

AUSTRALIAN INSTITUTE OF  
LANDSCAPE ARCHITECTS

ACT GROUP



Australian Institute  
of Landscape Architects

Submission to the Commissioner for  
Sustainability and the Environment  
for the  
Investigation into the Government's Tree  
Management Practices and the Renewal of  
Canberra's Urban Forest

Friday 12 March 2010

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12th March 2010

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Dear Commissioner Cooper,

**RE: INVESTIGATION INTO THE GOVERNMENT'S TREE MANAGEMENT PRACTICES AND THE RENEWAL OF CANBERRA'S URBAN FOREST**

The Australian Institute of Landscape Architects (AILA) ACT Group welcomes the opportunity to comment on the above investigation, as per public invitation issued 18<sup>th</sup> December 2009.

The AILA is the peak professional body for Landscape Architects in Australia. Founded in 1966, the Institute currently represents the interests of approximately 3,000 landscape architects throughout the nation. The profession is committed to the creation of meaningful and enjoyable outdoor places and to the sustainable management of our built and natural environment.

AILA ACT considers that the matters under investigation by the Commissioner in relation to the ACT Government's tree management practices and the renewal of Canberra's urban forest should be addressed within the context of broader sustainability challenges.

Landscape provides the fundamental support system for life on earth, and our attitude to it shapes the wider environment in physical, economic, social and cultural terms.

In this context, it is important to recognise that decisions made around how we value, manage and invest in Canberra's urban forest directly impact on broader sustainability outcomes at local, regional and national scales.

Within the terms of reference of this investigation, there is an urgent need to articulate the "triple-bottom-line" of urban landscape performance – in this case, Canberra's urban forest - in terms of its contribution to the economic, environmental, and social/cultural conditions which form the fundamental framework necessary for long-term human well-being (refer Appendix A for further explanation).

In order to do this effectively, new ways of looking at landscape are required. This submission will address the terms of reference of Canberra's urban forest investigation in relation to examining how *revealing, enhancing and regenerating landscape values can support broader sustainability outcomes*.

## TERMS OF REFERENCE:

### 1. “The scope and efficiency of any enhancement that may be required to the Government’s existing tree management programs.”

ACT Parks Conservation and Lands, in concert with the consultant arborists of Canberra, are managing the urban forest for the interests of the community and the continuation of the urban forest.

However, management programs currently in place for Canberra’s urban forest are facing increasing pressures in relation to broader sustainability issues – including activity & usage impacts linked to population growth, changing climate regimes, diminishing water availability and declining maintenance budgets. The fact that a large proportion of the major canopy trees in the urban forest are also approaching maturity and/or senescence at the same time further exacerbates these challenges.

Existing management programs need to be adapted to accommodate renewal and regrowth of Canberra’s urban forest, and to move towards an urban forest structure that more closely approximates a ‘natural’ forest structure, comprising a range of plant communities in different stages of growth and decline over much longer overall timeframes.

A planned and gradual process of replacement and renewal throughout the urban forest will result in less disturbance to the quality of the streetscape and a more manageable urban forest for the future. Such a process necessarily requires long-term planning, guided by a long-term vision.

AILA proposes that the ACT government develop a “*Vision for the City*” to guide the ongoing management & renewal of Canberra’s urban forest. The development of this vision for the city will require landscape master plans to be developed on a number of levels, particularly:

- City wide strategy
- Connections across the city
- Suburb level strategy
- Street level strategy

As each level of the *Vision for the City* is developed, it will be necessary to engage the community to debate, consider, modify and adopt the landscape master plans.

The plans must also be linked to an integrated “*Sustainable Urban Form*” strategy for guiding the integrated development of buildings and landscape throughout the city in relation to broader sustainability objectives.

The *Sustainable Urban Form* strategy will need to acknowledge and support the contribution of landscape and tree planting within the private realm as well as the public domain to overall urban forest integrity, and to facilitate its continuance. This will also require a reassessment of existing *ACT Design Standards* to ensure appropriate resourcing, adequate spatial allocation and optimum growth conditions for urban trees, both now and into the future.

The *Australian Landscape Principles*, (<http://www.aila.org.au/landscapeprinciples/> - discussed further in sections 6 & 9 of this submission) can be used to guide the development of Canberra’s *Sustainable Urban Form* strategy, and ‘green infrastructure’ approaches to city planning can be employed as part of this, to significantly leverage existing landscape performance values across economic, socio-cultural and environmental spheres. (refer <http://www.aila.org.au/greeninfrastructure/> for more information on how green infrastructure strategies can provide a framework for improving connectivity, multifunctionality and landscape performance outcomes in the built environment across a range of landscape scales).

The AILA ACT Group is willing to offer the collective experience and expertise of its membership base to assist government and planning authorities in implementing such approaches within Canberra’s urban environment, and would welcome the opportunity to contribute in this capacity.

## 2. “The benefits and drawbacks of considering funding for urban tree programs separately to climate change initiatives.”

Funding for urban tree programs should always be considered as part of a broader response repertoire to climate change adaptation, because urban landscape performance is an integral component of overall built environment adaptive capacity.

However, management of Canberra’s urban forest in relation to climate change initiatives should also be viewed within the context of broader regional and national sustainability objectives – such as those set out in the *Sustainable Urban Form* strategy - and should be funded and supported accordingly.

An integrated *Sustainable Urban Form* planning strategy – *i.e. one which focuses on integrated landscape and building design approaches* - can enhance overall urban ecosystem functionality, and enable both buildings and urban landscapes to contribute positively to broader environmental processes affecting air and water quality, energy use and biodiversity.

There is an inherent risk in linking funding for urban tree programs only to climate change initiatives, in that management focus may subsequently prioritize a limited range of landscape performance issues – e.g. carbon sequestration potential or bushfire & public risk management – over more complex, less ‘tangible’ or easily quantifiable landscape values – such as the linkages between spatial landscape quality and physical and mental health, community identity, social opportunity, and cultural and spiritual expression. Outcomes relating to these vital aspects of human well-being are significantly influenced by the quality of our access to, and interaction with, high-quality urban landscapes – and deserve equal consideration and weight in decision-making and funding support.

## 3. “Improved notification and consultation processes to support greater community involvement in urban tree planning and management, including risk mitigation, tree removal and planting.”

It is apparent that there is a significant level of unease about the perceived lack of community consultation in the decision-making processes affecting Canberra’s urban forest – as voiced in recent community consultation forums associated with this investigation.

Part of the problem is that historically, the Canberra community has no previous experience of the natural decline phase of the urban forest renewal process. Most of Canberra’s trees were planted in one of two main planting periods (*i.e.* pre 1930, or between 1955 – 1975). Consequently, many of those trees are ageing and reaching the end of their life simultaneously.

A ‘natural’ forest structure accommodates a wide range of trees and vegetation communities, which exist in various phases of growth and decline over cumulative and overlapping time periods, often spanning centuries.

There is a need for greater engagement with the community to foster increased understanding of the need to ‘normalise’ the Canberra urban forest towards a more diverse range of species and plant communities over a longer timeframe – especially in terms of renewal and regrowth planting programs.

The public engagement for Canberra’s urban forest renewal requires a number of elements, including:

- Education of the Canberra community on the need for ongoing urban forest renewal
- Articulation and development of a “*Vision for the City*” to guide this process
- Integration of the vision within a broader “*Sustainable Urban Form*” strategy
- Adoption of the vision and understanding the implications of change
- Respecting the tree managers and expert arborists involved in decision-making
- Participation in the planning process
- Agreement with the planned actions
- Acceptance that removal and renewal of trees will be part of the planned actions, and
- Acceptance that the planned actions will prioritize the overall community benefit of the urban forest over individual self-interest.

There are also opportunities to improve community engagement in the design and management of the urban forest. AILA is currently working with CABE Space (UK Commission of Architecture and the Built Environment) and the Parks and Leisure Association of Australia (PLA) to introduce community consultation tools such as 'Spaceshaper' (<http://www.cabe.org.uk/public-space/spaceshaper>) into urban landscape planning processes.

*Spaceshaper* is a practical toolkit for measuring the quality of a public space (including capturing the views of managers as well as users of the space) before investing time and money in improving it. It provides a baseline for measuring green infrastructure spatial quality against social, economic and environmental performance indicators, within an integrated community consultation process for ongoing management and decision-making.

At present AILA is exploring the potential for introducing *Spaceshaper* for use in Australia via a series of pilot projects, and would be happy to advise & assist the ACT government with regard to potential adaptation & implementation of this tool as a component of the future planning and management of Canberra's urban forest.

#### 4. "The priority given in tree management decisions to environmental values, solar access and the retention of communities of trees in parks."

A wide range of social, economic and environmental values associated with the urban forest entity must be weighed in management decision-making. These include many more landscape-value-based considerations than the three issues listed above, and all must be considered in relation to their contribution to broader sustainability outcomes.

Above all, it is important to plan, design and manage the urban forest within an integrated decision-making framework – one which is capable of accommodating assessment of urban forest issues in relation to overall city sustainability objectives, so as to enable informed 'tradeoffs' in decision-making.

A well-articulated *Vision for the City* and associated landscape masterplans, developed within the context of an integrated *Sustainable Urban Form* strategy, would greatly improve management and decision-making relating not only to urban forest issues, but also many other aspects of city sustainability.

One area of urban forest management decision-making which is often inadequately addressed is the significance psychological influence which landscape components can exert upon our 'sense of place' – that is, the way in which the landscape character of the places where we live, work and play can either support or erode our perceptions of community safety, identity and 'belonging', and enhance (or reduce) opportunities for social and cultural expression.

Recent displays of community outrage at proposed tree removals in local Canberra neighbourhood areas demonstrate the difficulties urban forest managers face in managing such particularly sensitive aspects of landscape value.

Improved community education and landscape value assessment processes - as proposed by the *Australian Landscape Principles* – can assist in redressing this imbalance, as can the introduction of community-based spatial quality assessment tools such as *Spaceshaper*.

#### 5. "The sustainable reuse of timber from felled trees"

The re-use of timber from felled trees should be planned and managed as part of a broader response repertoire, in relation to overall sustainability objectives. Resource provision, management and re-use goals for material aspects of Canberra's urban forest need to be set at metropolitan level (in relation to territory & regional sustainability goals), then goals established at suburb, neighbourhood and individual streetscape level in relation to those.

In such a context, decision-making will necessarily be responsive to the particular site and community context, as well as broader sustainability objectives.

**6. “When replanting should occur following the removal of trees, the scope for pre-planting, and principles for the number and species of trees that should be replanted”.**

The *Australian Landscape Principles* (<http://www.aila.org.au/landscapeprinciples/>) were developed by the Australian Institute of Landscape Architects (AILA) to assist government and other organizations in decision-making on landscape issues such as those above.

They articulate an ethical decision-making framework for landscape planning, design and management within the built environment. Their purpose is to strategically direct landscape interventions – both in our existing and future built environments – towards more sustainable, holistic outcomes.

The *Landscape Principles* are as follows:

- Value our Landscape
- Protect – Enhance – Regenerate
- Design with Respect
- Design for the Future
- Embrace Responsive Design

(refer <http://www.aila.org.au/landscapeprinciples/> for detailed explanation of the purpose and intent of each Principle)

The *Landscape Principles* can be used to derive strategic goals for management of Canberra’s urban forest by overlaying them as a decision-making tool across the broad spectrum of landscape practice, and at a range of landscape scales, against a series of measurable components of landscape performance or ecosystem services provisioning (including vegetation, soils, water, materials and human health and wellbeing).

The AILA ACT group would be willing to assist the ACT govt. and planning authorities to implement the *Australian Landscape Principles* within the strategic management and planning of Canberra’s urban forest – including the development of a *Vision for the City* as part of an integrated *Sustainable Urban Form* strategy - and would welcome the opportunity to discuss further how they might be most effectively implemented in this context.

Two other particularly useful references for principles-based management of urban area planning with a focus on sustainability outcomes are:

- *The Ecologically Sustainable Development (ESD) Principles* (Appendix B)
- *The Melbourne Principles for Sustainable Cities* (Appendix C).

**7. “The need for enhanced management to maintain the survival and good health of trees.”**

The urban forest is composed of more than just the trees, and management approaches need to move beyond this thinking.

Planning, design and management of the urban landscape requires an understanding of the functionality and performance of the built environment as a total system.

It involves far more than simply arranging and maintaining ‘green stuff’ – the trees and vegetation – it includes considering the impacts of human activity on soils, water, vegetation, biodiversity, materials and energy use, as well as how we understand, value and interact with our environment over time.

We must begin to consider how we manage Canberra’s urban landscape systems in a more comprehensive manner, beyond a model which merely aims to reduce resource use and minimize the damage to existing ecosystems.

What is required is a new approach to urban forest management which aims to proactively enhance and regenerate natural resources, in order to support broader social, economic and environmental outcomes.

We must also begin to appreciate the hitherto untapped potential of all components of urban landscape - both within and beyond the public realm – to perform as part of a cohesive urban ecosystem which contributes to broader social, economic and environmental outcomes.

Understorey and groundcover vegetation are critical components of the urban forest which function together with trees as part of a complex, dynamic urban ecosystem, and the structural integrity and connectedness of a range of vegetation types across the whole urban forest is also important in relation to overall biodiversity values and optimum ecosystem services provision.

There is scope for examination of a range of initiatives to improve the structural integrity and resilience of the urban forest by exploring options for groundcover and understorey planting (including temporary, ephemeral and succession planting strategies), especially in areas where mature trees have reached senescence and require removal.

Management and regeneration strategies within the urban forest should wherever possible mimic natural ecological processes. For example, where space opens up in a mature 'natural' forest canopy through ageing and decay of larger, long-life canopy species, opportunities arise for a range of understorey plantings with shorter life spans to emerge, providing shelter & advantageous microclimate conditions for juvenile canopy trees during their more vulnerable early growth stages. A wide range of native flora and fauna have evolved to opportunistically exploit this temporal variety of food and shelter provision within the structure of a natural forest, and effective management to mimic such processes can significantly enhance urban biodiversity outcomes and ecosystem resilience.

Integrated approaches to urban forest management have the potential to offset some of the current challenges posed by insufficient resource allocation and 'silo-based' management strategies, offering potential for increased carbon sequestration, stormwater infiltration, heat island amelioration, reduced maintenance and replacement costs for failed plantings due to adverse weather events & suboptimal water allocation, to name just a few.

**8. “Appropriate safeguards to ensure contractors follow best practice and adhere to Government tree policies.”**

Whatever happens at the farthest ends of the operational chain of management – i.e. the contractors who are responsible for 'hands-on' influence maintaining and enhancing the physical integrity of our urban forest assets – must first be directly linked to the broader strategic goals which drive planning and management decision-making at higher levels.

More effective management and operational procedures within the urban forest at the farthest reaches of practice can only ensue if broader strategic goals are referenced in an integrated manner throughout the design and management decision-making network.

The incorporation of an ethically-based decision-making framework (e.g. the *Australian Landscape Principles*), - integrated across all levels of urban forest management strategies and processes - would ensure a robust basis for delivering more effective quality control measures across a range of implementation scales.

To do this most effectively, the *Landscape Principles* would need to be referenced as strategic guiding principles to inform the development and application of all policy and operational instruments relating to the planning, design and management of the urban forest. This would establish a consistent basis for identifying gaps in current knowledge and practice which could then be used to inform the development/revision of trade and industry-specific management and operational guidelines - including ongoing educational and training opportunities – and all aligned with common goals relating to broader sustainability imperatives.

**9. “Principles for the decision-making process where it is proposed that a tree is removed or is retained.”**

Refer to discussion point (7.) above. When an ethically-based decision-making framework such as the *Australian Landscape Principles* is used to underpin strategic response to specific urban forest management issues, all values (economic, socio-cultural and environmental) can be considered and weighed in order to derive solutions which best meet sustainability goals at the applicable scale of inquiry.

Site-specific solutions relating to tree removal or retention will necessarily involve a case-by-case decision-making process, referencing all of the related issues in an integrated manner, appropriate to the complexity of the urban ecosystem processes under consideration in any given particular context.

**10. “Improvements to the Tree Protection Act or other relevant Acts in light of the above matters.”**

The AILA ACT Group sees the Tree Protection Act as performing a valuable role in the preservation of the existing tree canopy in urban Canberra. However, in many cases the Act is reacting to a piecemeal, or opportunistic, redevelopment pattern of established urban areas.

The AILA ACT Group would welcome a broader scope to the Tree Protection Act, to enable assessment of suburb-wide or precinct-wide redevelopment patterns (e.g. for A10 zones, or suburbs such as Braddon and Dickson at present). ACT Government Agencies could then input into Section-wide replanting strategies - which examined alternatives to block by block consolidation - to propose a ‘Section Master Plan’ that might redraw lease boundaries to isolate key trees, (in much the way that new subdivision planning isolates pockets of remnant vegetation into urban open space or pocket parks).

The current planning regime and Tree Protection Act tends to isolate large trees in inaccessible pockets of private space, often rendering the spaces unsuitable to the residents adjacent to the tree, and in many cases not necessarily providing a viable landscape space (leading to premature loss of the tree).

If the scope of the Tree Protection Act could be extended in this way, the risks of producing such perverse outcomes would be greatly reduced.

**11. “Resource implications associated with an enhanced program.”**

As outlined in Appendix A, the regenerative value of the urban landscape (especially in relation to ecosystem services provision) needs to be articulated and included in budgeting and resource-allocation decision-making.

Asset value establishment and whole-of-life accounting also needs to be incorporated (as per the ESD principles in Appendix B).

At a government level, a range of measures for encouraging investment in urban forest management and restoration can be implemented, including:

- Focusing fiscal measures on strategic incentives for enhancing and supporting green infrastructure potential – e.g. conservation-based land ‘banking’ schemes, community title arrangements, public/private partnerships, landscape contribution credits/offsets etc.
- Tailoring existing funding capacity and structures towards ‘value-added’ development, including promoting best-practice examples of economic advantages of urban-landscape-based projects.
- Setting targets for urban forest restoration and establishment, and integrating social and economic indicators into this context.

At a community level, initiatives could include:

- Rates-based incentives for nature strip planting and street tree maintenance
- Rate rebates for maintenance of heritage trees on private land
- Basic infrastructure provision for community gardens and urban agriculture initiatives – including access to Council-controlled recycled water networks within appropriate guidelines.
- Incentives for increased community input to management of urban open space – (viz. the active Finn Street, O’Connor group who have contributed to the master planning of the Finn Street Sensory Garden, through input at planning stage, continued contributory maintenance, and production of artworks for inclusion in the redeveloped Finn Street Play Space).

#### **WAYS FORWARD – Key Recommendations:**

- Ongoing management and renewal of the Canberra urban forest requires a “*Vision for the City*”.
- This vision should be developed via a collaborative, consultative process - engaging landscape & urban design professionals, managers, government and the community to debate, consider, modify and adopt a “*Vision for the City*” that will guide the future health and integrity of the Canberra urban forest for the next generations of Canberrans.
- A critical first step for evaluating landscape performance value in order to assist this process is to develop a framework for the mapping, design and integrated management of Canberra’s urban forest as part of a broader ACT “*Sustainable Urban Form*” strategy.

The Australian Institute of Landscape Architects (AILA) ACT Group would like to thank the Commissioner for the opportunity to contribute to this investigation, and also to offer the expertise and experience of our collective membership base in developing new ways forward for the planning, design and management of Canberra’s urban forest.

Please don’t hesitate to contact us if you have any queries relating to the issues raised in this submission, or if there are any other matters relating to the investigation on which we might be able to provide further assistance.

Yours sincerely,



**Michael Reeves**  
(President, AILA ACT Group)

#### **ACT Group Representatives**

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## **APPENDIX A: Urban Landscape Value - The Triple-Bottom Line**

### **THE ECONOMIC PERSPECTIVE:**

Landscape plays a vital role in supporting healthy, functioning environments, especially in relation to the significant value of the ecosystem services it provides (i.e. the 'free' services provided by the ecological processes of healthy landscape systems that clean our air and water, pollinate plants, filter and recycle nutrients, modify our climate and enhance potential for human well-being through contemplation of, and interaction with, the natural environment).

To date, the contribution of this previously uncounted landscape value has been largely ignored in urban land-use and management decisions, and is only just beginning to surface in terms of economic analysis of the impacts of climate change. It is vital that we address this situation. We must begin to advocate not only the intrinsic value of landscape, but also promote a deeper understanding of the actual value of ecosystem services for which nature ultimately holds us to account.

Our urban land management funding and management support mechanisms must reflect the significant economic value contained within our existing and future urban landscape asset base, and be structured in a manner which enables its functional viability for ongoing regenerative resource provision.

### **THE ENVIRONMENTAL PERSPECTIVE:**

Current approaches to urban landscape management, especially in relation to climate change adaptation and sustainability strategies, are primarily focused on the same issues as buildings – i.e. reduction of energy and water usage. However, such approaches fail to recognise that landscapes (both built and natural) are fundamentally different from buildings in that (a) they typically consume less energy, both in construction and operation, and (b) they also have the unique, inherent capacity to enhance and regenerate natural resources.

A truly 'sustainable' urban landscape (i.e. one which is designed and managed against broader long-term sustainability outcomes) can provide a range of valuable ecosystem services which actually improve environmental quality rather than simply minimize the damage to natural systems.

On a practical level, we need to develop ways to assess and measure the value of ecosystem services preserved or increased through sustainable site practices. In this sense, active landscape management for sustainable outcomes can become a pro-active strategy for addressing the challenges posed by climate change, as well as a potent tool in mitigating the adverse effects of such change.

### **THE SOCIAL/CULTURAL PERSPECTIVE:**

Whatever terminology we use to define the realm of human social and cultural interaction with the environment, (e.g. 'community', 'local identity', 'sense of place', 'beauty', 'aesthetics' etc.) there is a growing understanding of the linkage between human wellbeing and our sense of connection with the natural world. Emerging research relating to the restorative and regenerative power of landscape in human health is an area rich with possibility for urban designers, especially in view of the potential implications of climate change for human health outcomes.

The same processes at the heart of global ecological degradation (namely the consumptive nature of development and the global economy) also threaten our ability to flourish mentally and spiritually to our full potential, particularly within the urban context – which for the first time in history is now home to more than half the world's population.

Our built form has become the most common landscape we rely on to support a broad spectrum of human physical and social needs. Clearly there is an urgent need to ensure that such landscapes are planned, designed and managed within a much more holistic framework in order to maximize the potential for human flourishing in all its richness and complexity.

## APPENDIX B : Ecologically Sustainable Development (ESD) Principles

Ecologically sustainable development (ESD) means using, conserving and enhancing our natural resources so that ecological processes on which life depends, are maintained, and the total quality of life, now and in the future, is improved. ESD improves the total quality of life for those of us alive now and also for future generations.

Ecologically sustainable development requires the effective integration of economic and environmental considerations in decision-making processes. Ecologically sustainable development can be achieved through the implementation of the following principles and programs:

- (a) **the precautionary principle** - namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

In the application of the precautionary principle, public and private decisions should be guided by:

- (i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and
  - (ii) an assessment of the risk-weighted consequences of various options,
- (b) **inter-generational equity**, namely that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations,
- (c) **conservation of biological diversity and ecological integrity**, namely that conservation of biological diversity and ecological integrity should be a fundamental consideration,
- (d) **improved valuation, pricing and incentive mechanisms**, namely that environmental factors should be included in the valuation of assets and services, such as:
- polluter pays - that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,
  - the user of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,
  - environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

**Excerpted from:** *New South Wales Department of Local Government. Environmental Guidelines: State of the Environment Reporting by Local Government – Promoting Ecologically Sustainable Development, December 1999. [Appendix B (Sustainability guidelines for decisionmakers) and E (Legislation relating to environmental activities of councils)] Available for download at:*

[http://www.dlg.nsw.gov.au/dlg/dlghome/dlg\\_DocumentsIndex.asp?sectionid=1&documenttype=10](http://www.dlg.nsw.gov.au/dlg/dlghome/dlg_DocumentsIndex.asp?sectionid=1&documenttype=10).

## APPENDIX C : Melbourne Principles for Sustainable Cities

*The Melbourne Principles for Sustainable Cities* were developed by over 40 experts from around the world at a meeting organised by the United Nations Environment Programme (UNEP) International Environmental Technology Centre and the Environment Protection Agency, (EPA) Victoria. They were designed to provide guidance for cities on the components of sustainability/sustainable development, as well as to develop a foundation on which to integrate programs across various levels of government.

The principles are as follows:

- **Principle 1** – Provide a long-term vision for cities based on: sustainability; intergenerational, social, economic and political equity; and their individuality.
- **Principle 2** – Achieve long-term economic and social security.
- **Principle 3** – Recognise the intrinsic value of biodiversity and natural ecosystems, and protect and restore them.
- **Principle 4** – Enable communities to minimise their ecological footprint.
- **Principle 5** – Build on the characteristics of ecosystems in the development and nurturing of healthy and sustainable cities.
- **Principle 6** – Recognise and build on the distinctive characteristics of cities, including their human and cultural values, history and natural systems.
- **Principle 7** – Empower people and foster participation.
- **Principle 8** – Expand and enable cooperative networks to work towards a common, sustainable future.
- **Principle 9** – Promote sustainable production and consumption through appropriate use of environmentally sound technologies and effective demand management.
- **Principle 10** – Enable continual improvement, based on accountability, transparency and good governance.

The principles can be downloaded, along with an elaboration of each, at:

[http://www.iclei.org/fileadmin/user\\_upload/documents/ANZ/WhatWeDo/TBL/Melbourne\\_Principles.pdf](http://www.iclei.org/fileadmin/user_upload/documents/ANZ/WhatWeDo/TBL/Melbourne_Principles.pdf)