



Green Space Alliance Discussion Paper 2017



This document has been prepared by contributing members of the Green Space Alliance.

September 2017



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image courtesy Evgenyatamanenko



PARKS & LEISURE
AUSTRALIA
(WA)



Turf Growers Association
of Western Australia Inc.



The Green Space Alliance is a voluntary group work group engaging stakeholders including government departments, local government and the community to help create a more liveable Western Australia.)

MEMBER ORGANISATIONS

Australian Institute of Horticulture WA
 Australian Institute of Landscape Architects WA
 City of Belmont
 Horticulture Media Association Australia WA
 Landscape Industries Association WA
 Perth NRM
 Parks & Leisure WA
 Sports Turf Association WA
 Tree Guild WA
 Turf Growers Association WA

OBSERVER ORGANISATIONS

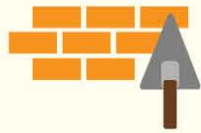
Food Future WA
 Nursery & Garden Industry Association WA
 The Dept of Water and Environmental Regulation
 The Dept of Local Govt, Sport & Cultural Industries
 Urban Development Institute of Australia WA
 Water Corporation

GREEN SPACE ALLIANCE

VISION

To live in a community that delivers benefits to all and improves liveability by...

URBANISATION ISSUES

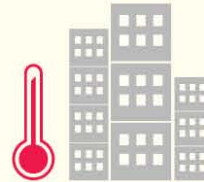


New suburban areas don't have

ADEQUATE SPORTING RESERVES

No green plot ratios for high-rise mean these

BECOME HOTTER



Tree cover is **DECLINING** across the metropolitan area despite innovative LGA's developing Urban forest initiatives.

REDUCTION IN HAPPINESS AND WELLBEING in our communities.



WATER for public fields is...

Water scarcity **COST MORE**



A DRYING CLIMATE in SW-WA reduces water resources



PREVENTION in communities



Green infrastructure has a role in **REDUCING HUMAN MORTALITY** from the heat Island effect.



Suburbs can be **5° cooler.**



Turf, urban forests, sports grounds, remnant bushland, home gardens, leafy shaded streets all **absorb heat and don't radiate it back.**



Green spaces and nature can have **MEASURABLE, POSITIVE EFFECTS** on human health, happiness and wellbeing.

Concrete, bitumen, artificial lawn and bricks **absorb heat and radiate it back, increasing ambient temperatures.**



GREEN

community that values green spaces at its core, which
fits to everyone through improved health, wellbeing and
using innovative water and urban planning solutions.

VALUES

WATER SUPPLY

Public open space including sporting
grounds facing reduced water allocations.

Supply options will
be put into the future.



Increasing
incidence of

Reduces
incidence of
**MENTAL
HEALTH ISSUES**

**MATURE AND
NECESSARY DEATHS**

Community from urban heat
and effects.

DE-CENTRALISED WATER TREATMENT

offers a supply to some new
suburban green sporting spaces.



Government in WA
is moving to embed

**MAJOR URBAN
PLANNING
INITIATIVES**

across all
departments.

IMPROVE HOSPITAL RECOVERY RATES

by making hospitals green.



Government to develop
Green Spaces
STRATEGY PLAN.



Western Australia
has nearly



**13,000
SPECIES OF PLANTS**

There is a WA native plant
species for every niche in
the landscape.

Perth is renowned for

**CLEAN
AIR AND WATER**
and

**RIVERSIDE
BEAUTY**



**Green spaces can
HELP OUR TOURISM
INDUSTRY.**

By giving us an **inviting, clean, cool,**
green and pleasant city, a place
for visitors to explore safely.

GREEN SPACE IS THE LINK TO IMPROVED LIVEABILITY

4



**Make WA more
ATTRACTIVE TO
THE WORLD.**

Green spaces, playing fields,
liveability and unpolluted air
make WA a **great place to
bring up a family.**



5



**Green spaces can
KEEP KIDS OUT
OF JAIL.**

Recreational/sporting
grounds and sports clubs
builds communities,
builds self esteem and
reduces juvenile crime.

6



**Green infrastructure can
REDUCE PEAK
DEMAND OF OUR
POWER SUPPLY.**

Turf, urban forests and all forms
of living greenery can help
**reduce the retained heat of
the built environment.**

Perth's vibrant green spaces are crucial to our health and way of life and they are at risk of being lost as they are increasingly being threatened by urbanisation and degradation. The growth of Perth places great pressure on land space and water resources, and as a result the provision of green space has become a major challenge.



Executive Summary

As stated within the *'A Discussion Paper Addressing How Urban Planning and Water Management Policy In Perth Impacts Liveability'*, it is a living document and will be reviewed and revised by the GSA on an ongoing basis in an effort to address the evolving manner of policy development and political will. To this extent the GSA wishes to acknowledge that Local, State and Federal Governments in the past two years have made more progress addressing the impacts of declining green space within the urban environment than has been accomplished throughout the past ten years.

Never before has there been such an urgent need for consistent data (evidence) and comprehensive research into the impact of rapid housing densification of our community and its direct correlation with the significant decline of green infrastructure in both the public and private realms.

Australian Conservation Foundation campaign director Paul Sinclair said in a statement *"Despite Australians' romanticisation of the outback, we are among the most urbanised populations on a planet where more people now live in cities than anywhere else"*.

The impetus of getting it right as we seek to provide for the well-being of the next three million urban Australians deserves a clear eyed and unvarnished stock of our situation. Australian cities currently enjoy having a reputation for being highly liveable, however we are cognisant that such corporate metrics often obscure some malign facets about the cost of living in our present circumstance will demand on future resilience.¹

One such cost of this market driven urbanisation has seen Perth communities reflect a growing disparity in social equality. The wealthy reside in leafy artfully designed green suburbs, that continue to attract residents earning well paid professions, and in turn expecting the best that government services and infrastructure can provide, while the lower to average income households are subjected to being driven to the 'affordable' city's fringes.

This push into Perth's fringes however continues to consume vulnerable habitats and precious native vegetated land and when this loss is added to the land clearing from infill development of backyards into larger house footprints and subdivision, the cumulative loss of green space is tragic.

Our cities need more naturally healthy green spaces and their inherent water requirements, not less, to stay liveable. More sporting fields, more amenity turf and parklands, more protected hubs of natural habitats linked by corridors of trees and plants for native flora and fauna to survive and coexist in the urban environment. The City of Perth has scored high in liveability awards, not too far behind Melbourne which has ranked number one in the world, five years in a row. Unsurprisingly adequate green infrastructure which underpins urban liveability is a key contributor to these rankings. Valuable assets such as Kings Park are historical legacies of its 19th century creators who were driven by a vision to provide for its people. However, the sad truth is if a city's green-scape resilience determines the liveability index, most of Australia's cities would fall well below the current top 20.

Urban vegetation has an important role in easing cumulative temperatures from the masses of man-made brick, concrete and bitumen heat sinks that combine to generate urban heat islands. This means that a city's public parks and sports fields; its remnant woodlands and wetlands, residential gardens, nature strips, street trees, green roofs, walls and rain gardens are all vital for maintaining its liveability.

As such, this greenery – collectively termed "urban green infrastructure" – provides a wealth of environmental, economic and health benefits to communities. By actively cooling the urban landscape, it helps reduce energy use and carbon dioxide emissions, and ultimately lessens the risk of residents suffering heat stress related illnesses.

The pivotal element to sustaining urban greenery is water, and all too often the response to past droughts and water shortages has been to firstly restrict water for green landscapes. Also, in preparing parcels of land for urban development, the perceived value of the sale lots often dominates any consideration for retaining and supporting avenues of remnant vegetation as well as adequate community determined green infrastructure. In an area threatened by sea-level rise, increased flooding and heat island effects, to allow development that exacerbates these issues is extremely short-sighted.²

¹ Ideas for Australia: City v4.0, a new model of urban growth and governance for Australia, April 20, 2016

² How green is our infrastructure? Helping cities assess its value for long-term liveability, November 13, 2015

Irrigating urban greenery should not be viewed as a “waste of water”, but rather as an investment in the long-term environmental and social benefits we and our children’s children will gain. Our cities need to capitalise on the full use of the abundant water available, rather than letting such high proportions run down the drain. Local and state governments around Australia have started to recognise this and are beginning to use water-sensitive urban design, which retains storm water run-off and provides an alternative to irrigating gardens with valuable drinking water.

Understanding green infrastructure’s value in providing resilience against flood damage and heat waves as well as the amenity and recreational needs of human health and welfare is essential. Unfortunately the amount of urban vegetation is still declining in Western Australia, as communities continue to sacrifice larger green open spaces for ineffective pockets of green randomly dotted within densely populated redevelopments. As one of the most urbanised countries in the world, Australia could benefit greatly from increasing the extent and quality of its urban green infrastructure.

Valuing the benefits of green infrastructure is complex. This is because each element provides multiple benefits covering some very different types of value. These benefits are public, private and intrinsic. Quality green open spaces contribute to communities’ physical and mental health and wellbeing. This has a result on indirect benefits to the medical system, improved personal happiness and satisfaction which stimulates economic productivity.

Western Australian communities are already trying to increase their green cover in innovative ways. Local governments strive to create beautiful natural spaces which improve air quality, create habitats for biodiverse wildlife, filter and harvest storm water runoff (rain gardens), and serve as noise buffers to busy city traffic and manufacturing districts.

Retaining and reusing runoff from roofs and impervious surfaces for green infrastructure use is a key element in water sensitive urban design, however it needs a shift in thinking away from our current model of just retarding and redirecting it away from our neighbourhoods and urban centres towards treatment plants and ultimately the ocean.

Like other cities within Australia, Perth is getting hotter. The reasons for this are many, including the undeniable effect of climate change, but also as a result of urban densification policies and real estate trends which determine smaller lots and larger housing footprints, leaving less space for cooling gardens and trees.³

This cash grab ideology of reducing house lots has been very popular in Perth, particularly in new developments along the metropolitan outer fringes. It also seems that the average Australian first homebuyer and less affluent householders are forced to seek affordable housing within these suburbs where the housing is packed tightly together and with fewer trees and less greenery. These communities usually only receive minimal investment in green infrastructure which then receive minimal maintenance. There is a strong correlation of these suburbs as being hotter suburbs. Urban heat is a known factor with regard to increased rates of injury, death and disease. The burden on these vulnerable householders is then compounded with the need of having to pay more for electricity to keep cool, increased healthcare expenses and reduced productivity.

Research conducted in Australia shows people who live in greener, leafier suburbs tend to be healthier and wealthier. Leafier suburbs tend to increase residents’ wellbeing, participating in physical activities and social interactions, creating dynamic and happier communities.

At the 2017 Green Building Day, a point of discussion was that the choice of building materials and colours need to consider moderating the occurrence of stored and reflected heat, trees and lawn can only do so much. We would advocate that stronger guidance about albedo rates of different materials and surfaces and their thermal conductivity is required.

Recent studies within Perth, found that properties that retained trees on the street verge and a healthy lawn in its front or back yard increased its median value by more than 8% on average across most metropolitan suburbs.⁴ Another interesting benefit discovered in the same study was that street trees reduce a property’s average time on the market by 1.7 days.

³ Out in the heat: why poorer suburbs are more at risk in warming cities, October 14, 2016

⁴ Pandit (2012) “The effect of street trees on property values in Perth WA” & <http://www.tgawa.com.au/pdf/real-estate-survey.pdf>

⁵ How green is our infrastructure? Helping cities assess its value for long-term liveability, November 13, 2015

Local government authorities are on the front line with these issues. They carry the major burden of responsibility for developing and maintaining neighbourhood environments. Over the last few years, some councils have considerably increased spending on park renewal by installing rain gardens to slow runoff, water capture, recycling and urban forest strategies.⁶

We advocate for public and commercial education campaigns about the benefits of urban greening and better urban design guidelines to make it easier for developers and community groups to increase their community's greening. Better knowledge about species selection is needed to reduce maintenance issues. Additionally, we would advocate that the Building Code of Australia be reassessed in the light of climate change challenges and that would also respond to the problems faced within less greener communities and their need to combat heat island effects.

Perth communities need comprehensive plans to guide urban transformation away from land-clearing infill developments that leave them hard surfaced heat sinks, devoid of green. We need clear regulation and guidance to preserve and extend green space especially within private land ownership, as half of urban vegetation resides within private hands.

The need to move beyond our outdated and short sighted dogmatic concept of urbanisation and housing development is long overdue. Urban greening can go a long way to help the implementation of a low-carbon economy strategy in our urban systems by reducing our outsized consumption of natural resources. The City of Perth is doing its best to reduce the use of fossil-fuelled automobiles by drastically reducing carpark bays within the city and promoting public transport and active travel modes.

We advocate the multiple benefits that can be created by converting under utilised road reserves and similar spaces into parklands or green / biodiversity corridors. It is imperative that we reduce the metropolitan dependence upon cars by improving access to public transport networks and active travel modes. A complete societal shift may be required to re-socialise our neighbourhoods. This could involve coordinated planning efforts that would better distribute the population, backed by active facilitation of employment and asset investment.

All levels of Government need to develop an urgency with regard to rethinking housing options and ways to achieve beneficial and equitable distribution of even higher population densities than we have now. We need innovative and bold change on how we manage, build and grow our communities, to enhance rather than detract from liveability in the modern age. We need leaders with the courage to act and communities with the resilience to evolve.

We advocate that State Government resource and gazette a framework to enable Local Government Authorities to confidently address the economic value of green infrastructure with consistent data. This framework would enable numerous projects to be valued, resourced and implemented. Trees and parks would be deliberated and assessed in a similar manner to roads and buildings as assets for the myriad of benefits they provide to the community over their lifetimes

image courtesy A.Guy



Green Space Alliance Recommendations are:

1. Improve liveability by placing greater prominence on green space in the planning process and prioritise the creation of sufficient, quality designed public open space. The Western Australian Planning Commission's current Planning Review for Better Design process should respond to green space concerns by improving planning policy to provide greater protection for existing vegetation, and establish minimum green space needs within new development at lot and precinct scales.
2. Prioritise water resources, improve water management practices and support ongoing research and demonstration of innovative urban water management solutions to sustain quality green space. The Western Australian Government's proposed Water Resources Management Bill should protect potable water resources by developing non-potable water use targets for irrigation to facilitate the uptake of fit-for-purpose water sources to meet green space irrigation requirements.
3. Recognise Perth's unique green space and enhance biodiversity protection and management practices. The Western Australian Government and Local Governments should develop Green Space Strategies which plan for the management of green space and identify green space targets. Management policies, such as bushfire mitigation and roadside vegetation legislation should reflect growing awareness of the value of vegetation and better address linkages to water sensitive urban design.
4. Recognise the value of the health and economic benefits green space generates for WA and ensure appropriate resourcing and funding. In partnership with industry, the Western Australian Government should undertake research that quantifies the value of green space in Perth. Consideration should also be given to allocating sufficient funds towards State and Local Government green space enhancement activities.
5. Promote ground-up engagement and communication across the community, industry and government to increase end-user involvement in urban green space, and support social equity outcomes. The Western Australian Government should undertake transparent consultation with industry and the community to ensure the value of urban green space is embedded in legislation and relevant policy instruments, which considers how green space contributes to health and wellbeing of our communities.

The GSA is calling on everyone to get behind this initiative and contribute to making our urban environment greener, healthier and more enjoyable for us to live.

Acknowledgements

Perth's vibrant green spaces are crucial to our health and way of life however they are at risk of being lost by being increasingly threatened from urbanization and degradation. The continued growth of Perth's metropolitan footprint places great pressure on land space and water resources, and as a result the provision of adequate green space has become a major challenge.

The Green Space Alliance (GSA), a group of Western Australian amenity horticulture industry bodies and aligned organisations, are working together to promote the benefits of green space in all its forms, including parks and recreational reserves, civic spaces, residential gardens and the urban forest more broadly.

The GSA believe Perth has reached a critical point in time where action must be taken to protect existing and future green space availability and have recently launched a discussion paper and position statement entitled 'Improving Urban Liveability'.

The GSA seeks to advocate to key decision makers and stakeholders for policy reform which will deliver healthy and resilient communities.

The discussion paper, position statement and a video highlighting the importance of green infrastructure can be accessed at <http://www.parklandwa.org.au/1034/green-space-alliance> which urges everyone to take this seriously. GSA's ambassador **Neville Passmore** believes, *"Brown parks are not an option for the future of my Perth. Well designed and properly maintained playing fields, passive recreational areas, urban forests, home gardens, even green walls and roof gardens are needed, not only to combat the retained heat of our cities and suburbs, but to make this place we call home - liveable."*

Green spaces are the lungs of our city and keep us connected with nature. These important attributes must be protected now and for generations to come. There is overwhelming evidence demonstrating the benefits of green space, including improved community wellbeing, mental health, ecosystems enhancement and increased property values to name a few.

Population growth places great pressure on land, spaces and water resources, and as a result the provision of adequate green space has become a major challenge. A key challenge identified by the GSA is that the economic, social and health benefits generated by green space which is not valued, clearly understood or acknowledged.

Whilst research has been undertaken in Australia and internationally to measure these benefits, a comprehensive study of the value of green infrastructure has not been undertaken. The provision and maintenance of public green space is not fully considered planning decisions.

Our planning and water management policies do not sufficiently support the protection of existing green space, nor the creation of adequate new green space. The quality of existing public open space is significantly compromised by water supply, allocation constraints and understated value to the community. The GSA urge all levels of government to urgently develop progressive policies which address water and planning challenges and additionally promote an environment of innovation which supports the development of green space in every community.

Research that quantifies the value of green space in Perth by placing a monetary value on green infrastructure will illustrate the value of investing in green infrastructure to the public and other stakeholders. Understanding and promoting this information, potentially in co-ordination with the GSA will raise awareness amongst the community but also with developers and local governments.

GSA Ambassador **Sue McDougall** Horticulturist and 6PR gardening celebrity states that, *"As the population increases future generations should not be denied access to unique natural areas due to short term or not fully considered planning decisions."* Our planning and water management policies do not sufficiently support the protection of existing green space, nor the creation of adequate new green space.

A result of inadequate guidance, the form, location and quality of new public green space is often inappropriate or insufficient. Whilst public open space and provision of green space is addressed in planning policy it is not prioritised, with public open space.

The GSA would like to thank the industry organisations that have promoted and supported the GSA throughout the past two years. Specifically the State Government Director General's who have acknowledged this collaboration of industry and provided ongoing support to work together achieving our vision.

The **Green Space Alliance** has identified a set of priority principles to support the creation and management of green space in Perth.

The Green Space Alliance believes WA Government policy should:

1. Improve liveability by placing greater prominence on green space in the planning process and prioritise the creation of sufficient, quality designed public open space.
 2. Prioritise water resources, improve water management practices and support ongoing research and demonstration of innovative urban water management solutions to sustain quality green space.
 3. Recognise Perth's unique green space and enhance biodiversity protection and management practices.
 4. Recognise the value of the health and economic benefits green space generates for WA and ensure appropriate resourcing and funding.
 5. Promote ground-up engagement and communication across the community, industry and government to increase end-user involvement, and support social equity outcomes.
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The interlinked nature of these principles provides opportunities for coordinated policy responses which break-down the existing policy silo's and promote integrated action by government. Engaging key stakeholders across government, industry and the community will be essential for successful policy outcomes.

Updated Action Plan

GSA Principle 1

Improve liveability by placing greater prominence on green space in the planning process and prioritise the creation of sufficient, quality designed public open space.

GSA Positions

The GSA believes government should ensure green space provision is better valued and addressed early in the planning process. Quality design of green spaces needs to be guided by application of the DSR's Public Parkland Planning and Design Guide.

The GSA supports the development and implementation of the Design WA Guidelines which addresses the design of green spaces within private and public land, through the varied types of development; Apartment, Housing, Precincts and Neighbourhoods. These guidelines address the impacts of densification and larger scale neighbourhood planning.

GSA Recommendations

The WAPC's current Planning Review for Better Design process provides an opportunity to respond to green space concerns. WA Government and LGAs should seek to:

- Provide greater protection for existing vegetation within development areas through the development of tree retention policies, tree registers, bonds and through evidence based prioritisation planning.
 - Development Local and Regional Biosystem Strategies which include Urban Forest Strategies, evidenced based that seek to retain, maintain and grow the tree canopy.
 - Establish state and local green space and tree canopy targets and measurements which are articulated and enforced in Local Government's Urban Forest Strategies.
- Review the dated minimum public open space requirements in developments. This can be supported through integrated regional planning and Regional Public Open Space Strategies.
 - Establish minimum green space needs within the road reserve. Adopt and reflect within local policy the Global Street Guide, Global Designing Cities Initiative
 - Support the provision of increased private garden space by preventing the construction of buildings with excessive footprints within their land envelope through updated design standards for:
 - Minimum block size and building footprints.
 - Minimum building boundary set-backs.
 - Minimum landscape and infiltration requirements.
 - Maximum height restrictions.
 - Reuse of storm water runoff
 - Regulate the use and colour of building materials
 - Educate and engage the local communities on appropriate plant species and soil depths required for green infrastructure
 - Prioritise green infrastructure requirements in vulnerable communities

01



02



Updated Action Plan

GSA Principle 2

Prioritise water resources, improve water management practices and support ongoing research and demonstration of innovative urban water management solutions to sustain quality green space.

GSA Positions

Whilst the WA Government has taken great efforts to secure Perth's water future, there remain numerous opportunities to better use current resources and encourage the uptake of alternative water resources.

GSA Recommendations

The Water Resources Management Bill should reflect the following opportunities and actions:

- 'Protect' potable water for use at the most valuable levels, applying fit-for-purpose principles to guide the use of water resources for other appropriate, non-potable applications elsewhere.
- Require the development of non-potable water use targets for open space irrigation to promote the use of water efficient practices and alternative water sources for irrigation.
- Require the application of water sensitive design principles in urban development and infrastructure creation, encouraging the use of industry leading water management practices in green space design and irrigation practices.
- Require the development and monitoring of targets for the use of alternative water resources, including recycled water, within Perth's water management strategies.
- Support the provision of unambiguous community information regarding water management and irrigation practices.
- Adopt and reflect within local policy the Global Street Guide, Global Designing Cities Initiative
- Continue to encourage and deliver programs that reward Local Government which implement good water saving practices, such as the Water Wise Councils.
- Encourage Waterwise programs such as:
 - Garden Centre Program
 - Garden Design Program
 - Garden Irrigation Program
 - Irrigation Design Shop Program
 - Landscaper Program
 - Plumber Program
 - Products Program
 - Water Auditor Program
 - Waterwise Training
- Support initiatives such as New Water Ways, whose aim is to build the water sensitive urban design capacity of Government and Industry to improve the delivery of urban water management and water sensitive cities.
- Promote the works of programs such as the Cooperative Research Centre for Water Sensitive Cities.

03



Updated Action Plan

GSA Principle 3

Recognise Perth's unique green space and enhance biodiversity protection and management practices.

GSA Positions

The WA Government should continue to develop integrated State Greening Strategies (building upon efforts of previous work and aligning to the national and international agenda) to address the value and role of green space in Perth and WA more widely. Likewise, the WA Government should work with LGAs to implement a state planning policy which requires LGAs to develop urban green space policies and strategies, such as the Urban Tree Canopy Framework. These policies should then guide future urban development by establishing minimum green space dimensions and guide the creation and management of green space networks across Perth.

GSA Recommendations

The WA Government and LGAs should:

- Mandate the development of WA Government and LGA Green Space Strategies which plan for the management of green spaces and identify green space dimensions.
- Review fire management practices and information, particularly State Planning Policy 3.7, the Guidelines for Planning in Bushfire Prone Areas and the Plant Guide within the Building Protection Zone.
- Update Main Roads WA's Vegetation within the road reserve guidelines to reflect growing awareness of the value of vegetation and better address linkages to water sensitive urban design.
- Seek to protect and enhance our areas of indigenous significance, with greater recognition through state heritage policies.
- Build upon the Public Parkland Planning and Design Guide to develop a best practice guide for the design, construction and management of green space, including specifications for size, location, arrangement, uses, connectivity, accessibility and water sources and efficiency.

Updated Action Plan

GSA Principle 4

Recognise the value of the health and economic benefits green space generates for WA and ensure appropriate resourcing and funding.

GSA Positions

The interlinked nature of these principles provides opportunities for coordinated policy responses which break down the existing policy silo's and promote integrated action by government. Engaging key stakeholders across government, industry and the community will be essential for successive policy outcomes.

GSA Recommendations

In partnership with the green space industry the WA Government should:

- Undertake research that quantifies the value of green space in Perth by placing a monetary value on green infrastructure to illustrate the value of investing in green infrastructure to the public and other stakeholders.
- Explore the ability of the WA Government to allocate revenue from tourism activities (parks entry costs, adventure activities, accommodation etc.) towards WA Government and LGA green space enhancement activities.
- Undertake research which considers the development of royalty collection from private tourism operators, from which funds are distributed via a public grants style program.

04



GREEN SPACES AND NATURE

can have measurable positive
effects on human health.



The Green Space Alliance is a voluntary group work group engaging stakeholders including government departments, local government and the community to help create a more liveable Western Australia.

References

- 1 Maas, J., Verheij, R. A., de Vries, S., Spreeuwenberg, P., Schellevis, F. G., and Groenewegen, P. P. (2009). Morbidity is related to a green living environment. *J. Epidemiol. Community Health* 63, 967–973. doi: 10.1136/jech.2008.079038
- 2 Maas, J., Van Dillen, S. M., Verheij, R. A., & Groenewegen, P. P. (2009). Social contacts as a possible mechanism behind the relation between green space and health. *Health & Place*, 15, 586–595.
- 3 Maas, J., Verheij, R. A., de Vries, S., Spreeuwenberg, P., Schellevis, F. G., and Groenewegen, P. P. (2009). Morbidity is related to a green living environment. *J. Epidemiol. Community Health* 63, 967–973. doi: 10.1136/jech.2008.079038

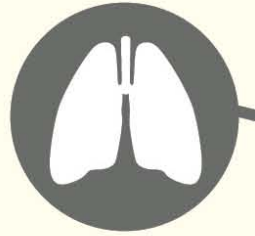
EARS

Reduction of
Vertigo



LUNGS

Reduction of
Atopy (allergies,
asthma, eczema)
Respiratory diseases
Upper respiratory
tract infections



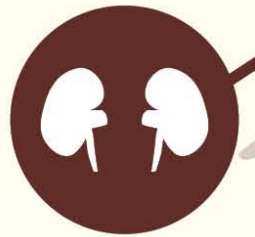
PANCREAS

Reduction of
Diabetes Mellitus



KIDNEYS

Healthier levels of
Blood glucose



INTESTINE

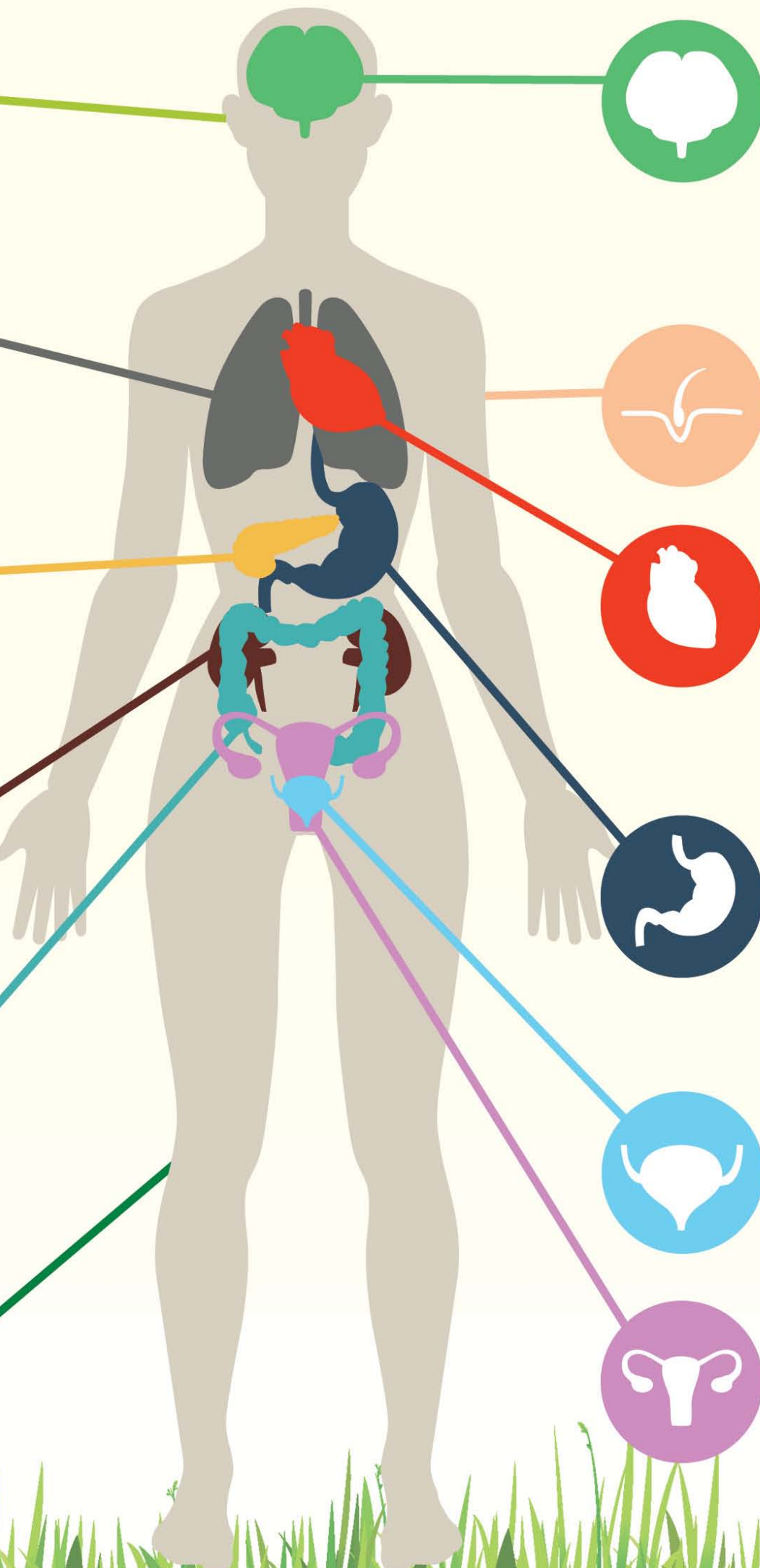
Reduction of
Infectious
disease of the
intestinal canal



KNEES

Faster
Healing from surgery





BRAIN

Healthier levels of
DHEA

Reduction of

- Anxiety disorder
- Attention restoration
- Attention-Deficit/
Hyperactivity Disorder (ADHD)
- Depression
- Migraines
- Obesity
- Stress

SKIN

Reduction of

- Atopy (allergies,
asthma,eczema)

HEART

Healthier levels of
Adiponectin
DHEA

Reduction of

- Cardiovascular disease
- Obesity
- Stress

STOMACH

Healthier levels of
Adiponectin
DHEA

Immune functioning

Reduction of

- Obesity

BLADDER

Reduction of

- Acute urinary
tract infections

UTERUS

Healthier
Birth outcomes

Reduction of

- Cancer

05



Updated Action Plan

GSA Principle 5

Promote ground-up engagement and communication across the community, industry and government to increase end-user involvement, and support social equity outcomes.

GSA Positions

The WA Government and LGAs should seek to engage with industry and the local community in the creation of new green space, or the management of existing green space which would generate greater ownership and interest in local green space issues. The WA Government's Public Health Act needs to develop a marketing campaign to raise the public's understanding of the health benefits which green space can provide.

GSA Recommendations

The WA Government should undertake transparent consultation with industry and the community to ensure the value of urban green space is embedded in legislation and relevant policy instruments via:

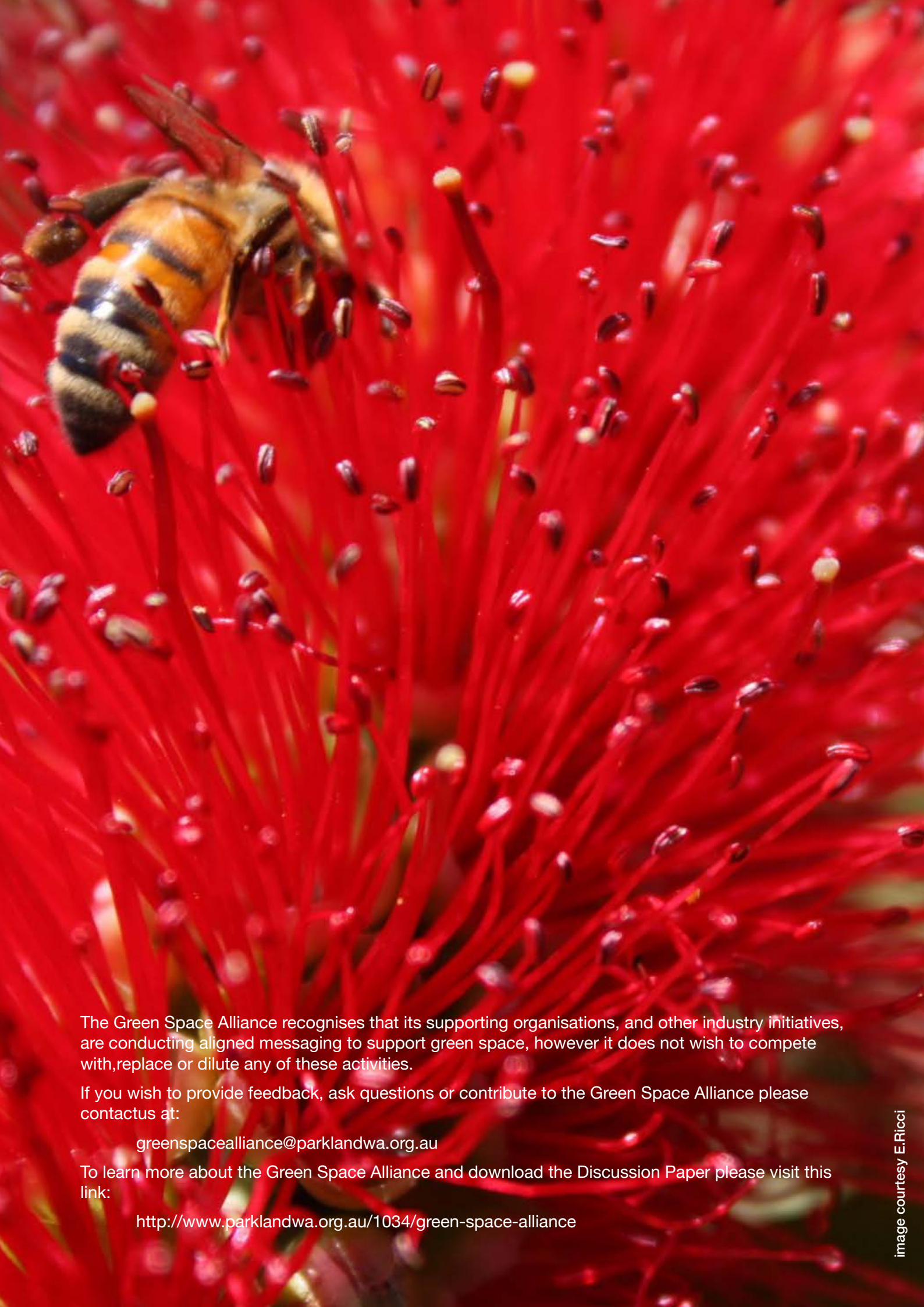
- Creating a Green Space Stakeholders Group, consisting of each relevant authority as well as representatives from LGAs and industry to provide a level of policy guidance and transparency.
 - Promoting innovation in green space management by supporting community based research and demonstration projects.
 - Develop a Public Health Outcomes Framework, which considers how green space contributes to health and wellbeing.
- Prioritise resources for greening of the most vulnerable urban communities (the hotter, lower socioeconomic areas and neighbourhoods with rapid declining or low tree canopy)
 - Developing public health indicators within the Public Health Outcomes Framework under which government reports upon the following matters:
 - Holistic Wellbeing.
 - Mental Health.
 - Physical Health and Activity.
 - The Urban Heat Island Effect and Health Impacts.
 - Urban Density and its Health Impacts.
 - Equitable access to Green Space.



Green spaces are the lungs of our city and keep us connected with nature. These important attributes must be protected now and for generations to come. There is overwhelming evidence demonstrating the benefits of green space, including improved community wellbeing, mental health, ecosystems enhancement and increased property values to name a few.



GSA Vision: "To live in a community that values green spaces at its core, which deliver benefits to everyone through improved health, wellbeing and liveability by using innovative water and urban planning solutions."



The Green Space Alliance recognises that its supporting organisations, and other industry initiatives, are conducting aligned messaging to support green space, however it does not wish to compete with, replace or dilute any of these activities.

If you wish to provide feedback, ask questions or contribute to the Green Space Alliance please contact us at:

greenspacealliance@parklandwa.org.au

To learn more about the Green Space Alliance and download the Discussion Paper please visit this link:

<http://www.parklandwa.org.au/1034/green-space-alliance>