the Government create the investment environment and demonstrate the business case for new waste technologies?**
    - **How can we reduce emissions and save households and businesses money by reducing waste?**

34. That the Government provide funding for waste to energy projects consistent with opportunities identified in the *Metropolitan Waste Recovery and Resource Recovery Strategic Plan*.
35. That regulations be employed to reduce waste generation, including regulations aimed at packaging, cost of waste disposal and packaging.
36. That a South Australian-style container deposit scheme be adopted.
37. That changes to planning regulations to address the lack of waste separation in medium and high density residential buildings be supported.

▪ **Tourism**

38. Develop and promote a reduced carbon footprint for visitors to Melbourne
39. That the tourism sector be engaged in implementing climate change mitigation measures as well as showcasing climate change mitigation and adaptation measures.

▪ **What are the roles of government, households and businesses in preparing for the impacts of climate change?**

40. That local government be involved in community engagement on adaptation action.
41. That the impacts on transient and visitor populations be incorporated into planning for emergency and major climate events.

▪ **How can we build on the Government's Water Plan to secure Victoria's water future, by using water differently as individuals, households, communities and businesses?**

42. That a combination of decentralised and centralised water management solutions be pursued.
43. That stormwater harvesting and water sensitive urban design (WSUD) be advanced as a means of better utilising water resources.

▪ **What are the critical areas the Government needs to address in relation to adapting our urban built environment and infrastructure to climate change?**

44. That a comprehensive review of building and planning codes be undertaken and necessary amendments made to ensure buildings and infrastructure is capable of withstanding the expected long term effects of a changed climate.
45. That modelling of expected sea level rises be undertaken and that the results of the modelling be incorporated in future planning decisions.

▪ **What are the critical steps the Victorian Government can take to ensure that we are prepared and can respond quickly and effectively to deal with increasing extreme weather events?**

46. That the capacity of health services to cope with climate change incidents be addressed.
47. That the availability of aged care and capacity to deal with the effects of heat waves on the elderly be addressed.

▪ **What help does your community need in adapting to the possible health impacts of climate change?**

48. That Local Government be engaged in the development of actions on climate change adaptation relating to health.
49. That focus be given to the effects of heatwaves, storm and flooding events, food borne diseases.
50. That priority be given to passive cooling and reduction of heat islands in urban areas, focusing on the reintroduction of water in urban areas and availability of open space.

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## Introduction

The city of Melbourne welcomes the Victorian Government's Climate Change Green Paper and the opportunity to comment on the State's approach to climate change adaptation and mitigation. This submission identifies several opportunities where the State can work with the City of Melbourne to achieve emissions reductions and assist the community in adapting to locked in climate change

The City of Melbourne's *Zero Net Emissions by 2020* policy to reduce the municipality's emissions was adopted by Council in 2002 and updated in 2008. The policy has strategies for reducing emissions across a range of sectors. In 2009 Council adopted its Climate Change Adaptation Strategy which sets out a comprehensive framework for adapting the municipality to the changing climate and now provides a policy umbrella for Councils existing water management strategy. This policy framework is outlined in Appendix 1.

The submission reflects the structure of the Green Paper and focuses only on those areas of the Green Paper which directly relevant to the City of Melbourne. Headings that have been omitted are marked by the discontinuous numbering of headings within this submission.

## Part One: Victoria's Climate Change Framework

### 1.3 Governments working together – a new role for Victoria

#### *Comments*

Local Government is well placed to engage with its community and build capacity on climate change mitigation and adaptation. The bulk of emissions occur as a result of activities in urban areas where most of the population resides. Urban local governments therefore have a key role to play in greenhouse mitigation and behaviour change programs, and leadership through local actions. But local governments need to be better resourced to deliver these strategies.

Regional models of program development and delivery present an effective way of achieving climate change implementation and mitigation. The City of Melbourne, together with eight other local governments in the northern metropolitan region, participates in the Northern Alliance for Greenhouse Action (NAGA). NAGA undertakes the coordination of community based measures to achieve mitigation and reduction of greenhouse gas emissions and has proven to be an effective model through which to achieve efficiencies in delivering programs to the community on a wider scale. The City of Melbourne also participates in the Inner Melbourne Action Plan (IMAP). Through IMAP the Cities of Melbourne, City of Port Phillip, Stonnington and Yarra work collaboratively to make the Inner Melbourne region more liveable.

These models demonstrate that regional alliances can be effective for designing, developing and implementing programs for the community at a local level by individual councils or at a wider regional level. Continued support and funding for such regional approaches to addressing climate change issues is called for.

The City of Melbourne has several local business and residential greenhouse gas emissions reduction programs:

- the 1200 Buildings program, aimed at catalysing the retrofit of 1200 buildings in the municipality to achieve reductions in energy and water consumption (ongoing);
- the *Energy Saver – it all Starts at Home* program, partnering with several organisations to undertake simple retrofits in homes to achieve low-cost energy efficiency savings (ongoing);
- Implementing Travel Smart - encouraging connected communities and facilitating more trips through walking and cycling.

Local Governments can play a greater role in achieving greenhouse gas emission reductions through building and planning regulations. While some local governments have adopted sustainability assessment tools such as

‘STEPS/SDS’, many have not, and where such tools are adopted, these are only as guidelines and have little regulatory backing. Such tools demonstrate that there exist planning and building considerations relating to climate change which are not addressed by planning or building regulations where improvements can be made and that further action in this area is required.

***Recommendations***

1. That State funding be continued for individual councils and regional collaborations between local governments to develop and implement local and regional climate change mitigation and adaptation programs.
2. That State Government recognise the role for local governments to address mitigation and adaptation through planning controls.

**1.6 Choosing Between Different Policy Levers.**

- **Has the Government set the right priorities for short term action on climate change? Should there be others?**

***Comments***

Greater use of targeted regulations in key areas will enhance short term action on climate change mitigation. Regulation is appropriate in sectors where mitigation activity is unlikely to be undertaken through voluntary means, education campaigns, monetary incentives or other forms of assistance. Such sectors include situations where there are split incentives - the party which bears the cost for reducing emissions reductions is different to the party that benefits from operational savings - (eg. residential landlords and tenants, or the generation and disposal of waste). Other areas where regulation is appropriate are those where there are regulatory or cultural barriers to change, or where there is no market incentive for reducing emissions due to relatively low energy costs. These sectors include the property sector, particularly the residential and smaller scale commercial sectors; other areas where there are split incentives between and existing regulatory barriers to change.

There also exists a role for Government to utilise more stringent regulations in the areas of building, planning and waste management to achieve greater emissions reductions. These issues are discussed elsewhere in this submission.

***Recommendations***

3. That there be greater use of regulations to focus on sectors which are least likely to adopt emissions reduction measures without regulatory intervention. This includes the property sector, areas where there are split incentives and existing regulatory or cultural barriers to change.
4. That the Building Code of Australia be strengthened to achieve greater emissions reductions.



## Part Three: Complementing the CPRS: A New World of Opportunities

### 3.1 The stationary energy sector

- What actions are required to enable Victoria to develop a diverse portfolio of low emissions energy sources to ensure supply, create jobs and attract investment and minimise costs?

#### *Comments*

There are opportunities to significantly reduce the carbon intensity of stationary energy supply through distributed systems where the means of generation is located closer to the point of consumption.

In addition to the strong focus on carbon capture and storage solutions identified in the Green Paper, there needs to be a greater focus on the adoption of renewable energy technologies harnessing the natural energy resources available in the State. Cogeneration systems which utilise waste heat to provide heating to buildings or industrial processes also present opportunities to improve efficiency while reducing greenhouse gas emissions. These can be imbedded within buildings, or implemented on a district scale. The City of Melbourne's *Zero Net Emissions by 2020* strategy identifies the decarbonisation of the energy supply through these means as the greatest single opportunity for reducing the City's emissions.

Significant emissions savings can be achieved through combined heat and power (CHP) systems which generate electricity using sources other than brown coal, while capturing the heat for useful applications. Such systems can be 90% efficient as opposed to efficiencies of less than 40% for traditional power stations. CHP systems can be best utilised at district scale in industrial, commercial, residential and institutional precincts. This approach has recently been adopted at a new community housing development in Carlton and has potential widespread applications in housing, industry, hospitals and community facilities. Combined with transit oriented development near train stations and activity centres, such systems could provide electricity to train and tram networks while providing heating and cooling to buildings.

Barriers to connecting such systems to the distribution grid hinder their development. These barriers include costs for technical studies required by distribution utilities and technical constraints to the electricity grid. Current regulations governing the generation, distribution and retail of electricity do not easily facilitate the development of distributed or embedded low carbon energy generation systems. This is particularly the case with district systems which span beyond a single property and where heat, as well as electricity is generated and sold to multiple users. Government can play a role in undertaking studies of network infrastructure in strategic locations of high energy demand and potential supply to identify barriers and opportunities, and to resource augmentation of networks to enable the development of distributed systems. New regulatory frameworks aimed at resolving issues of ownership, management, retail and connection to existing distribution networks for such systems are called for.

Government has the ability to significantly affect the adoption of such technologies and development of skills and knowledge in this area. This can be achieved through incorporating district scale CHP systems in future public developments and can engage neighbouring properties in finding useful applications for the heat generated. CHP systems can be developed along existing train and tram routes with the ability to upscale and connect to future infill mixed use developments. Government also has the role of developing regulatory frameworks to support the management and operation of district scale CHP systems.

Setting targets for the diversification of the energy supply would enable the monitoring of progress in this area.

#### *Recommendations*

5. Increased proportion of renewable energy sources in the electricity generation system.
6. Resolve the grid connection barriers to the adoption of embedded energy generation within buildings and to the development of district scale combined heat and power systems.

7. That distributed cogeneration and tri-generation systems (combined heat and power) be incorporated in public developments.

### **3.2 Energy Efficiency**

- **What information, incentives or assistance would help households, businesses and community organisations to become more energy efficient?**
- **What would drive the development of the new green jobs, skills and services needed to make it easy for households, businesses and communities to become more energy efficient?**
- **What is the role of regulation in helping Victorian businesses achieve efficiency savings, driving industry development and establishing energy efficiency standards?**

#### ***Comments***

In developing government policies aimed at achieving greater energy efficiency in buildings, special attention should be given to those sectors which are least likely to adopt such initiatives simply through greater energy costs. Particularly vulnerable groups include residential tenants, low-income earners, the not-for-profit and community sector, and smaller commercial tenants. Community engagement programs which undertake the installation of energy efficiency improvements on behalf of these groups are needed.

The Victorian Energy Efficiency Target (VEET) Scheme has demonstrated the potential to create a market based incentive for achieving emissions reductions in the residential sector. The scheme which requires electricity retailers to purchase energy efficiency certificates generated through energy efficiency improvements to homes should be adapted to the commercial and industrial sectors to stimulate sectors of the economy otherwise slow to respond to the introduction of a carbon price. The commercial sector, particularly small and medium enterprises and small and medium sized buildings would also benefit from a similar scheme.

The development of smart grids has the potential to create green jobs and achieve greater energy efficiency. The rollout of smart grids should go beyond the rollout of smart meters, but also include means of providing timely information to consumers, such as through in-home displays. This raises awareness and enables consumers to adjust behaviour accordingly.

Regulations can target relatively low-cost energy efficiency improvements with short pay back periods at the time of certain transactions such as at the sale of commercial and residential property. This regulatory mechanism has been adopted in several States in the property sector where for example, some states require electrical safety switches and/or smoke alarms to be installed in homes prior to the sale of a property. Such regulations should be adopted for residential and commercial buildings and should require the installation of ceiling insulation, weather seals, the replacement of inefficient heating, cooling and hot water appliances and installation of smart meters. Such targeted regulations could also address situations where 'split incentives' exist - that is, where the capital outlay for the energy improvement initiative is the responsibility of one party but benefits another. Examples include the residential tenancy sector and, in some cases, the commercial property sector.

#### ***Recommendations***

8. That focus be given to residential and small commercial tenancies who are least likely to adopt energy efficiency measures without intervention.
9. That the VEET scheme be extended to the commercial sector.
10. That smart grids be developed to enable savings to peak load, development of distributed generation and real-time consumer information.
11. That sale of property laws be used to require minimum energy performance standards to residential and commercial properties at the time of sale.

### 3.3 Transport

- **How can the Government build on the Victorian Transport Plan and Melbourne 2030 to encourage concentration of housing, jobs and recreation opportunities around key centres to minimise journeys?**

#### *Comments*

The capacity of Melbourne's inner suburbs and the quality of existing transport networks should be capitalised on and further consolidated. To work efficiently public transport networks must service high density, mixed use nodes and corridors. Planning regulations to facilitate the mixed-use densification along transport corridors and central activity districts are supported.

Greater incentive to develop denser central activity nodes can be achieved through reducing government incentives in the form of infrastructure funding in outer areas relative to that spent on existing urban sites. This is discussed further in the 'built environment' section below.

Support for walking and cycling to central activity nodes - in the form of funding for infrastructure and behaviour change management projects - is required. The road networks in these mixed use corridors and transit nodes must be managed to give priority to walking, bicycles and low speed/low impact private vehicles which can then satisfy most of the local short trip needs in the range of 1-5 kilometres. This can be in the form of improved walking and bicycle paths to central activity districts, expanded and improved bicycle parking at central activity districts and railway stations.

A significant shift away from traditional models of public transport funding *vis-à-vis* road funding is called for. This is in recognition of the significantly greater demands on public transport in a carbon constrained transport system combined with the traditionally low levels of funding afforded to public transport in the past.

#### *Recommendations*

12. Provide proactive incentives and removal of disincentives for greater mixed use densification along transport corridors and in central activity centres.
13. Improved ease, safety and convenience for walking and cycling in the central city and activity centres.

- **What activities are needed to drive the development of low emissions vehicles to reduce emissions and create jobs and investment in Victoria?**

#### *Comments*

The incorporation of vehicle-to-grid technology in any government land development, including public buildings and residential land developments, will help create infrastructure and a critical mass for the adoption of electric vehicles.

In addition to pursuing the transition to electric vehicles, there is a role for Government to encourage carpooling and share car schemes. Car sharing avoids the need for car ownership and encourages the use of alternative transport modes. Planning concessions aimed at parking space requirements can be adopted for developments which promote and incorporate provision for share cars. Greater State Government support for car share schemes through subscription to such programs would lead to the proliferation of car share infrastructure. This is particularly encouraged where government agencies are located in mixed use precincts. Government employees should be required to use share cars instead of fleet vehicles.

European experience demonstrates that improved emission and vehicle efficiency standards can be achieved through more stringent government regulations. Vehicle standards in Europe have exceeded those in Australia for many years and have resulted in greater fuel efficiency and emissions levels. Furthermore, European regulatory requirements require vehicle components to be recyclable and have resulted greater emphasis on smart vehicle design.

Opportunities for developing district scale combined heat and power systems (cogeneration and tri-generation) at dense transit nodes to provide low-carbon electricity for trains and trams and heating and cooling to buildings

in the node are discussed in section 3.1 above. This approach will decarbonise the train and tram networks and improve the security of their power supply.

Decarbonisation of bus networks can be achieved through the introduction of more fuel efficient and low-carbon buses such as diesel hybrids, and buses powered by bio-diesel or natural gas. A program to replace or retrofit inefficient and high emission busses should be adopted.

Marginal reductions in speed limits across the road network and also more suited to the actual driving conditions will reduce stop start and aggressive behaviour and support more efficient driving. This can lead to vehicle fuel efficiencies (and emissions efficiencies) of 15%-30%

The City of Melbourne has recently embarked on a sustainable freight project specifically concerned with the 'last kilometre' concept in the CBD. The City of Melbourne seeks State Government support for the implementation of the 'last kilometre freight' actions identified in the State Government's freight strategy '*Freight Futures*'.

### **Recommendations**

14. That grid to vehicle technology be incorporated into public developments
15. Provide incentives for owners of electric vehicles including reduced registration costs, free parking, access to priority lanes.
16. Pilot the use of electric cars in car sharing services incorporating charging at the parking bays in public parking stations and in public streets
17. Increase the use of electric vehicles in Government fleets.
18. Provide Planning permit concessions for the provision of car share facilities in developments
19. Regulate for higher vehicle efficiency and emissions standards.
20. Decarbonising public transport system through the deployment of combined heat and power systems within dense urban development at transit nodes and along tram corridors.
21. Decarbonisation of bus networks through fuel switching and use of low emissions technologies
22. Make marginal reductions to speed limits across the road network to support fuel efficient, lower emission driving.
23. Implement 'last kilometre' freight solutions as identified in the Freight Futures strategy for service and delivery in the central city and Central Activity Districts.

### **▪ What information and assistance is needed to encourage mode shift?**

#### **Comments**

In and around the inner city mode shift from public transport to walking and cycling becomes as important as mode shift from cars. Stronger measures to make walking and cycling safe and attractive within ten kilometres of the central city will encourage a shift out of trams as well as out of cars and so free up capacity on trams as they get closer to the central city.

The provision of high frequency public transport would assist in achieving mode shift and reducing emissions associated with transport. An improved bus network could provide significant improvements to the public transport system without the additional costs involved in tram or heavy rail infrastructure. Significant improvements to the perception of bus transportation can be achieved through the use of dedicated busways, bus priority on the road network, pre purchased ticketing, real-time bus arrival information, significantly improved frequencies and greater integration with other modes.

### **Recommendations**

24. Ensure safe and convenient access and priority for walking and cycling throughout the central city, activity centres and strips.

25. Make vehicle traffic more compatible with pedestrian and cycle traffic by reducing road speed limits throughout activity centres and strips.
26. Implementation of improved public transport frequencies, improvements to the bus system and greater integration between modes.

### 3.4 The Built Environment

- **What actions are required to ensure our cities, towns, suburbs and homes produce low emissions and are located and designed to deliver comfort and affordability as our climate changes?**

#### *Comments*

The general direction outlined in the Green Paper in relation to the built environment is supported. Additional focus on the energy efficiency of existing buildings is called for as well as greater stringency in regulations for new buildings. Further action is also required to encourage greater densification of existing urban areas and creation of more compact central activity nodes. The achievement of more dense central activity nodes can be achieved through mechanisms within the planning framework and through targeting of Government spending.

These outcomes can be achieved through addressing the imbalance in government infrastructure spending between greenfield, brownfield and infill sites. Research identifying potential savings to Government through such approaches has been undertaken by Newman et al<sup>1</sup>. The study also shows that inner city development has a significantly lower carbon footprint than fringe development. Models for achieving greater density of mixed use development along transport corridors has been demonstrated through recent research undertaken by the City of Melbourne on behalf of the Department of Transport<sup>2</sup>.

In order to achieve these outcomes, State Government could partner with and provide funding to a variety of public and private organisations to develop policy and undertake implementation of strategic sustainable development to achieve improved environmental and greenhouse gas outcomes in urban areas. Developments such as the zero emissions developments proposed to be undertaken in partnership with VicUrban at Victoria Harbour in Docklands and at Pakenham must become the norm.

#### *Recommendations*

27. Government needs to be pro-active in resolving and addressing the blockages and disincentives to urban consolidation including delays and uncertainty in planning permission.
28. Be affirmative in promoting the benefits of urban consolidation and living and working in mixed use high density, transit oriented neighbourhoods.
29. Shifting the substantial incentives identified by Newman et al currently underpinning fringe development to urban consolidation development.
30. Adopt greater stringency in energy performance requirements in building regulations.

- **What actions are needed to make Victoria a centre of innovative and sustainable building products and services?**

#### *Comments*

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<sup>1</sup> [Assessing the Costs of Alternative Development Paths in Australian Cities \[pdf - 612Kb\]](#) by Roman Trubka, Peter Newman and Darren Bilsborough. This report was commissioned by Parsons Brinckerhoff Australia.

<sup>2</sup> See, *Transforming Australian Cities: Exploring Potential for Residential Intensification to Transform Melbourne* Study by City of Melbourne and Victorian Department of Transport May 2009  
See also *Creating a city that works: Opportunities and solutions for a more sustainable Melbourne*. Commissioner for Environmental Sustainability Victoria, 2007.

The City of Melbourne's '1200 Buildings' program aims to catalyse the retrofit of 1200 commercial buildings to achieve 383,000 tonnes of greenhouse gas emissions. The program will cast a spotlight on building retrofits, give recognition to buildings which undertake retrofits, showcase technologies and case studies, make the business case for retrofits, facilitate access to funding, connect building owners with technology providers, work in partnership to develop skills and industry capacity and undertake regulatory reform to facilitate retrofits.

Government can play a critical role in developing skills and knowledge within the construction, facilities management and building design sectors to raise awareness of practical methods of achieving improved building energy performance and sustainable practices in the areas of water use, waste minimisation and management and resource use.

The Government can take targeted steps through targeted grants and monetary or tax incentives to achieve sustainability improvements in commercial buildings least likely to undertake retrofits without intervention.

### **Recommendations**

31. That State Government provide support in the form of funding for the delivery and implementation of the City of Melbourne's 1200 Buildings building retrofit project.
32. That the Government assist in skills and knowledge development in the construction, facilities management and building design sectors.
33. That targeted monetary incentives be aimed at those buildings least likely to otherwise undertake retrofit activities.

## **3.5 Solid Waste Management**

- **What actions are required to make Victoria a centre for resource recovery industries and technologies?**
- **How can the Government create the investment environment and demonstrate the business case for new waste technologies?**
- **How can we reduce emissions and save households and businesses money by reducing waste?**

### **Comments**

Regulatory intervention would assist in the reduction of organic waste volumes in Victoria. Unlike other jurisdictions, large volumes of Melbourne's organic waste are sent to land fill due in part to relatively low landfill costs in Victoria. Requirements for organic waste to be separated from landfill and Government funding for waste to energy plants (such as the one being considered for the Melbourne waste transfer facility at Dynon Road) and could help address this situation. In addition to reduced greenhouse gas emissions, the development of decentralised waste to energy plants will improve security of energy supply. This approach is consistent with the nine opportunities for waste recovery for the inner suburbs identified in the *Metropolitan Waste Recovery and Resource Recovery Strategic Plan*.<sup>3</sup>

The adoption of a South Australian-style deposit and rebate scheme for containers would create a market based incentive to encourage the diversion of recyclable waste from landfill. This position was supported by a Council Resolution in June 2009. In order to further reduce the volumes of non-organic waste, attention must also be given to product and packaging design to minimise the volume of material generated as waste. Up to 80% of waste could be avoided through smarter 'end of life' design. Regulatory measures could be introduced to address this issue.

European regulatory models which shift responsibility for product waste to retailers and manufacturers have managed to change product and packaging design decisions and waste management practices. There is currently a split incentive or split responsibility for waste generation whereby end users are not always able to control decisions regarding materials used for products and packaging. Conversely, manufacturers and retailers are not

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<sup>3</sup> DSE, 2009. *Metropolitan Waste Recovery and Resource Recovery Strategic Plan*, Part 2, p. 33.

responsible for the disposal of those products and packaging. Similar European-style regulatory models could be adopted in Victoria.

Planning regulations have the potential to facilitate better collection and segregation of organic and recyclable waste. The design of apartments and medium-high density dwellings has been identified as a major impediment to achieving increased rates of recycling in the residential sector. While most high-rise residential buildings contain rubbish chutes, few contain separate recycling chutes, requiring residents to carry recyclables to the basement. This greatly reduces the levels of diversion of waste to the recycling stream. State and national building and planning regulations would greatly assist in addressing this issue in new buildings.

#### ***Recommendations***

34. That the Government provide funding for waste to energy projects consistent with opportunities identified in the *Metropolitan Waste Recovery and Resource Recovery Strategic Plan*.
35. That regulations be employed to reduce waste generation, including regulations aimed at packaging, cost of waste disposal and packaging.
36. That a South Australian-style container deposit scheme be adopted.
37. That changes to planning regulations to address the lack of waste separation in medium and high density residential buildings be supported.

## **Part Four: Adjustment: The low carbon economy**

### ***Creating opportunities***

#### **Tourism**

##### ***Comments***

Tourism makes an important contribution to Melbourne's economy. In addition to the matters discussed elsewhere in this submission, opportunities have been identified in engaging with the tourism industry to play a role in both reducing impacts on the environment and while also showcasing Victoria's climate change credentials to visitors.

Supported by the various initiatives discussed elsewhere in this submission, Inner Melbourne could be promoted as a more sustainable tourism destination which is resource smart, energy efficient and which has a low carbon footprint. Such an approach would continue to maintain Melbourne's reputation as a liveable city and enhance Victoria's reputation as a leading jurisdiction in the area of environmental sustainability and climate change.

Strategies would include engagement programs to reduce emissions from hotels and tourism operators and using the opportunity of tourism focal points to develop low energy precincts. Programs could also focus on improving waste management practices at tourism destinations and among tourism operators. Local Government would partner with State agencies to deliver such programs.

Initiatives would also be required to identify the impacts of a changing climate on tourism operators and where necessary provide guidance on adaptation measures. Strategies for reducing emissions from travel should also be considered.

##### ***Recommendations***

38. Develop and promote a reduced carbon footprint for visitors to Melbourne.
39. That the tourism sector be engaged in implementing climate change mitigation measures as well as showcasing climate change mitigation and adaptation measures.

## Part Five: Adaptation: A New Reality

- **What are the roles of government, households and businesses in preparing for the impacts of climate change?**

### *Comments*

Local governments have a unique and challenging role in assessing and addressing the impacts of climate change. As well as prudent risk management, local government has the ability to play a role of educator and communicator to develop awareness within their communities and to promote adaptive action.

City of Melbourne faces particular adaptation challenges due to the dynamics of the city. Perhaps the most significant dynamic is the tide of more than 700,000 people that visit Melbourne each day and is expected to reach one million by 2016. Just over half of these visitors come to the city for employment which means the remaining people visit the city each day for various activities that are therefore somewhat mobile and unpredictable. This makes scenario planning and communication with these people challenging. Having so many people come into the city each day means the potential scale of an event can be significantly amplified if it happens while these people are in the city and for example storms or transport disruptions mean they are unable to leave. This daily transience identifies the importance for the City of Melbourne to work with a range of stakeholders to ensure public awareness programs also reach those people visiting the city each day as well as those residing in it.

Another aspect of the city population is that approximately one third of the city's 85,844 residents are students. This skews the age profile slightly younger than average and also means a high level of annual turnover of city residents. Such turnover requires ongoing public education regarding climate change risks and responses. As many students are international this adds a cultural dynamic to any communications program.

### *Recommendations*

40. That local government be involved in community engagement on adaptation action.
41. That the impacts on transient and visitor populations be incorporated into planning for emergency and major climate events.

## **5.1 Managing our water resources**

- **How can we build on the Government's Water Plan to secure Victoria's water future, by using water differently as individuals, households, communities and businesses?**

### *Comments*

Managing our water resources requires a broad range of demand and supply measures. While significant reductions in consumption in recent times have been achieved, this may also mean the 'low hanging fruit' of water savings have been addressed and, with an increasing population, further savings may be challenging.

The State government and the water sector are working to secure Melbourne's future water supply through the implementation of major augmentation projects including the Victorian Desalination Plant. However, a focus must be maintained on providing a combination of decentralised and centralised water management solutions that ensure resilience to future climate conditions. Ways of combining existing centralised water infrastructure with new, decentralised systems at a range of scales need further development and exploration.

Water sensitive urban design (WSUD) and stormwater harvesting are two areas that can provide high value adaptation measures and play an important role in securing Victoria's water future. The Victorian Government's urban planning policy for Melbourne, Melbourne 2030, is committed to water sensitive urban design and this policy recognises stormwater quality as important to the health of Victoria's waterways. However, the widespread adoption of water sensitive urban design (WSUD) and stormwater harvesting needs to be advanced and there are many knowledge gaps that must be addressed. Methods for assessing the impacts of climate change variability on the design and performance of water harvesting systems need to be explored along with the benefits these systems provide for the urban micro-climate.



**Recommendations**

42. That a combination of decentralised and centralised water management solutions be pursued.
43. That stormwater harvesting and water sensitive urban design (WSUD) be advanced as a means of better utilising water resources.

**5.3 Adapting to change in the built environment**

- **What are the critical areas the Government needs to address in relation to adapting our urban built environment and infrastructure to climate change?**

**Comments**

A comprehensive review of current building codes is required to identify vulnerabilities within current regulations needs to be undertaken. Amendments to regulations then need to be undertaken to reduce the vulnerability of buildings and infrastructure in the future. The planning system also needs to consider holistically the effects of a changing climate of the built environment (including the effects of greater wind speeds, evaporation rates, heat waves and flooding) and how these are best managed in future. A review of planning codes and how they are able to accommodate future needs is required. In undertaking such reviews, a long term perspective is required as most of the elements that comprise the built environment have life spans of 50 – 100 years or more.

Scenarios need to be modelled now for the most likely future conditions. These will need to be agreed and then used as a reference to set the context for design controls and guidelines on how we build our cities today, for the future. In particular detailed sea-level rise modelling for coastal areas needs to be undertaken as a priority to facilitate planning and the undertaking of adaptive measures to protect public assets against the predicted sea level rise of 59cm by 2020 and 80cm by 2100.

**Recommendations**

44. That a comprehensive review of building and planning codes be undertaken and necessary amendments made to ensure buildings and infrastructure is capable of withstanding the expected long term effects of a changed climate.
45. That modelling of expected sea level rises be undertaken and that the results of the modelling be incorporated in future planning decisions.

**5.4 Building responsive emergency services**

- **What are the critical steps the Victorian Government can take to ensure that we are prepared and can respond quickly and effectively to deal with increasing extreme weather events?**

**Comments**

The capacity of the health services to cope with climate related incidents must also be a priority for adaptation by State Government because there will be increased pressure on emergency services due to injuries as a result of extreme events. Currently, hospital emergency facilities and mental health services are operating at their maximum capacity. This issue needs to be addressed as a priority in order to ensure that the emergency services are adequately equipped to deal with the emergency fallout that can result from extreme weather events.

There is also a growing shortage of residential aged care services with a significant waiting list. Unless this shortage is addressed, this may lead to growing numbers of aged residents receiving long term care in the home, which can increase the challenges of reaching this vulnerable population in response to a climatic event such as an extreme heatwave.

**Recommendations**

46. That the capacity of health services to cope with climate change incidents be addressed.
47. That the availability of aged care and capacity to deal with the effects of heat waves on the elderly be addressed.

## **5.5 Health and Wellbeing in Climate Change**

- **What help does your community need in adapting to the possible health impacts of climate change?**

### ***Comments***

State Government action on adaptation action relating to health and climate change health risks should be developed in consultation with Local Government.

The most significant health impact for Melbourne is the likely increased levels of heat stress and death caused by extreme temperatures. Research undertaken by City of Melbourne indicates that Melbourne's heat related deaths in those aged over 65 are expected to rise from the current 289 deaths per annum to 582-604 by 2020 and 980-1318 by 2050. The homeless have also been identified as being particularly vulnerable.

Deaths and injuries due to storm damage and flash flooding are also a concern in a changing climate. Less concerning, but still significant, risks are the potential for food borne disease in the warmer conditions, and the increased maintenance costs to support assets and infrastructure under the more extreme heat conditions.

Priority adaptation measures need to focus on increasing passive cooling efficiency of the city to reduce the heat island effect including through the reintroduction of water into the urban environment through Water Sensitive Urban Design. City of Melbourne regards the quality and availability of open space facilities as vital component contributing to the wellbeing, health and activity levels of residents in the municipality. Measures to reduce the city temperature both inside buildings and at street level can provide considerable benefits to reducing overall exposure.

The impact of prolonged drought and water restrictions on trees has been dramatic with significant and widespread stress and weakening among trees. Sports fields have also been affected by watering restrictions, with organised activity being restricted. City of Melbourne is investigating solutions such as more drought resistant turf and also artificial turf to enable ongoing high levels of organised sports. Loss of social cohesion due to the inability to fully utilise sports grounds and public spaces because of declining quality due to lack of water is a concern. The future management of our water supply needs to plan adequately to address the needs of our public spaces in times of water restrictions.

### ***Recommendations***

48. That Local Government be engaged in the development of actions on climate change adaptation relating to health.
49. That focus be given to the effects of heatwaves, storm and flooding events, food borne diseases.
50. That priority be given to passive cooling and reduction of heat islands in urban areas, focusing on the reintroduction of water in urban areas and availability of open space.

## **Appendix A - City of Melbourne's Climate Change Policy Context**

The City of Melbourne's strategic policy is set out in its Council Plan. This in turn has drawn on the Future Melbourne Community Plan. Future Melbourne was developed in a collaborative manner through wide ranging and ongoing open public engagement with the community and the strategic environmental objectives for the city are set out in the 'Eco-city' section. 'Eco-city' identifies the following goals:

1. Zero net emissions city
2. The city as a catchment
3. Resource efficient
4. Adapted for climate change
5. Living and working in a dense urban centre.

Council's main primary strategies for achieving these goals are:

### ***Zero Net Emissions by 2020 – Update 2008***

This strategy outlines an ambitious set of goals to achieve significant greenhouse gas reductions focussed on the commercial sector, residential sector, passenger transport emissions, and decarbonising the energy supply. Implementation projects include engagement with the residential and commercial sectors and the pursuit of increased capacity for renewable and low-carbon distributed power generation in the municipality. In the commercial sector the City's 1200 Buildings program aims to catalyse the retrofit of 1200 commercial buildings to achieve energy and water consumption savings.

### ***Climate Change Adaptation Strategy***

The strategy provides an integrated assessment framework comprising a risk assessment, adaptation measures and actions for managing the risks from the impacts of four predicted extreme climate change scenarios for the municipality:

- reduced rainfall and drought;
- extreme heatwave and bushfire;
- intense rainfall and wind storm; and
- sea level rise.

### ***Total Watermark –City as Catchment***

The strategy envisions Melbourne as a water sensitive city that utilises the artificial city catchment (including roads, roofs and impermeable surfaces) to minimise mains water consumption, reduce wastewater generation and lessen the impact of stormwater discharges.

### ***Waste Management Strategy***

This strategy identifies the municipality's strategic direction in sustainable waste management until 2020. The document seeks to improve waste management practices and reduce waste generation in four key areas. These are: council operations, residents, businesses and employees and visitors to the city.

**FINANCE ATTACHMENT**

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**COUNCIL SUBMISSION TO THE VICTORIAN CLIMATE CHANGE GREEN PAPER**

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There are no significant financial implications arising from the recommendation.

**Phu Nguyen**  
Acting Manager Financial Services

LEGAL ATTACHMENT

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**COUNCIL SUBMISSION TO THE VICTORIAN CLIMATE CHANGE GREEN PAPER**

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No direct legal issues arise from the recommendation from management.

Section 3C(2) of the *Local Government Act 1989* provides that, in endeavouring to achieve the best outcomes for the local community, Council must have regard to the following facilitating objective:

*“(a) to promote the social, economic and environmental viability and sustainability of the municipal district;”*

**Kim Wood**  
Manager Legal Services