Cities4Forests

# THE URBAN FOREST POLICY LIBRARY

WORLD RESOURCES INSTITUTE

*Image: Mussoorie, India*
*Photo by James Anderson – Flickr/World Resources Institute*

# THE URBAN FOREST POLICY LIBRARY

The Cities4Forests Policy Library is a collection of 30 policy documents from around the world that focus on or incorporate elements of urban forests. The documents selected for this library include policies, plans, and strategies at different scales that have met certain criteria for inclusion. They represent good practices in policymaking such as setting a clear vision and defining key targets and actions, taking steps to extensively involve diverse stakeholders, identifying funding sources or opportunities for financing, and establishing clear plans for monitoring and evaluation.

Submit a Document

## Purpose of the library

- Share what others around the world are doing to protect, restore, and grow their urban forests within their plans and policies
- Catalyze more ambitious action through policy and planning
- Provide examples and a starting point for those drafting a new policy or plan, or inspiration for those that are in the process of updating older policy documents

## Keep the library growing

The Policy Library is intended to be dynamic and updated periodically with new material. If you would like to nominate a policy or plan for inclusion in this library, please submit your suggestion at info@cities4forests.com.

## Why these policies?

The policies and plans included within this library were identified by a review of existing Global North and Global South policies and plans that are found online and available in English, Spanish, and Portuguese. The documents were assessed based on a set of predetermined criteria and the top performing plans and policies were included. The search was limited by those three languages and does not capture policies and plans that are not available or easily accessible online. Plans and policies have scored well across a rubric which measured the presence of specific criteria, including clearly defined goals, actions, and targets; articulation of funding sources; articulated implementation and monitoring plans; and stakeholder engagement. Some plans may score higher or lower on individual criteria but have scored higher than others overall.

- **Implementation was not part of plan assessment.** Although the plans and policies may signal holistic attempts to protect, conserve, and manage urban forests, the evaluation does not include whether implementation of these plans has been successful.
- **Content mostly covers urban forest-related materials.** Several plans cover a multitude of sectors and topics that extend beyond forest-related scope. For those plans and policies, only the activities, vision, goals, actions, and targets most relevant to urban forests have been highlighted.
- **Policies and plans must be developed with local context in mind.** Local geographic, climatic, social, and political context will ultimately determine the appropriate policies and plans for any city.

## For more information

Please contact the Cities4Forests team at info@cities4forests.com.

# Topic Areas

The policies in this library have been categorized into 10 topic areas. Many policies fall under multiple topic areas.

## Expanding Urban Tree Canopy

*Addresses specific targets and strategies to increase tree canopy on public or private land*

## Urban Forest Management

*Discusses comprehensive approaches to the care and maintenance of trees and other vegetation within urban areas*

## Biodiversity

*Sets goals for habitat conservation, connectivity of green space, and improved water and air quality*

## Green Space

*Targets the protection, restoration, and expansion of areas of vegetation within urban environments*

## Urban Planning

*Proposes ways of organizing land use and designing and developing the built environment within cities*

## Active Transport

*Uses deliberate urban planning to encourage walking, cycling, and other forms of nonmotorized transport in order to help counter urban air pollution and promote more active lifestyles among residents*

## Data, Technology, and Research

*Utilizes data, technology, and research to improve urban forestry*

## Stakeholder Engagement

*Supports the inclusion of and open communication among all community stakeholders in the planning and implementation of urban forest projects*

## Pests and Disease

*Describes approaches to the prevention and mitigation of the spread of pests and diseases within urban forests*

## Risk and Resilience

*Strives to create more resilient cities by creating responsible structures and plans to reduce the risk of flood, drought, heat, and other natural disasters*

# Active Transport

These plans, policies, and strategies encourage walking, cycling, and other forms of nonmotorized transport in order to help counter urban air pollution and promote more active lifestyles among residents.

## Plans

- Honiara - Hybrid Plan
- Norfolk - Municipal Plan
- San Francisco - Municipal Plan
- Sydney - Municipal Plan
- Vancouver - Municipal Plan
- Victoria - Municipal Plan

## Policies

- Buenos Aires - Metropolitan Policy

## Strategies

- Christchurch - Municipal Strategy 2
- Hobart - Municipal Strategy
- Melbourne - Municipal Strategy 2

# Biodiversity

These plans, policies, and strategies set goals for habitat conservation, connectivity of green space, and improved water and air quality.

## Plans

- Honiara - Hybrid Plan
- Hamilton - Metropolitan Plan
- Barcelona - Municipal Plan
- Coronel - Municipal Plan
- Hamilton - Municipal Plan
- Norfolk - Municipal Plan
- Rio de Janeiro - Municipal Plan
- Seattle - Municipal Plan
- Sydney - Municipal Plan
- Tbilisi - Municipal Plan
- Tirana - Municipal Plan
- Victoria - Municipal Plan
- Iquitos - Regional Plan

## Policies

- Buenos Aires - Metropolitan Policy
- London - Municipal Policy

## Strategies

- Auckland - Metropolitan Strategy
- Christchurch - Municipal Strategy 1
- Christchurch - Municipal Strategy 2
- Hobart - Municipal Strategy
- Melbourne - Municipal Strategy 1
- Melbourne - Municipal Strategy 2
- Melbourne - Municipal Strategy 3
- Sydney - Municipal Strategy
- Uganda - National Strategy

# Data, Technology, and Research

These plans and strategies utilize data, technology, and research to improve urban forestry.

## Plans

- Honiara - Hybrid Plan
- New York - Local Plan
- Barcelona - Municipal Plan
- Cleveland - Municipal Plan
- Norfolk - Municipal Plan
- Rio de Janeiro - Municipal Plan
- San Francisco - Municipal Plan
- Seattle - Municipal Plan
- Sydney - Municipal Plan
- Tbilisi - Municipal Plan
- Tirana - Municipal Plan
- Victoria - Municipal Plan

## Strategies

- Auckland - Metropolitan Strategy
- Christchurch - Municipal Strategy 1
- Hobart - Municipal Strategy
- Sydney - Municipal Strategy

# Expanding Urban Tree Canopy

These plans, policies, and strategies address specific targets and strategies to increase tree canopy on public or private land.

## Plans

- Honiara - Hybrid Plan
- Hamilton - Metropolitan Plan
- Barcelona - Municipal Plan
- Cleveland - Municipal Plan
- Hamilton - Municipal Plan
- Norfolk - Municipal Plan
- Rio de Janeiro - Municipal Plan
- San Francisco - Municipal Plan
- Seattle - Municipal Plan
- Sydney - Municipal Plan
- Victoria - Municipal Plan
- Vancouver - Municipal Plan

## Policies

- Santiago - Metropolitan Policy
- Tokyo - Metropolitan Policy

## Strategies

- Auckland - Metropolitan Strategy
- Christchurch - Municipal Strategy 1
- Hobart - Municipal Strategy
- Melbourne - Municipal Strategy 3
- Sydney - Municipal Strategy
- Uganda - National Strategy

# Green Space

These plans, policies, and strategies target the protection, restoration, and expansion of areas of vegetation within urban environments.

## Plans

- Honiara - Hybrid Plan
- New York - Local Plan
- Hamilton - Metropolitan Plan
- Coronel - Municipal Plan
- Hamilton - Municipal Plan
- Norfolk - Municipal Plan
- Rio de Janeiro - Municipal Plan
- San Francisco - Municipal Plan
- Sydney - Municipal Plan
- Tbilisi - Municipal Plan
- Tirana - Municipal Plan
- Vancouver - Municipal Plan
- Victoria - Municipal Plan
- Iquitos - Regional Plan

## Policies

- Buenos Aires - Metropolitan Policy
- Santiago - Metropolitan Policy
- Tokyo - Metropolitan Policy
- London - Municipal Policy

## Strategies

- Auckland - Metropolitan Strategy
- Christchurch - Municipal Strategy 2
- Melbourne - Municipal Strategy 1
- Melbourne - Municipal Strategy 2
- Sydney - Municipal Strategy

# Pests and Disease

These plans and strategies describe approaches to the prevention and mitigation of the spread of pests and diseases within urban forests.

## Plans

- Barcelona - Municipal Plan
- Cleveland - Municipal Plan
- San Francisco - Municipal Plan
- Seattle - Municipal Plan

## Strategies

- Auckland - Metropolitan Strategy
- Christchurch - Municipal Strategy 1
- Hobart - Municipal Strategy
- Melbourne - Municipal Strategy 3
- Sydney - Municipal Strategy

# Risk and Resilience

These plans, policies, and strategies strive to create more resilient cities by creating responsible structures and plans to reduce the risk of flood, drought, heat, and other natural disasters.

## Plans

- Honiara - Hybrid Plan
- New York - Local Plan
- Hamilton - Metropolitan Plan
- Barcelona - Municipal Plan
- Coronel - Municipal Plan
- Hamilton - Municipal Plan
- Norfolk - Municipal Plan
- San Francisco - Municipal Plan
- Sydney - Municipal Plan
- Tbilisi - Municipal Plan
- Vancouver - Municipal Plan
- Victoria - Municipal Plan

## Policies

- Buenos Aires - Metropolitan Policy
- London - Municipal Policy

## Strategies

- Auckland - Metropolitan Strategy
- Melbourne - Municipal Strategy 1
- Melbourne - Municipal Strategy 2
- Melbourne - Municipal Strategy 3
- Sydney - Municipal Strategy
- Uganda - National Strategy

# Stakeholder Engagement

These plans, policies, and strategies support the inclusion of and open communication among all community stakeholders in the planning and implementation of urban forest projects.

## Plans

- Honiara - Hybrid Plan
- New York - Local Plan
- Hamilton - Metropolitan Plan
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- Christchurch - Municipal Strategy 2
- Hobart - Municipal Strategy
- Melbourne - Municipal Strategy 1
- Melbourne - Municipal Strategy 2
- Melbourne - Municipal Strategy 3
- Sydney - Municipal Strategy

# Urban Forest Management

These plans, policies, and strategies discuss comprehensive approaches to the care and maintenance of trees and other vegetation within urban areas.

## Plans

- Barcelona - Municipal Plan
- Cleveland - Municipal Plan
- Coronel - Municipal Plan
- Rio de Janeiro - Municipal Plan
- San Francisco - Municipal Plan
- Seattle - Municipal Plan
- Sydney - Municipal Plan
- Tbilisi - Municipal Plan
- Vancouver - Municipal Plan
- Victoria - Municipal Plan

## Policies

- Tokyo - Metropolitan Policy

## Strategies

- Auckland - Metropolitan Strategy
- Christchurch - Municipal Strategy 1
- Hobart - Municipal Strategy
- Melbourne - Municipal Strategy 3
- Sydney - Municipal Strategy

# Urban Planning

These plans, policies, and strategies propose ways of organizing land use and designing and developing the built environment within cities.

## Plans

- Honiara - Hybrid Plan
- New York - Local Plan
- Hamilton - Metropolitan Plan
- Cleveland - Municipal Plan
- Hamilton - Municipal Plan
- Norfolk - Municipal Plan
- Rio de Janeiro - Municipal Plan
- San Francisco - Municipal Plan
- Sydney - Municipal Plan
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- Victoria - Municipal Plan
- Iquitos - Regional Plan

## Policies

- Tokyo - Metropolitan Policy

## Strategies

- Auckland - Metropolitan Strategy
- Christchurch - Municipal Strategy 2
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- Melbourne - Municipal Strategy 2
- Uganda - National Strategy

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**Urban Forest Strategy (2013)** 71

Sydney, Australia • Municipal Strategy

*Biodiversity | Data, Technology, and Research | Expanding Urban Tree Canopy | Green Space | Pests and Diseases | Risk and Resilience | Stakeholder Engagement | Urban Forest Management*

Image: Melbourne, Australia Source: Flickr/cafuego

# The Uganda Green Growth Development Strategy 2017/18–2030/31

2017 | Uganda | English | Tropical Monsoon Climate

## Vision

The Uganda Green Growth Development Strategy (UGGDS) adopted the national vision statement (Vision 2040), which is for "a transformed Ugandan society from a peasant to a modern prosperous country within 30 years." The strategy seeks to encourage green growth in Uganda, defined as "an inclusive low emissions economic growth process that emphasizes effective and efficient use of the country's natural, human, and physical capital while ensuring that natural assets continue to provide for present and future generations."

## Highlighted Goals

- Natural capital management and development which focuses on tourism development, sustainable forestry, wetlands, and optimal water resources management
- Planned urbanization and development of green cities (comprehensive economic physical planning and sustainable procurement and interlinkage between the rural raw materials production base and industrial production in cities)

## Highlighted Actions

- Undertake forest landscape restoration, especially on private land, through agroforestry and afforestation actions
- Support incentive programs oriented toward livelihood enhancement, environmental stewardship, and landscape management for climate change adaptation, mitigation, food security, and sustainable energy
- Harness opportunities from the sustainable use of wetlands in order to deliver provisioning, regulating, and aesthetic ecosystem services
- Strengthen regulation of wetlands management, especially for district local governments and urban authorities
- Restore degraded wetlands to maintain the regulating ecosystem, such as hydrological services and effluent treatment

## Topics

Biodiversity, expanding urban tree canopy, green space, risk and resilience, and urban planning

## Monitoring

Led by the National Planning Authority and the Ministry of Finance Planning and Economic Development with support from all stakeholders of the UGGDS. The document includes a matrix of monitoring and evaluation framework which defines an indicator, means of measure, data source, implementation timeline, and lead agency for each strategy/intervention.

## Financing

Six major sources for financing: mobilization from public sector allocations, environmental fiscal reforms, and subsidy reforms; sustainable procurement; certification of sustainable production and trade and inclusive green social enterprises; green energy investments and incentives; green innovation and payments for ecosystem services; and international funding. The funding target is US$1.8 billion/year.

## Highlighted Targets

The plan defines a set of strategies, each associated with eight target outcomes that address the areas of: income and livelihoods enhancement, decent green jobs, climate change mitigation and adaptation, environment and natural resources management, food and nutrition security, resource use efficiency, social inclusiveness, and economic transformation at national and subnational levels. We highlight a sample of these target outcomes to illustrate the range of targets.

- Increase forestry coverage from 15 percent in 2010 to 24 percent by 2040
- Afforestation and reforestation have abatement potential of 35.9 MtCO2e by 2030, this includes about 36 percent from avoided deforestation
- Restoration of 160,000 hectares (ha)/year and maintenance of remaining forest cover
- Restoration of 270,000 ha of wetlands through economic instruments by 2040
- At least 50 percent of forest and wetland restoration on private land will be done by women
- Support comprehensive economic physical planning and efficient waste management (solid and wastewater) for at least five cities and 15 municipalities
- Promote sustainable procurement and interlinkage between the rural raw material production base and industrial production in cities

## Implementation

District local governments, urban authorities, departments and agencies of government, communities, and regional institutions

## Financing (continued)

To achieve this strategy, the government will support subnational sustainable procurement ordinances as well as develop regulations and guidelines on sustainable procurements at the national level. Public procurements will involve finance from the government and private sector engaged in public contracts.

## Additional Notes

Institutional arrangements include governance by the National Planning Authority; Ministry of Finance Planning and Economic Development; all ministries, departments, and agencies; representation from civil society; private sector; district local governments; and relevant urban authorities.

Efforts to protect urban forests, wetlands, and catchments are already included in the other UGGDS programs, as are concepts such as sustainable procurement and waste management in urban areas.

## Additional Resources

- *The Uganda Green Growth Development Strategy 2017/18–2030/31*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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# Basic Policies for the 10-Year Project for Green Tokyo: Regenerating Tokyo's Abundant Greenery

2007 | Tokyo | Japan | English | Humid Subtropical

## Vision

Greenery brings comfort to the human spirit and is indispensable to people in urban areas. The greenery lost in the process of the development of Tokyo can be regarded as spiritual riches that we lost in exchange for material wealth. For Tokyo to develop into a mature city, we must restore and preserve our precious greenery.

To this end, it is necessary for each citizen of Tokyo to take an interest in greenery. The driving force for creating a verdant Tokyo will be people's wish to nurture green areas in their lives in which greenery is scarce and to cherish abundant greenery.

## Highlighted Goals

- Establish a framework to help every resident of Tokyo to take a positive interest in, cultivate, and protect greenery
- The Tokyo Metropolitan Government (TMG) will introduce a variety of methods, such as guidance and regulations, to create and conserve greenery.
- Improve green networks by making effective use of financial tools, such as donations and other private funding, as well as foundations
- Stage a "green movement" led by the residents of Tokyo and businesses
- Establish community green hubs by intensive use of the school ground grassing project
- Use ingenuity to create and conserve greenery

## Topics

Expanding urban tree canopy, green space, stakeholder engagement, urban forest management, and urban planning

## Monitoring

Not detailed.

## Financing

- TMG will establish new fundraising programs and encourage participation by residents, companies, and other entities to optimize the use of private funds. At the same time, TMG will steadily implement the investment necessary to create greenery by making use of the Tokyo metropolitan fund for measures to prevent global warming.
- TMG will also utilize its tax system to preserve agricultural land and other valuable greenery in urban areas and to create new greenery.
- Establishment of new green fundraising schemes that would foster a "donation culture" in Tokyo

## Highlighted Actions

- Greenery carefully tended by residents
- Develop “Umi-no-Mori” (green island) in cooperation with residents and companies (former landfill site)
- Organize voluntary greening activities by private businesses and organizations
- Replace roadside utility poles with trees
- Create and expand “environmental axes” concurrently with road development projects, where lush spaces of sweeping greenery are formed in succession
- Train “Grass Leaders” (tentative) to serve as coordinators in managing and maintaining grassed-over school grounds and organize “lawn supporters”
- Create a total of 400 hectares (ha) of green space by greening rooftops, wall surfaces, railroad areas, parking lots, and all other possible urban spaces
- Reinforce guidance and regulations for greening
- Utilize and reinforce systems to protect urban green areas and greenery in forests and hilly areas

## Highlighted Targets

- Formation of a “green road network” connecting large-scale plots of greenery with roadside trees
- Creation of a green island in Tokyo as large as the Imperial Palace’s grounds (development of Umi-no-Mori)
- Creation of a green space with a size of 1,000 ha (equal to the total area of 1,500 football fields)
- Add more than 180 ha to the city and seaside parks in the coming four years and promote waterfront greening projects
- Roadside trees will be increased to approximately 700,000 trees in four years. They will be nearly doubled to 1 million trees by the end of fiscal 2015.
- A Tokyo-wide campaign to gather momentum for greening and encourage action to wage a “green movement”

## Implementation

Coordination with residents and private organizations

## Institutional Arrangements

Coordination with residents and private organizations.

## Additional Resources

- *Basic Policies for the 10-Year Project for Green Tokyo: Regenerating Tokyo’s Abundant Greenery*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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# Trees for Life: Master Plan for Barcelona's Trees: 2017–2037

2017–2037 | Barcelona | Spain | English | Mediterranean Climate

## Vision

Trees are an essential part of Barcelona's green infrastructure, a natural resource that helps the city to have a healthy life and to conserve biodiversity. Trees connect people to nature and provide the current population and future generations with health and habitability thanks to their environmental, social, and landscaping services. Barcelona's City Council promotes the conservation of this green heritage through the involvement of a wide range of actors, including the public and private sector, civil society organizations, and the general public. This strategic municipal document defines the vision, objectives, strategic lines, and actions for the planning, management, and conservation of the city's tree population, both public and private, in accordance with its biogeographical and urban characteristics. It seeks to guarantee the contribution of those trees to a healthier city for the current population as a whole and for future generations, where the naturalization and extension of green areas is a key factor for creating living, habitable public areas for people.

## Highlighted Goals

- Support a tree population to contribute to the city's green infrastructure, achieving the maximum value and connectivity with its surroundings (urban and natural)
- Achieve the maximum environmental, social, and economic services from the tree population
- Maintain a tree population that is biodiverse, in good condition, protected, safe, and which provides the city with identity, through the most efficient and sustainable management possible
- Maintain a tree population that is adapted, resilient, and can be used as a tool for adapting to climate change
- Achieve good coexistence between the general public and trees and encourage society to value trees more

## Topics

Biodiversity; data, technology, and research; expanding urban tree canopy; pests and diseases; risk and resilience; stakeholder engagement; green space, and urban forest management

## Monitoring

By Municipality: Annual monitoring of the master plan and a five-year review of objectives, strategies, and actions in order to adjust the plan to any changes

## Financing

Requires US$10,612,368 a year (20-year plan requires $212,247,360), via city budget

## Additional Notes

Connects to the Barcelona Green Area and Biodiversity Plan (2020)

## Additional Resources

- *Trees for Life: Master Plan for Barcelona's Trees: 2017–2037*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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## Highlighted Actions

- Get to know Barcelona's tree heritage and produce a complete inventory, including a plan for preserving iconic tree species in the city
- Improve training for specialist personnel regarding the tree population and foster ways to collaborate with other municipal departments
- Create knowledge and experience-exchange networks with other national and international cities
- Seek out and apply new methods to control and monitor the physiological state of trees (infrared technology, drones, sensors, etc.)
- Select tree species with an eye to the future (resistance to urban environment, size and shape, flowering)
- Assign an economic value to the benefits of the tree population, include the value of the tree population in planning, and review the planning and design criteria for tree planting in city projects
- Inform the general public about trees of local interest in Barcelona
- Apply more efficient physical protection systems for trees and ensure the protection of trees during construction
- Review the evaluation and economic compensation criteria for trees and transplanting
- Make use of runoff water in parks and woodland areas, including for irrigation of street trees

## Highlighted Targets

- Increase the city’s tree cover by 5 percent so that 30 percent of the city's surface area is covered by trees
- Ensure that within urban areas, 40 percent of tree species are adapted to climate change, as opposed to the current 30 percent
- Achieve a biodiverse tree heritage in which no single tree species accounts for more than 15 percent of the total tree population within the urban area
- Provide the general public with all the information on the characteristics and services that every tree in urban areas provides via interactive technologies that foster knowledge and citizen collaboration
- Ensure that children in all Barcelona primary schools appreciate and can identify the trees in their neighborhood

## Implementation

Municipality. Time frame: defines three phases: three-year period (2017–2019), five-year period (2020–2025), and until the end of the plan (2026–2037)

# Living Roofs and Walls: Technical Report: Supporting London Plan Policy

2008 | London | United Kingdom | English | Marine West Coast

## Vision

The development of a more positive policy framework for living roofs and walls will enable London to balance its forecasted growth in population and development with the environmental challenges ahead in order to deliver a compact, resilient, and livable city that sets a new agenda for cities worldwide.

## Highlighted Goals

- Accessible roof space
- Adapting to and mitigating climate change
- Sustainable urban drainage
- Enhancing biodiversity
- Improved appearance

## Highlighted Actions

- Take a simpler approach of applying the policy to all developments above a given floor space threshold, “where feasible.” The onus of demonstrating non-feasibility would fall upon the developer.
- Establish an “Essential Standard” for designers and developers to adhere to

## Highlighted Targets

Recommendations for an Essential Standard:

- Intensive, extensive, or recreational roof space (or a combination of these) should be provided on all new developments.
- A minimum of 70 percent of the roof space should be vegetated to provide maximum benefit for sustainable drainage systems (SUDS), building energy performance, and biodiversity.
- At least 25 percent of the total roof space in any one development should be accessible to residents and/or workers.

## Topics

Biodiversity, green space, risk and resilience

## Financing

The document explores financial incentives employed by other cities. The success of these mechanisms is attributed to increased implementation of living roofs and green walls.

## Additional Notes

The appendix of the document includes several case studies that briefly explore regulations, financial incentives, and policy targets adopted in other cities around the world to promote or regulate the use of living roofs and green walls.

## Additional Resources

- *Living Roofs and Walls: Technical Report: Supporting London Plan Policy*
- Urban Forest Policy Learning Guide
- Equity Learning Guide
- The Cities4Forests Toolbox

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## Highlighted Targets (continued)

- A roof should have an average depth of 100 millimeter (mm) substrate with 80 percent of the substrate having an average holding capacity of approximate 2 liters/10 mm/$m^2$ equivalent, providing a potential minimum capacity 20 liters/$m^2$.
- Where some contribution to an overall SUDS scheme is considered to be of importance, the minimum holding capacity of the roof should be at least 12 liter/$m^2$.
- Where some contribution to the thermal efficiency or cooling of a building is required, an average depth of 100 mm must be achieved to provide maximum thermal mass and evapotranspiration for roofs.
- Where some contribution to visual aesthetics is required, an intensive/semi-intensive roof treatment with a minimum substrate depth of 150 mm should be used.
- Where some contribution to the biodiversity value of the building is required, a mosaic of different substrate depths, varying between 75 mm and 150 mm, must be provided. It must be seeded and planted with native wildflower species and other materials in order to vary the microhabitat/typography characteristic of the locality in which the roof is situated.
- For a recreation roof, some form of ball court or other playing surface should be provided. Adequate health and safety measures for the playing of games and sports on the roof should be implemented in order to protect the players and to prevent equipment and balls falling on people below.

## Implementation

The document describes some of the real and perceived barriers to the implementation of living roofs in London:

- Lack of a national and local policy framework that encourages the installation of living roofs and walls
- Lack of a common standard for living roofs
- Fire hazard
- Maintenance
- Cost
- Structural issues
- Leakage and damage to waterproofing
- Lack of expertise and skills

The document unwraps each of the concerns, evaluates the threat in the context of research and experiences from other cities, and defines strategies to overcome implementation barriers.

# Green City Action Plan: Tbilisi 2017–2030

2017 | Tbilisi | Georgia | English | Humid Subtropical Climate

## Vision

A city with extensive and attractive green spaces and a high level of biodiversity. Our strategic vision of a green and sustainable city has the aim of increasing both the quality and the surface area of new urban green spaces, which will help to create a more pleasant and healthy environment for our citizens as well as new habitats for animals and plants. This will eventually result in improved biodiversity in parks and gardens, which serve as green islands for a variety of birds and other animals.

## Highlighted Goals

- Create and implement an up-to-date Sustainable Urban Planning System for future city development with an emphasis on green spaces
- Develop new public parks and gardens and improve existing urban green spaces
- Protect local flora and fauna in urban and suburban areas along the Mtkvari River
- Reforest new areas on Tbilisi Hills and surrounding areas to provide windbreaks and alleviate soil erosion, landslides, and torrential floods

## Highlighted Actions

Develop a sustainable urban planning system:

- Completion of the Tbilisi Land Use Master Plan
- Computer-based system for ongoing land use and Underground Gas Storage in the city
- Public awareness campaign and promotion of the new sustainable land-use system

## Topics

Biodiversity; data, technology, and research; green space; risk and resilience; stakeholder engagement; urban forest management; and urban planning

## Monitoring

- Conducted by the Department of Architecture; Ecology Department; Economic Development Office; Office of Municipal Improvements (Tbilisi City Hall)
- Conducted quarterly, from 2017 to 2025
- Progress monitoring plan: updated inventory in GIS database; progress and financial reports; national biodiversity strategy (part of the green strategy document); action plan approved, implementation progress reported; green corridors along the banks of the Mtkvari River; approved programs as part of the action plan; information on critical zones updated by the Ministry of the Environment; selected landslide-risk areas stabilized; new silvicultural methods piloted

## Financing

Financing by city budget, international donors (technical assistance), private sector, and national government

## Highlighted Actions (continued)

Create new green spaces in the urban area of the city:

- Update urban green spaces inventory and create a GIS database
- Support home and balcony gardening with promotional campaign and awards scheme
- Remediate brownfield and greyfield land to create new green spaces and improve sustainable urban drainage systems

Biodiversity strategy and green corridors to promote biodiversity:

- Develop and implement a biodiversity strategy
- Build a public awareness campaign to promote biodiversity
- Create green corridors across the city for recreational areas (Mtkvari River green corridor in the urban area)

Conduct field research on landslide prevention and flood risk mitigation:

- Conduct field investigation on prevention of landslides and floods and introduce new silvicultural methods
- Plant new forests to improve resilience to flooding and strong winds

## Highlighted Targets

- Sustainable urban planning system implemented and in use
- At least 60–100 hectares (ha) of new green spaces developed by 2025
- Green corridors developed alongside the Mtkvari River
- Increased tree planting to create windbreaks and alleviate flooding and soil erosion
- Green corridors developed across the city

## Implementation

City Hall, Department of Architecture, and Department of Ecology

## Additional Notes

Institutions involved in implementation include the Ministry of Energy, Ministry of Economy and Sustainable Development, National Environmental Agency, Agency of Protected Areas, Land Transport Agency, National Statistics Office of Georgia, State Security and Crisis Management Council, Regional Environmental Centre for the Caucasus, Local Development Office and Department of Ecology, Environmental NGO National Network, Georgian Chamber of Commerce and Industry, Georgian Water and Power LLC., Tbilservice Group, KDV Georgia LLC, TSU University. The plan complements the Tbilisi Land Use Master Plan and was supported by the European Bank for Reconstruction and Development and the national government of the Czech Republic.

## Additional Resources

- *Green City Action Plan: Tbilisi 2017–2030*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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# Green City Action Plan of Tirana

2018 Tirana Albania English Warm Mediterranean Climate

## Vision

The Green City Action Plan of Tirana (GCAP) aims to enable people to enjoy a healthy and high-quality life in a green, resilient, and inclusive city that makes smart use of resources. By 2033, Tirana will have more high-quality green spaces that people can enjoy and where biodiversity can thrive.

## Highlighted Goals

- More and better green space: Create green spaces that people can enjoy and improve the quality of existing green assets to achieve greater biodiversity

## Highlighted Actions

- Planting of Metrobosco forests and restoration of lakes
- Tree nursery strategy for the Metrobosco forests
- Provision of pocket parks in residential blocks
- Commercial delivery model for pocket parks in residential blocks
- Construction of green corridors
- Creation of a biodiversity inventory and database
- Implementation of legislation for the protection of green spaces
- Strategic Environmental Assessment of green spaces
- Implementation of obligations for minimum sizes of public green spaces and for maintenance of public spaces
- Requalification of public spaces

## Topics

Biodiversity; data, technology, and research; green space; and urban planning

## Monitoring

Monitoring the implementation of GCAP actions will be embedded in our core organizational structure and processes within the Municipality of Tirana. We have developed a five-step process to plan and monitor the implementation of the GCAP.
1) Organization: Sets up a coordination body within the Department for Strategic Planning to monitor the implementation of the GCAP
2) Scheduling and resourcing: The coordination body will assign each GCAP action to a responsible department. A project leader or task director within each department will define a champion for each action. The champions will be responsible for data collection on indicators and reporting on progress of each action.
3) Budgeting and work authorization: Each department will set the budgets and timescales for delivering the actions assigned to them. The budget and scope of work will be authorized according to the standard MoT processes.

## Highlighted Targets

- Achieve a 20 percent increase in the area of green spaces
- Plant 2 million trees by 2030, with 900,000 planted by 2023
- Develop five new pocket parks by 2023
- Tirana and its natural areas are rich in biodiversity and agro-biodiversity with many medicinal plants in the mountainous areas that need to be protected
- Enhance three green corridors by 2023

## Implementation

Municipality of Tirana, National Territorial Planning Agency, Parks and Recreation Agency, Genetic Bank, Department of Education, Albanian Ministry of Tourism and Environment, Government of Albania

## Monitoring (continued)

4) Reporting and monitoring: The champions within each department will provide regular reports of the progress of each action (according to set timelines and budget) to the coordination body.
5) Change management: The results of the monitoring will inform planning of the subsequent stages of each action. Amendments will be made to the timelines, resources, and budget, as necessary.

## Financing

Municipal funding and carbon markets. Additional funding comes from partnerships between the public sector, businesses, developers, and the wider community.

## Additional Resources

- *Green City Action Plan of Tirana*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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# Buenos Aires Green City: A Prospective Look at the Urban Landscape

2014 | Buenos Aires | Argentina | Spanish | Humid Subtropical Climate

## Vision

The Buenos Aires Green City proposal was created and developed in response to the problems of the new century, which present the unavoidable need to consider and develop an instrument for government action to achieve a new urban landscape. This new urban landscape must integrate the artificial and green elements into the built environment.

## Highlighted Goals

- Mitigate the effects of climate change
- Reduce the city's temperature
- Reduce the effects of pollution
- Achieve an equilibrium between the urban and natural landscape aiming to create a useful space under optimum environmental and security standards
- Reduce noise, air pollution, and urban runoff by increasing the number of green areas and by using native species to improve microclimatic conditions
- Increase the continuity of public spaces with the aim of reducing fragmentation, mobility problems, and dysfunctions
- Improve air quality by enhancing the urban forest and reducing traffic
- Propose new typologies for public green spaces and public pedestrian spaces appropriate for the urban density level of Buenos Aires

## Highlighted Actions

- Plant new vegetation
- Implement new typologies for squares, boulevards, and green areas with higher functional structures
- Promote the creation of green roofs
- Create green areas around hydrological systems
- Update existing green spaces
- Rehabilitate wastelands as public spaces

## Topics

Active transport, biodiversity, green space, and risk and resilience

## Additional Notes

The policy document is full of beautiful images, renderings, and graphics that bring to life the concepts and projects presented throughout.

## Additional Resources

- *Buenos Aires Ciudad Verde: Una Mirada Prospectiva al Paisaje Urbano (Buenos Aires Green City: A Prospective Look at the Urban Landscape)*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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## Highlighted Actions (continued)

- Rehabilitate public spaces as green areas and implement economic development programs
- Develop urban green corridors to enhance biodiversity and connectivity between green areas
- Incorporate green roofs on public buildings to increase the green surface around the city that serves environmental functions

## Highlighted Targets

- Increase the number of public green spaces available and the city's capacity to mitigate floods
- Establish public green areas within 350 meters of every city neighborhood
- Reduce extreme temperatures inside the city
- Reduce carbon dioxide production

# Coronel Green Plan 2050

2009 | Coronel | Chile | Spanish | Dry Summer Subtropical

## Vision

To have a pleasant, harmonic, and green landscape that strengthens citizens' sense of identity in relation to their neighborhood and improves the urban landscape by offering meeting and recreational spaces, and in this way improves citizens' quality of life.

## Highlighted Goals

- Develop the present master plan to satisfy social, recreational and ecological goals
- Reduce the number of wastelands by creating projects for the development of green areas
- Propose green corridors to mitigate particulate matter and protect the residential zones from the industrial areas
- Improve the current livability conditions and spatial quality of public spaces and green areas in precarious conditions
- Enact legal instruments (local ordinances) that regulate the design of green areas and the protection of the urban forest
- Create master plans
- Create annual planting programs, inventory and select a number of tree species to use in these plans
- Develop and annually update the green areas and public spaces inventory, producing statistical data and monitoring plan progress
- Promote and collaborate with any project or initiatives proposed by third parties that improve the urban environment of Coronel
- Promote public participation and responsibility for public spaces protection and encourage the educational-recreational use of the urban environment through public awareness campaigns

## Topics

Biodiversity, green space, risk and resilience, stakeholder engagement, and urban forest management

## Monitoring

Not detailed

## Financing

Public sector (Municipal Budget Fund, local initiative funds, National Fund of Regional Development, Ministry of Housing and Urbanism), donations (corporations, citizens, corporate social responsibility funding from local and foreign businesses), and environmental impact evaluation system projects (compensations, carbon credits).
Amount of financing not detailed

## Highlighted Actions

- Development of structural landscape (parks)
- Restoration of emblematic public spaces
- Development of urban green corridors and tree facades
- Construction and improvement of green areas
- Improvement of streams and riverbanks
- Tree plans
- Nursery production of ornamental trees and plants
- Sponsorship of green areas

## Highlighted Targets

- Develop legal protections for the Eduardo Alessandri Educational Park as a recreational area
- Recover and protect the Parque Metropolitano Humedal Boca Maule as part of the natural legacy of Coronel
- Establish the Parque Botánico Metropolitano Calabozo
- Establish the Zona de Protección Costera Escuadrón
- Restore Plaza de Armas Almirante Latorre, Plaza 21 de Mayo, and Plaza Caupolicán
- Implement green corridors
- Build five new green areas that used to be wastelands
- Build urban public spaces on the banks of several Coronel streams
- Get 1,000 trees planted annually by the community
- Get a legal arrangement with the municipality, private, natural, and juridical entities to maintain, fix, clean, and preserve permanently gardens and public green areas
- Build a municipal nursery and produce ornamental trees and plants
- Build a composting plant to reduce and reuse organic matter from municipal and private pruning and vegetable fairs

## Implementation

Municipality of Coronel and private institutions

## Additional Resources

- *Plan Verde Coronel 2050 (Coronel Green Plan 2050)*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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# Sustainable Urban Development Plan for Iquitos

2011 | Iquitos | Peru | Spanish | Tropical Rainforest Climate

## Vision

To establish a green belt around Iquitos to promote environmental sustainability, and to protect the water bodies surrounding the city through updates to transport infrastructure, public spaces and green areas, and neighborhoods to ensure that the benefits are accessible to all inhabitants of and visitors to the city

## Highlighted Goals

- An integrated, regenerated, and polycentric urban area
- Rehabilitate the city's historic center
- Sustainable forecast and management of new expansion areas
- Redefine the city to become more sustainable, healthy, innovative, and low-carbon
- Improve the urban environment by improving service provision, cultural identity, and natural landscape

## Highlighted Actions

- Propose, promote, and update strategic alliances
- Develop an ecozone
- Develop a spatial plan through integrative planning
- Develop norms based on ecosystems' carrying capacity, highlighting limits and margins for productivity and development
- Evaluate the ecological footprint aiming for sustainability and the protection of natural capital
- Restore the urban environment
- Evaluate and conserve natural resources inside the city (green spaces, blue spaces)
- Promote urban orchards, parks, and native crops

## Topics

Biodiversity, green space, stakeholder engagement, and urban planning

## Monitoring

Monitoring by a technical committee of the urban development plan of the city of Iquitos. Monitoring time frame of 10 years

## Financing

Cofinancing agreement of local governments, different municipalities, regional government, Ministry of Energy and Mines, Ministry of Transportation and Communications, and subsidies

## Additional Notes

The plan provides extensive characterization of the metropolitan area, as well as the city's context within national and local departmental operations. The plan defines risks to the city describing both natural and anthropic contributors. Connects to the Urban Development Plan. Institutions involved in governance include Maynas Municipality, ABITA Perú, CAF Bank, and ABITA Italia

## Highlighted Targets

- Conservation, rehabilitation, and recovery of the urban and rural environment

## Additional Resources

- *Sustainable Urban Development Plan for Iquitos (El Plan de Desarrollo Urbano de la ciudad de Iquitos)*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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# Municipal Plan of Conservation and Recovery of the Atlantic Forest of Rio de Janeiro

2015 | Rio de Janeiro | Brazil | Portuguese | Marine West Coast Climate

## Vision

Contribute to the conservation of the Atlantic forest by synthesizing existing knowledge about communities and drivers of land use and landscape transformation to support better environmental planning and management

## Highlighted Goals

- Increase the efficacy of conservation units
- Fulfil and apply the current Atlantic forest protections
- Evaluate, systematize, and forecast the public budget available for the protection and restoration of the Atlantic forest
- Improve the environmental recovery of the city of Rio de Janeiro
- Develop mechanisms that increase the institutional capacity to analyze, develop, and implement projects for the restoration and conservation of the Atlantic forest
- Improve communication with the municipal environmental secretary
- Implement an effective action for the identification, mapping, monitoring, and mitigation of the principal sources of environmental pressures on the Atlantic forest in the Rio de Janeiro Municipality
- Strategic planning of the municipal forest management
- Participation of civil society in the conservation and recovery of the Atlantic forest

## Highlighted Actions

- Define priorities (species, area, ecosystem) regarding the protection and conservation of green areas of the city of Rio de Janeiro
- Review and search for partnerships (Private Reserve of Natural Heritage, for example) to expand protected areas in the city of Rio de Janeiro
- Assess feasibility of financial sustainability of Conservation Unit (UC) plans

## Topics

Biodiversity; data, technology, and research; expanding urban tree canopy; green space; stakeholder engagement; urban forest management; and urban planning

## Monitoring

The plan includes a program of continuous monitoring of vegetation coverage, which includes annual classification of images compatible with precision cartographic scale of 1:10,000, review and correction of the classification of vegetation cover and land use for the year 2010, verification of terrestrial coverage, and database update with data from the new forest inventories and mappings.

## Financing

National Environment Fund, Environmental Conservation Fund, private funds, Atlantic Forest Fund, and city budget

## Additional Resources

- *Li Plano Municipal de Conservação e Recuperação da Mata Atlântica do Rio de Janeiro (PMMA-Rio)*

## Highlighted Actions (continued)

- Conduct participatory community meetings with residents and owners of Integral Protection Conservation Units and advisory councils, providing an opportunity to clarify the reasons for environmental protection and the process of land regularization
- Define and monitor priority areas for environmental recovery
- Implement species enrichment projects in specific areas
- Analyze existing environmental education projects in order to support actions that are presenting results and improve others that are below the objectives
- Implement and maintain buffer areas around Atlantic forest fragments
- Take reforestation actions and restore irregularly altered areas to avoid new occupations
- Create a geographic information system that guides decision-making in environmental licensing processes

*(Municipal Plan for the Conservation and Recovery of the Atlantic Forest of Rio de Janeiro)*

- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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## Highlighted Targets

- Frame new green areas as protected areas
- Generate revenue to make UCs financially sustainable
- Provide adequate legal support for the performance and greater efficiency of enforcement in the municipal territory
- Guarantee growing contribution to the Environmental Conservation Fund
- Maintain and improve a database with up-to-date information on Rio de Janeiro's environmental action and recovery programs
- Increase biodiversity in reforested areas
- Ensure the continuous management of the reforestation areas implemented
- Ensure the continuity of environmental actions, as well as enable the maintenance and expansion of the city's green areas
- Create a foundation for the management of green areas
- Create a unified geographic information system to guide decision-making

## Implementation

Municipal Environmental Secretary, Municipal Council of Environment of the city of Rio de Janeiro, Rio de Janeiro's City Hall, State Institute of Environment, Chico Mendes Institute for Conservation of Biodiversity, civil society, residents and landowners within municipal Integral Protection Conservation Units, State of Rio de Janeiro and union, population of the municipality of Rio de Janeiro, owners of target reforestation project areas, União e Sociedade Civil, Ministry of Agrarian Development, Rural Technical Assistance and Extension Company, River Basin Committees, and Military Fire Department of the State of Rio de Janeiro

# Regional Policy for Green Areas

2014 | Santiago | Chile | Spanish | Dry Summer Tropical

## Vision

To address the problem of green areas and their justification as a policy objective, it is necessary to consider sustainability criteria in order to establish an adequate decision-making process in the planning of any spatial intervention and in the management of its implementation. These criteria are associated with economic, social, environmental, and urban factors, in addition to those institutions linked to the management of projects.

## Highlighted Goals

Implement a metropolitan regional system of sustainable, equitable, and quality green spaces, capable of becoming an identity reference for citizens and contributing to balanced regional development.

## Highlighted Actions

- Create urban green corridors linking urban green spaces to natural areas
- Identify undisturbed areas in the urban-rural transition that can potentially be incorporated into the system of urban green spaces in the region, acting as connectors between these territories
- Develop an urban afforestation plan in coordination with the National Forest Corporation program
- A regional environmental education plan: dissemination, information, and education on the use and protection of green spaces
- Develop a comprehensive plan to value the green spaces that contribute to regional identity, including community participation, educational, civic, and holiday activities

## Topics

Expanding urban tree canopy, green space, and stakeholder engagement

## Financing

Public-private business model, including environmental offsets, corporate social responsibility, and municipal budgets

## Additional Notes

The policy includes a dedicated chapter to institutionalize it, with recommendations to establish a dedicated entity in charge of the management of multi-sector metropolitan green areas and coordination with different sectoral institutions. The chapter also defines a set of guiding principles and recommendations for cross-sectoral knowledge sharing.

## Additional Resources

- *Política Regional de Áreas Verdes (Regional Policy for Green Areas)*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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## Highlighted Targets

- Consolidate 1,500 hectares (ha) of main green areas
- Build 500 ha of green space in communities with higher deficits
- Use 100 percent sustainable plant species well-suited to the climate, identity, and environmental characteristics of the region in new projects
- Use 50 percent of sustainable plant species in replacement projects
- Ten percent annual increase in citizens' knowledge related to the environmental importance of green spaces, to be measured by surveys

## Implementation

Ministry of the Environment, Regional Metropolitan Secretariat of Education, National Forestry Corporation, Ministry of Housing and Urban Planning, and Santiago Metropolitan Park (plan does not detail how, just names who is responsible for the activity)

# The Cleveland Tree Plan

2015 | Cleveland | USA | English | Hot Summer Continental Climate

## Vision

Through a community-wide partnership of five organizations, including the municipal government, Cleveland will once again be known as the Forest City. Residents from every neighborhood in the city will equally experience the many benefits of our urban forest that increases resilience, health, prosperity, and overall quality of life. Cleveland will achieve this vision by collaborating amongst a variety of stakeholders; prioritizing trees in government, nonprofit, and business sectors; implementing best practices in urban forestry; increasing tree canopy cover and the benefits it provides; ensuring that tree benefits are equitably distributed; leveraging the economic advantages of urban trees; and engaging people to revitalize neighborhoods through community forestry.

## Highlighted Goals

- Shift thinking about trees, acknowledging them as critical community infrastructure
- Reverse the trend of canopy loss
- Assume full stewardship of the urban tree infrastructure

## Highlighted Actions

- Establish a unified voice and formalize partnerships
- Develop and implement an outreach and education strategy
- Develop and implement a funding plan
- Complete a comprehensive tree inventory
- Develop and implement a management plan for city-owned trees
- Undergo an operational review
- Establish a canopy goal and plan for canopy updates
- Institute policy changes supportive of urban forestry
- Plant with a purpose: trees for neighborhood equity

## Topics

Data, technology, and research; expanding urban tree canopy; pests and diseases; stakeholder engagement; urban forest management; and urban planning

## Monitoring

Each action or task will be evaluated as part of an achievement schedule, with progress evaluated every five years in all 25 indicators of a sustainable urban forest plan.

## Financing

Currently, funding comes from a general fund, capital project bonds, and grants. However, the plan outlines other short-term and long-term mechanisms to be explored, including tree ordinance revenue, violation fees, special assessments (which levy fees per foot of right-of-way or as a percentage of total property value), earmarking of taxes, tree work permits, development permits or fees, compensatory fines, sale of municipal wood waste, and, finally, continued development of partnerships, especially in addressing short-term or project-based funding needs. One outcome of this plan is the development and implementation of a funding plan.

## Highlighted Targets

- Achieve the desired tree canopy cover according to goals set for all city neighborhoods. Alternatively, achieve 75 percent of the total canopy possible for the entire city and in each neighborhood
- Establish a genetically diverse population of publicly owned trees across the entire city and for each neighborhood. Tree populations should comprise of no more than 30 percent of any family, 20 percent of any genus, and 10 percent of any species.
- Establish a tree population suited to the urban environment and adapted to the overall region. Species are matched to the site using the “Right Tree for the Right Place” (i.e., more than 75 percent of trees are considered suitable for the site)
- Citizens understand, cooperate, and participate in urban forest management at the neighborhood level. Urban forestry is a neighborhood-scale issue
- Comprehensive, GIS-based, current inventory of all public trees to guide management, with mechanisms in place to keep data current and available for use. Data allow for analysis of age, condition, risk, diversity, and suitability
- Ensure that the benefits of tree canopy are available to all, especially for those most affected by these benefits. Achieve low variation between tree canopy and equity factors citywide by neighborhood

## Implementation

Mayor’s Office of Sustainability, Western Reserve Land Conservancy Thriving Communities Institute, Cleveland Neighborhood Progress, Cleveland Public Works Department, Cleveland City Planning Commission, LAND Studio, and Holden Arboretum

## Additional Notes

The plan includes a table with 25 indicators of a sustainable urban forest and assesses the city’s performance for each indicator as low, moderate, or good. The indicators are clustered under three sections—trees, players, and management approach—emphasizing the importance of looking at the condition of trees, key stakeholders, and good practices for operations and management. The city will monitor its progress in advancing a sustainable urban forest against these 25 indicators.

Institutions involved in governance include the Cleveland City Planning Commission, Urban Forestry Division, Cleveland Public Works Department, Cleveland Neighborhood Progress, Holden Arboretum LAND Studio, and the Western Reserve Land Conservancy Thriving Communities Institute.

## Additional Resources

- *The Cleveland Tree Plan*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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# NYC Green Infrastructure Plan: A Sustainable Strategy for Clean Waterways

2010 | New York City | USA | English | Humid Subtropical Climate

## Vision

This *NYC Green Infrastructure Plan* presents an alternative approach to improving water quality that integrates green infrastructure, such as swales and green roofs, with investments to optimize the existing system and to build targeted, smaller-scale gray or traditional infrastructure. This is a multipronged, modular, and adaptive approach to a complicated problem that will provide widespread, immediate benefits at a lower cost. The green infrastructure component of this strategy builds upon and reinforces the strong public and government support that will be necessary to make additional water quality investments. A critical goal of the green infrastructure component is to manage runoff from 10 percent of the impervious surfaces in combined sewer watersheds through detention and infiltration source controls.

## Highlighted Goals

- Build cost-effective gray infrastructure
- Optimize the existing wastewater system
- Control runoff from 10 percent of impervious surfaces through green infrastructure
- Institutionalize adaptive management, model impacts, measure Combined Sewer Overflows, and monitor water quality
- Engage and enlist stakeholders

## Highlighted Actions

- Prepare a Green Infrastructure Fund
- Create an interagency partnership, the Green Infrastructure Task Force, to incorporate stormwater management into roadway, sidewalk, and other capital projects and to provide for the maintenance of green infrastructure

## Topics

Data, technology, and research; green space; risk and resilience; stakeholder engagement; and urban planning

## Monitoring

Not detailed

## Financing

Green roof tax credit, grant programs, and city budget

Task force: an interagency partnership to facilitate funding

City is prepared to spend US$1.5 billion over 20 years and $187 million in capital funds in four years following plan's release on green infrastructure and other relevant elements

City will prepare a Green Infrastructure Fund to supply funds for capital and maintenance, e.g., roadway reconstructions, and leverage additional funds by avoiding investments in some gray infrastructure

The DEP will also pursue options such as the Clean Water State Revolving Funds (estimated $30 million available per year), federal funds, restoration funds from Army Corps of Engineers, etc.

## Highlighted Actions (continued)

- Build green infrastructure demonstration projects on a variety of land uses
- Partner with community groups to develop programs for the construction and maintenance of green infrastructure
- Refine New York City Department of Environmental Protection (DEP) models by including new impervious cover data and extending predictions to ambient water quality
- Identify other funding for additional elements of the Green Infrastructure Plan

## Highlighted Targets

- Reduce CSO volume by an additional 3.8 billion gallons per year (bgy), or approximately 2 bgy more than the all-grey strategy
- Capture rainfall from 10 percent of impervious surfaces in CSO areas through green infrastructure and other source controls

(not stated explicitly for every action)

## Implementation

New York State Department of Environmental Conservation, U.S. Environmental Protection Agency, community and civic groups, and environmental groups

Timeframe: 20 years

(not stated explicitly for every action)

## Additional Notes

The plan continues the implementation of PlaNYC, not only by improving water quality, but by helping the city achieve cleaner air and greener streets.

## Additional Resources

- *NYC Green Infrastructure Plan: A Sustainable Strategy for Clean Waterways*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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# A Green Infrastructure Plan for Norfolk: Building Resilient Communities

2018 | Norfolk | USA | English | Humid Subtropical Climate

## Vision

This green infrastructure plan will help the city "design the coastal community of the future" by using its natural assets to improve environmental and community health and to protect infrastructure, such as roads and buildings.

For land, the focus is to protect, connect, and re-green the landscape to provide pathways for people and wildlife, treat stormwater and reduce flooding, and beautify the city. For water, the focus is to restore shoreline habitats to support aquatic life, buffer areas from storm surge, and foster recreation, including birding, boating, and fishing.

## Highlighted Goals

- Create incentives for tree planting by citizens and businesses
- Protect intact habitat patches in the city and connect or reconnect them with green pathways to support people, plants, and animals (see map of Future Green Infrastructure Network)
- Use schools and parks as demonstration sites for low-impact development—constructed and natural green infrastructure—and continue to engage students as designers
- Create and promote stormwater education through parks to demonstrate low-impact development practices
- Expand or create volunteer programs to maintain the aesthetics and health of green infrastructure projects
- Increase knowledge about the infiltration capacity of the city's soils to ensure projects account for local soil conditions when designing stormwater projects or land development plans
- Increase access to parks and natural areas to support community health and well-being by ensuring that all residences are within a quarter mile of a park

## Topics

Active transport; biodiversity; data, technology, and research; expanding urban tree canopy; green space; risk and resilience; stakeholder engagement; and urban planning

## Monitoring

By municipality

- Update the canopy map every five years
- Implement a citizen tree survey and train community members in tree surveys to track tree diversity, coverage, and health
- Utilize existing software tools and research to track co-benefits of green infrastructure enhancements, including carbon sequestration, air quality improvements, and heat island reduction

## Financing

Will be obtained by putting projects into the city's Capital Improvements Program and pursuing other partnerships to create more funding opportunities

## Additional Notes

The city also manages programs and commissions, such as Keep Norfolk Beautiful, the Norfolk Environmental Commission, and the Norfolk Tree Commission, to facilitate other partnerships.

## Highlighted Goals (continued)

- Target streets for conversion to complete green streets to soak up stormwater, improve aesthetic values, increase safety, and provide more opportunities for alternative transportation (e.g., bike lane streets and entry corridors)
- Protect or enhance landscapes and buffers around and near key historic and cultural sites (see history and culture assets map)
- Restore vegetated buffers around the city's lakes, ponds, reservoirs, wetlands, and shorelines to protect water quality, prevent erosion, and allow inland migration of wetlands as sea level rises

## Highlighted Actions

- Target current city tree planting efforts to city neighborhoods where canopy is less than 30 percent (tree adoptions and right-of-way plantings)
- Hold community tree adoption/planting events in priority neighborhoods and track addresses of where trees are donated
- Create tree planting credit program (a "treebate") through public-private partnerships or city programs to reward those who plant trees on private property
- Plant street trees on key connection routes between civic spaces such as parks, schools, and cultural sites for streets having low canopy
- Develop policy requiring replacement or transplant of all trees impacted by roadway or utility infrastructure improvements, where preservation is not possible
- Plant orchards or food forests in city parks
- For areas where there are poorly drained or low organic matter soils, encourage landowners to increase infiltration by adding organic soil amendments, aerating turf areas, and converting lawns to shrubs and trees
- Set goal to make all city bike corridors "complete green streets"
- Plant trees near bus stops lacking shade
- Implement or incentivize restoration of meadow or forested buffers around city reservoirs, lakes, and stormwater ponds

## Additional Notes (continued)

The plan is enriched by the inclusion of maps (see example below) and places more emphasis on coastal habitat than many other plans.


## Additional Resources

- *A Green Infrastructure Plan for Norfolk: Building Resilient Communities*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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## Highlighted Targets

- Increase canopy to 30 percent in 20 years
- Plant 104,000 trees (at a rate of 5,200 trees annually to reach the goal within 20 years)
- Naturalize 35 miles of shoreline

## Implementation

Department of Public Works and overseen by the city's Watershed Management Task Force, Norfolk's Department of Recreation, Parks and Open Space, Norfolk Public Schools, and the community (especially with support from volunteers). The overall time frame is 30 years but is not stated

# San Francisco Urban Forest Plan

2014 | San Francisco | USA | English | Mediterranean Climate

## Vision

Our urban forest will be a healthy, well-maintained, and sustainably financed collection of trees and greenery that improves the city's ecological function and brings enormous benefits to the people of San Francisco.

## Highlighted Goals

- Grow the urban forest through new planting to maximize the social, economic, and environmental benefits of trees and urban greening
- Protect the urban forest from threats and loss by preserving the city's existing trees
- Manage the urban forest through coordinated planning, design, and maintenance to ensure its long-term health and sustainability
- Fund the urban forest by establishing a long-term funding strategy for the city's trees
- Engage residents, public agencies, community groups, and the private sector in caring for the urban forest and deepening their connection to nature

## Highlighted Actions

- Continue to enforce code requirements for street tree planting
- Support Friends of the Urban Forest's tree planting, stewardship, and sidewalk garden programs
- Develop a city-wide tree canopy coverage goal for San Francisco, street tree planting strategy, and street tree management plan
- Maintain and update list of Recommended Street Trees and Other Plantings and consider selecting and planting trees based on their ability to provide specific benefits
- Utilize existing programs to expand greenery in the public right-of-way such as the sidewalk landscaping program (San Francisco Department of Public Works; DPW), Pavement to Parks (Planning), SFPUC Green Infrastructure Program, and others

## Topics

Active transport; data, technology, and research; expanding urban tree canopy; green space; pests and diseases; risk and resilience; stakeholder engagement; urban forest management; and urban planning

## Monitoring

Goals related to monitoring include:

1. Complete the Citywide Street Tree Census & Summary Report
2. Perform an Urban Tree Canopy Analysis every five years
3. Produce an annual State of the Urban Forest Report
4. Carry out updated Citywide Urban Forest Analysis (UFORE)
5. Conduct focused research on local urban forest topics

## Financing

Create funding strategy and work with urban forest funding sources like Proposition K sales tax, San Francisco Public Utilities Commission, Public Benefits Impact Fees, Carbon Fund, in-lieu fees, general obligation bonds, capital planning funds, private funding (including opportunities for charitable giving by individuals, charities, and foundations), crowdsourcing, and other new innovative options

## Highlighted Actions (continued)

- Fully integrate DPW into the building permit and project tracking system (PPTS) and involve DPW early in the planning and design of projects affecting trees in the public right-of-way
- Adequately fund and establish DPW's Bureau of Urban Forestry as the primary maintenance provider for all trees in the public right-of-way
- Implement an efficient and cost-effective routine maintenance program for all city street trees (3–5-year pruning cycle, block pruning, structural pruning, sidewalk repair, etc.)
- Establish the Urban Forestry Council as the city's primary advisory body on urban forest issues. Primary tasks include: coordinate grant funding opportunities related to urban forestry, develop a strategic plan outlining major council priorities and a workplan, bring relevant agencies together to make policy recommendations, and evaluate major infrastructure and development projects affecting trees
- Partner with schools, universities, and educational institutions to assist with urban forestry research and education, and conduct outreach to small businesses and neighborhood commercial districts on the economic benefits of tree-lined commercial streets

## Highlighted Targets

- Increase the number of street trees by half (i.e., 50,000 new trees)

## Implementation

Implementation of the Urban Forest Plan (Phase 1: Street Trees) will require the participation of various public agencies and key community partners: Community Benefit Districts, San Francisco Department of Building Inspection, DPW, Friends of the Urban Forest, San Francisco Planning Department, San Francisco Recreation and Parks Department, San Francisco Countywide Transportation Authority, San Francisco Municipal Transportation Agency, San Francisco Department of the Environment, San Francisco Public Utilities Commission, and Urban Forestry Council. Timeline: depends on the action, varying from being implemented 0–5 years, 5–10 years, 10–20 years, or ongoing

## Institutional Arrangements

San Francisco Planning Department, San Francisco Department of Public Works, Recreation & Park Department, San Francisco Department of the Environment, Friends of the Urban Forest, and Urban Forestry Council

## Additional Notes

First of three phases of the plan (Phase 1: Street Trees, Phase 2: Parks and Open Space, Phase 3: Buildings and Private Property) also accompanied by Street Tree Financing Study and Street Tree Census. The plan was instrumental in gaining support for municipal (rather than private) management of street trees.

## Additional Resources

- *San Francisco Urban Forest Plan*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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# Urban Forest Stewardship Plan

2013 Seattle USA English Mediterranean Climate

## Vision

Seattle's urban forest is a thriving and sustainable mix of tree and understory species of different ages that creates a contiguous and healthy ecosystem. This ecosystem is valued and cared for by the city and all of its residents as an essential environmental, economic, and shared community asset that reinforces Seattle's identity and legacy as a forested, livable city.

## Highlighted Goals

- Create an ethic of stewardship for the urban forest among city staff, community organizations, businesses, and residents
- Strive to replace and enhance specific urban forest functions and benefits when trees are lost and achieve a net increase in the urban forest functions and related environmental, economic, and social benefits
- Expand canopy cover
- Increase the health and longevity of the urban forest by removing invasive species and improving species and age diversity

## Highlighted Actions

- Strengthen citywide approaches to communicate about trees (SPU reLeaf)
- Use the results of a new tree canopy cover study to analyze the distribution of canopy cover across residential areas and how it relates to factors such as income
- Work with local universities to pursue the research agenda
- Partner with nurseries and landscape industry to make quality information and plant materials available to the public, particularly information to discourage the sale of invasive plant species and encourage the use of native species
- Conduct citywide canopy cover assessments every five years. Calibrate results to previous assessments and conduct change analysis
- Develop decision-making tools related to tree retention or removal decisions where infrastructure conflicts exist

## Topics

Active transport; biodiversity; data, technology, and research; expanding urban tree canopy; pests and diseases; risk and resilience; stakeholder engagement; and urban forest management

## Monitoring

City government (Office of Sustainability and Environment) and community

- Monitoring progress on achieving the plan's goals (one to five years)
- Monitoring forest restoration work (1–5 years)
- Monitoring the effectiveness of the contributions of the "two-for-one tree planting program" toward achieving the 30 percent forest canopy goal

## Financing

Seeks funding from sources such as local and regional foundations, industry, and corporations

## Institutional Arrangements

Department of Planning and Development, Finance and Administrative Services, Office of Sustainability and Environment, Seattle City Light, Seattle Department of Transportation,

## Highlighted Actions (continued)

- Develop methods to allow removal and replacement with appropriate species in appropriate locations
- Continue to identify and address interdepartmental policy and project issues
- Expand the use of tree planting strips rather than tree pits with grates to provide greater rooting area and enhanced stormwater mitigation
- Diversify seed sources for restoration and reforestation of urban forests in the region in order to adapt existing plant ecotypes to novel bioclimatic conditions in a changing climate

## Highlighted Targets

- Expand canopy cover to 30 percent by 2037
- Develop (in progress) indicators for tree health, tree suitability, and tree condition.

## Implementation

Municipality and community partners (private and public). Implementation of the plan's action agenda will require policy, program, and budget coordination, as well as long-term and stable funding. Time frame: 74 short-term (1–5 years) actions, 22 mid-term (5–10 years) actions, and 9 long-term (10+ years) actions

## Additional Notes

- Seattle's plan takes an integrated, three-pronged approach to embrace principles of community, ecology, and resource management.
- The plan considers nine land-use types/management units to facilitate tailored management activities.
- Established Urban Forestry Commission to advise mayor and City Council on relevant policy and regulation decisions

## Additional Resources

- *Urban Forest Stewardship Plan*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

## Institutional Arrangements (continued)

In order to establish adequate and sustainable funding for urban forestry efforts, the city will consider the following:

- Develop tools to measure and monetize the comprehensive benefits provided by a healthy urban forest in Seattle
- Use asset management and triple bottom-line cost-benefit analysis in assessing urban forest-related projects
- Explore options for dedicated funding sources for street trees
- Explore creative financing mechanisms to ensure alternative funding to supplement general fund revenues
- Develop a coordinated approach to seek funding from sources such as local and regional foundations, industry, and corporations
- Work with the business and non-profit communities (e.g., Seattle Parks Foundation) to create a tree donation account or other funding strategies
- Explore funding opportunities with the business community and regional donors, particularly for special projects identified in a management plan
- Explore creative financing mechanisms to obtain funding for city urban forestry programs

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# Greenest City: 2020 Action Plan

2012 | Vancouver | Canada | English | Marine West Coast Climate

## Vision

The Greenest City: 2020 Action Plan is a strategy for staying on the leading edge of city sustainability. Our vision is to create opportunities today while building a strong local economy, vibrant and inclusive neighborhoods, and an internationally recognized city that meets the needs of future generations. This is a vision that has an important role for each of us.

## Highlighted Goals

For residents and the entire city, goals related to urban forests include providing access to nature, clean water, local food, clean air, green economy, green operations, and more.

## Highlighted Actions

- Create four to six new mini parks by converting street rights-of-way to parks. These parks will be developed in consultation with the local community to determine their use as community gardens, plazas, local orchards, community yards, or naturalized habitat.
- Work to acquire new parks in priority neighborhoods
- Plant 15,000 new trees on city land and other public property
- Increase the number of community garden plots and other forms of urban agriculture
- Create an Urban Forest Management Plan
- Increase street tree plantings
- Encourage planting with native and edible plants
- Create a program to encourage neighborhood stewardship
- Develop a building deconstruction program. This action focuses on policies to prevent wood and other materials from being sent to the landfill or incinerator through a process that takes apart buildings and salvages materials, rather than a traditional demolition method.
- Prioritize activities by neighborhoods that are most park- and tree-deficient

## Topics

Active transport, expanding urban tree canopy, green space, risk and resilience, stakeholder engagement, urban forest management, and urban planning

## Monitoring

Not detailed for the actions related to trees, parks, and public spaces

## Additional Resources

- *Greenest City: 2020 Action Plan*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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## Highlighted Targets

- All Vancouver residents live within a five-minute walk of a park, greenway, or other green space by 2020
- Plant 150,000 new trees by 2020
- Restore or enhance 25 acres of natural areas between 2010 and 2020

## Implementation

- City of Vancouver, Vancouver School Board, and Vancouver Coastal Health in partnership with stakeholders from the private and public sector
- Finding land for new parks, develop neighborhood-scale mini-parks to ensure that all Vancouver residents have access to green space. The city will increase the number of street trees that are planted on its properties. Public landholders will plant more trees in other public spaces. Private property owners will encourage tree planting and stewardship.
- Implementation is supported by the Federation of Canadian Municipalities. See also 2018–2019 Implementation Update: https://vancouver.ca/files/cov/greenest-city-action-plan-implementation-update-2018-2019.pdf

# City of Victoria Urban Forest Master Plan

2013 | Victoria | Canada | English | Dry Summer Subtropical

## Vision

In 2060, Victoria's homes and businesses lie within a stunning urban forest that is healthy, diverse, and abundant in all parts of the city. Treed environments are valued as an integral part of this vibrant, livable, and sustainable community: supporting biodiversity and watershed health, enhancing neighborhoods, and creating places for activity, enjoyment, and relaxation. Victoria's urban forest exemplifies sound and innovative practice and community stewardship.

## Highlighted Goals

- Develop and maintain strong community-wide support for the urban forest
- Protect, enhance, and expand Victoria's urban forest
- Design and manage the urban forest to maximize watershed health, biodiversity, and the conservation of sensitive ecosystems
- Maximize community benefits from the urban forest in all neighborhoods

## Highlighted Actions

- Create a position for an urban forest planner/coordinator who is empowered to work with other departments to achieve the city's urban forest goals and to report annually to Victoria City Council
- Incorporate the goals, policy objectives, and strategies of the Urban Forest Master Plan within other relevant city plans, policies, bylaws, and development guidelines
- Increase urban forest cover to more optimal levels in neighborhoods currently exhibiting low canopy cover
- Develop a biodiversity strategy, including measurable objectives for the protection, recovery, or enhancement of sensitive ecosystems, species at risk, and other important flora and fauna

## Topics

Active transport; biodiversity; data, technology, and research; expanding urban tree canopy; green space; risk and resilience; stakeholder engagement; urban forest management; and urban planning

## Monitoring

Proposed inventorying of street trees by the Parks Division and LiDAR modeling of the canopy by the University of Victoria

## Financing

Municipal budget; additionally, the city can pursue funding and in-kind service agreements with partners, including community associations, landowners and communities, NGOs, centers of learning, and corporate funding

## Additional Notes

- Plan is designed to complement and support the visions and goals of Victoria's Official Community Plan
- Worked with steering and interdepartmental committees and held public workshops to develop the plan

## Highlighted Actions (continued)

- Encourage connectivity between areas of natural habitat through strategic greenway and neighborhood urban forest enhancement initiatives
- Measure and report on the scope and value of ecosystem services provided by the urban forest on both public and private lands. Communicate this information as part of a broader effort to engage and educate the community on urban forest values and benefits
- Ensure that operational resourcing levels keep up with increases in the public urban forest inventory and its associated support services over the entire life cycle of the asset
- Continue a vigorous street tree replacement program, selecting species and locations so as to maximize species and age diversity, be ready for future climate conditions, minimize nuisance and risk, minimize maintenance costs, and maximize green infrastructure and other benefits
- Make use of opportunities to “piggyback” multiple functions onto public spaces (e.g., transforming greenways into productive ecosystem corridors as well as attractive transportation corridors for pedestrians, cyclists, and electric wheelchairs)
- Develop landscape design objectives that address urban forest or green infrastructure policy objectives, and include these as conditions to which a building, development, or rezoning permit will be subject

## Implementation

City of Victoria (Historically by Parks Division, but may coordinate with Sustainability Department)

## Additional Resources

- City of Victoria Urban Forest Master Plan
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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# Auckland's Urban Ngahere (Forest) Strategy

2019 | Auckland | New Zealand | English | Marine West Coast Climate

## Vision

Our vision is that Aucklanders are proud of their urban *ngahere* (forest), that Auckland has a healthy and diverse network of green infrastructure, that it is flourishing across the region and is celebrated, protected, and cared for by all. The urban *ngahere* is equally distributed across our communities and brings significant benefits to the city. It contributes to our resilience, enhances stormwater management, delivers energy savings, supports biodiversity, and improves health outcomes and quality of life for all Aucklanders. Expanding and improving the urban *ngahere* is enabled through strong, collaborative partnerships across Auckland. Communities, government, businesses, and citizens work together to make our urban *ngahere* flourish.

## Highlighted Goals

- Increase canopy cover across Auckland's urban area
- Enhance the associated social, environmental, economic, and cultural benefits
- Address unequal distribution of canopy cover by increasing canopy cover in neighborhoods with low levels of cover
- Increase the network of green infrastructure on public land
- Improve linkages between green spaces by establishing ecological corridors
- Effectively engage with private landowners to support a thriving urban *ngahere* on private land
- Plant diverse tree and plant species on public land
- Share knowledge of our urban *ngahere*
- Instill a sense of pride in Aucklanders in their urban *ngahere*

## Highlighted Actions

- Incorporate three-yearly LiDAR surveys in council work programs
- Integrate scientific knowledge of the urban *ngahere* with *mātauranga* Māori (Māori knowledge) in partnership with *mana whenua* (Indigenous people) of the urban *ngahere*

## Topics

Biodiversity; data, technology, and research; expanding urban tree canopy; green space; pests and diseases; risk and resilience; stakeholder engagement; urban forest management; and urban planning

## Monitoring

By municipality: complete review, report, database between a two-year time frame

## Financing

Identifies funding and partnership opportunities including Auckland Council, developers, businesses, and the wider community

## Additional Notes

The plan visually defines a clear strategic framework anchored by a vision, supported by objectives, key mechanisms for delivering objections, and a set of nine supporting principles that guide high-level actions.

Institutions involved in governance include the Strategy and Research, Environment and Community Committee.

## Highlighted Actions (continued)

- Identify key pressures and risks in partnership with *mana whenua* and local boards
- Increase canopy cover in road corridors, parks, and open spaces to support an average of 30 percent canopy cover across Auckland's urban area with no local board area having less than 15 percent canopy cover
- Use science and ongoing engagement with local boards, *mana whenua*, and communities to inform decisions in relation to types of planting
- Increase the capacity of nursery programs (including *maraes*) to increase the supply of eco-sourced plants
- Explore the potential for new regulatory tools to protect trees on private properties (e.g., working with the central government)
- Increase landowner grants and incentive programs (e.g., heritage tree fund for private property owners)
- Address current and future pressures to Auckland's urban *ngahere* and protection
- Raise the arboriculture maintenance program from two to five years or until new plantings are well established (a target survival rate of 70–80 percent)

### Additional Resources

- *Auckland's Urban Ngahere (Forest) Strategy*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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## Highlighted Targets

- Create a database for existing assets within two years
- Develop a better understanding of the status and trends on private and public land over time
- Increase the average canopy cover to 30 percent across Auckland's urban area with no local board area having less than 15 percent canopy cover
- Increase resilience to existing and future pressures
- No net loss of canopy cover at the level of local board areas
- No loss of percentage of trees larger than 10 meters
- A well-established community engagement program
- Increased public awareness of the values and benefits of Auckland's urban *ngahere*
- Increased survival rate of new plantings and sustainability of Auckland's urban *ngahere* on public land

## Implementation

Cross-council collaboration: This involves collaboration between internal stakeholders, interdepartmental cooperation, and working closely with council-controlled organizations. In the urban context, planners should work with foresters and arborists to effectively integrate policy and knowledge management tools to grow and protect the urban *ngahere*.

Community and council collaboration: Effective implementation of the strategy requires effective engagement with community groups and institutions that play a role in growing and protecting the urban *ngahere*.

Business and council collaboration: Insight provided by business groups, including developers, is important to support the strategy's successful implementation. The decisions and actions of business groups can have a significant influence on the urban *ngahere*.

International cooperation: This strategy draws on the knowledge and experience of many leading cities that have developed their own urban forest strategies. Continued sharing of technical, governance, and community know-how will help to achieve better outcomes for Auckland.

# Biodiversity Strategy 2008–2035

2008 | Christchurch | New Zealand | English | Marine West Coast Climate

## Vision

The goal of the strategy is to value, promote, protect, and enhance the biodiversity of Christchurch and Banks Peninsula. Local communities, Iwi, and the Christchurch City Council work together to sustain the full range of species and habitats which are special to the hills, valleys, coast, lakes, waterways, and plains of Bank Peninsula and Christchurch.

## Highlighted Goals

- Conserve and restore Christchurch and Banks Peninsula's indigenous biodiversity
- Raise awareness and understanding of indigenous biodiversity
- Encourage widespread participation in support of indigenous biodiversity conservation
- Improve and facilitate research and monitoring of indigenous biodiversity

## Highlighted Actions

- Surveys of Christchurch and Banks Peninsula's indigenous plants and animals are undertaken
- Conservation plans are prepared for nationally and locally threatened species
- Christchurch City Council provides grants for biodiversity conservation work on private land
- Ensure Christchurch City Council policy requires indigenous restoration plantings on Christchurch City Council land to be of genetically appropriate local origin
- Work with Ngāi Tahu to identify and prepare a database of sites and species within Christchurch and Banks Peninsula and establish appropriate systems to protect sensitive information pertaining to sites

## Topics

Biodiversity; data, technology, and research; expanding urban tree canopy; pests and disease; stakeholder engagement; and urban forest management

## Monitoring

Municipality, government agencies, organizations, individuals, and community members

## Financing

Municipality Environment Department, the Banks Peninsula Conservation Trust, Fish and Game New Zealand, Ngāi Tahu, Queen Elizabeth II National Trust, and several private owners. The strategy also indicates whether there is sufficient funding for each implementation action.

## Additional Notes

Language is inclusive of indigenous cultures and reflects collaboration with these stakeholders. Implementation is conducted by the departments of natural environment, natural resource, biodiversity and open space, and Banks Peninsula Conservation Trust

## Highlighted Actions (continued)

- Biodiversity information on private land is easily available to appropriate Christchurch City Council staff for project prioritization, monitoring, grants assessment, and prioritization of technical and management assistance to landowners
- The Christchurch City Council actively seeks partnerships with institutions, communities, and business to promote, protect, and enhance biodiversity
- Opportunities for joint projects, including land purchase, protection, restoration, and research projects, are investigated
- Monitoring programs are maintained, and initiated where appropriate, to determine ecological change over the long term
- New community research and monitoring programs are facilitated to complement and assist Christchurch City Council biodiversity protection and restoration

### Additional Resources

- *Biodiversity Strategy 2008–2035*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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## Highlighted Targets

- Nationally and locally threatened species are identified, prioritized, and monitored for conservation
- Plans are prepared and implemented for nationally and locally threatened species' protection
- Ecosystems, sites, and habitats with indigenous species on Christchurch City Council and private land are identified, prioritized, protected, and restored where appropriate
- The gene pool of locally occurring indigenous species is maintained
- Ecosystem function, including species restoration, is improved to compensate for previous biodiversity losses and enhance remnant indigenous biodiversity
- The Christchurch City Council maintains a database of easily accessible (subject to privacy and cultural sensitivity limitations) biodiversity information
- There is general community support for biodiversity protection and restoration
- Ngāi Tahu information about culturally important areas and species is identified, collated, and maintained
- Partnerships enable the conservation of indigenous biodiversity
- Monitoring programs enable the viability and trends of priority ecosystems and species to be sufficiently understood to guide management actions

## Implementation

Municipality (Lead implementation partners are listed in the document for each action. In addition to the Christchurch City Council, indigenous communities, landowners, conservation trusts, botanic gardens, research institutions, other government agencies, and many more are defined as lead implementors).

# Public Open Space Strategy 2010–2040

2010 | Christchurch | New Zealand | English | Marine West Coast Climate

## Vision

To provide, develop, and maintain a publicly accessible network of open space (including green space, blue space, and gray space) to enhance and protect the health, recreation, and livability for residents and visitors to Christchurch and Banks Peninsula. To contribute to maintaining and enhancing the district's environmental quality, landscape character, cultural values, and cultural heritage through the public open space system.

## Highlighted Goals

- Provide an accessible, and equitably distributed, multiuse open space network while protecting natural, cultural, and heritage values
- Ensure public open space is diverse, interesting, and promotes local and district identity (providing for and protecting indigenous biodiversity, iconic landscapes, heritage places, Ngāi Tahu cultural landscapes, and views special to each area)
- Encourage community awareness and support and develop partnerships for open space provision, development, and maintenance
- Ensure open space provision and management is sustainable

## Highlighted Actions

- Enhance existing open spaces
- Protection of natural landscape, coastline, indigenous biodiversity, recreation opportunity, and cultural heritage through land acquisition and/or agreements or covenants within "Areas of Interest"
- Permanent protection of existing Akaroa area "countryside walkways" crossing private land or replacement with alternative routes
- Provide and develop local parks in urban Christchurch and greenfield sites where parks are deficient

## Topics

Active transport, biodiversity, green space, stakeholder engagement, and urban planning

## Monitoring

Accurate monitoring of open space requirements and trends is essential to ensure that the city's open space network is kept relevant and useful. Major issues that need to be monitored include:

- Numbers, demand, and preferences for users of parks and sporting facilities
- Review of social and environmental impacts on outdoor recreation destinations, routes, and their users
- Review of cultural impacts on open space areas and their use
- Continual review of open space provision, maintenance standards, and their application across the city
- Resident satisfaction levels with park quantity and quality
- Progress implementing strategy objectives, policies, and targets

## Highlighted Actions (continued)

- The natural heritage of Christchurch is enhanced by parks, mall, civic square, riverbank, and street planting, including indigenous species
- Park minimum size standards are reflected in district plan provisions and the Infrastructure Design Standard (IDS)
- Continue to support trusts, landowners, and community groups who provide not-for-profit public open space and environmental benefits for the district through the grants system, funding assistance, rates relief, and other council resources
- Prepare a Public Open Space Strategy Implementation Plan and a citywide overview of development and maintenance priorities for parks, the surface stormwater network, and street planting
- Investigate funding and other mechanisms to ensure public open space is appropriately maintained
- Regularly monitor the current carrying capacity of open space areas, particularly sports parks, to provide an accurate estimate of community need

## Highlighted Targets

- Achieve proposed parks/open space area per 1,000 people by 2040
- Local parks and garden and heritage parks: 1 hectare (ha) per 1,000 people for local parks across the entire district, all residents should have access to local parks sited within approximately 400 meters, new parks to have not less than 50 percent of their perimeter as street frontage and/or publicly accessible surface waterway, and all parks shall conform to CPTED principles
- Regional parks: 25 ha per 1,000 people of Christchurch City Council managed land and/or land covenanted for public open space purposes involving public access

## Implementation

Municipality, Environment Canterbury, Department of Conservation, Ngāi Tahu, the Banks Peninsula Conservation Trust, the Queen Elizabeth II Trust, private owners, and Fish & Game New Zealand. Timeline: The plan will be implemented over the lifespan of the Greater Christchurch Urban Development Strategy as funding and opportunities permit

## Financing

Municipal budgets, partnerships between the Christchurch City Council and other government agencies, and private landowners. Long Term Plan (LTP) budget priorities, including the council's parks acquisition program and the Development Contributions Policy

## Additional Notes

The plan is sensitive to local and indigenous cultures and heritage, defining early on the importance of open spaces and indigenous species to different groups. Traditional language and customs are recognized within the plan and the different stakeholders are acknowledged as part of the planning and implementation process.

Institutions involved in governance include Christchurch City Council; multiple departments, multiple communities, Abley Transportation Consultants Ltd., Walkaway Consultant, and Mahaanui Kurataiao Ltd.

## Additional Resources

- *Public Open Space Strategy 2010–2040*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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# West Town Belt Masterplan

2019 Hamilton New Zealand English Marine West Coast Climate

## Vision

The vision for Hamilton's West Town Belt is to create "a dynamic, connected, and treasured inner-city destination for everyone."

## Highlighted Goals

- Open spaces meet the constantly changing needs of our people
- Hamilton's green identity is upheld
- Ecosystems and biodiversity are understood, protected, and restored
- Open spaces bring people together and celebrate our cultures and historic heritage
- Open spaces are safe, well-designed, and distinctly Hamilton
- Open spaces are accessible, connected, and make Hamilton easy to get around
- Open spaces are enhanced by community partnerships
- The open spaces network is world class.

## Topics

Biodiversity, expanding urban tree canopy, green space, risk and resilience, shareholder engagement, and urban planning

## Additional Resources

- *West Town Belt Masterplan*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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## Highlighted Actions

- Understand the community's assets and needs
- Provide open space in new growth areas
- Protect, maintain, and enhance Hamilton's green canopy
- Ensure appropriate tree species are planted in public open spaces
- Increase education and awareness
- Develop an ecological corridor network
- Employ adaptive management to respond to projected effects of a changing climate
- Ensure open space is accessible to everyone
- Form strong partnerships across the public and private sectors
- Work with other local authorities to improve network integration

## Implementation

*Mana whenua*, Waikato Regional Council, central government agencies, Hamilton City Council, local nonprofits, utility providers, and others

# Hamilton City Open Space Plan and Action Plan

2013–14 | Hamilton | New Zealand | English | Marine West Coast Climate

## Vision

The Open Space Plan sets out a 50-year strategic direction to guide future planning, development, management, and maintenance of Hamilton's open space.

This plan focuses on establishing and strengthening partnerships with landowners and stakeholders, community groups, organizations, businesses, institutions, and funders that support and invest in our open space to achieve positive outcomes.

## Highlighted Goals

- Retain existing open space
- Deliver quality open space
- Understand what we have
- Understand communities' needs
- Identify and respond to gaps
- Optimize use of open space

## Highlighted Actions

- Review species list for planting in public open spaces
- Review the tree maintenance program and develop historic tree maintenance/replacement program
- Identify priority planting areas to sustain and enhance Hamilton's ecological health
- Collaborate with other agencies to identify and map a biodiversity network for Hamilton City
- Work with other agencies to investigate Hamilton's open space's contribution to climate change and the impact of climate change on Hamilton's open space
- Develop community gardens guidelines
- Develop a sponsorship policy for open space
- Establish formal community partnership agreements with key community groups where necessary, e.g., friends' groups
- Investigate what a community education and engagement program could be for our open space
- Establish formal partnership with the Department of Conservation

## Topics

Biodiversity, expanding urban tree canopy, green space, risk and resilience, stakeholder engagement, and urban planning

## Monitoring

Parks and Open Spaces Unit. The action plan will be monitored and revised annually to ensure the most effective methods are in place to achieve the goals and vision. Progress reports will be prepared quarterly giving everyone the opportunity to see tangible progress.

## Additional Resources

- *Hamilton City Open Space Plan*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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## Highlighted Targets

- Total quantity of Hamilton City Council-owned/administered open space is not less than 1,555 hectares (ha)
- Percentage of residents' survey respondents who provide a rating satisfied with parks and gardens in the city is at least 75 percent
- Percentage of parks maintenance standards achieved based on contract requirements to be set when new service-level agreements are in place
- Total area of urban tree canopy (to be established using GIS or canopy analysis tool) must be maintained or increased
- One hundred percent of programmed public gully restoration is completed annually
- Annual plan reports on the total number of native plants planted each year
- Community volunteer hours (8,046 hours in 2012–13) devoted to planting and maintenance per annum must be maintained or increased
- At least two "Friends Groups" are actively involved in open spaces

## Implementation

Parks and Open Spaces Unit, Strategy & Research, City Parks, Community Development & Leisure, Communications, City Planning, Property Portfolio, City Transportation, and Te Awa Charitable Trust

The success of this plan will partly depend on contributions made by Hamilton residents, other open space landowners, and the stakeholders, community groups, organizations, businesses, institutions, and funders that support and invest in our open spaces.

Time frame: defines three phases: less than two years, two-to-five-year period, and until the end of the plan (more than five years)

# Street Tree Strategy

2017 Hobart Australia English Marine West Coast Climate

## Vision

Hobart is a city where tree-lined streets are a valued component of our quality of life—achieved through excellence in planning, design, installation, and care by the city's workers and our community.

## Highlighted Goals

The urban forest is:

- recognized as a valuable contributor to the image and livability of our city;
- managed as living infrastructure assets within a comprehensive framework of policies, procedures, and funding;
- planned for, designed, installed, and managed using the best contemporary practice;
- maintained and protected as healthy living organisms from establishment to maturity; and
- a shared responsibility involving the City of Hobart, other agencies, and the community.

## Highlighted Actions

- Adopt the Street Tree Management Policies
- Foster a corporate culture wherein trees are managed as infrastructure assets using consistent concepts of "green infrastructure" and related terminology
- Establish a cross-divisional group within the organization to support establishment of street trees as part of an integrated infrastructure program
- Members of the cross-divisional group should be provided specific training to understand the requirements of trees and to promote trees and tree-friendly design concepts, solve street tree-related issues, and use new technology and techniques
- Identify opportunities for community engagement in the planning for and establishment of street trees by calling for expressions of interest from resident community groups to commence the task of developing plans for their street

## Topics

Active transport; biodiversity; data, technology, and research; expanding urban tree canopy; pests and diseases; stakeholder engagement; urban forest management; and urban planning

## Monitoring

- Prepare a revised situation analysis for 2020 and report to the Hobart City Council on performance against established targets
- Maintain street tree inventory
- Annually review budget allocations for street tree planning, establishment, care, and maintenance with a view to adequately resource the recommendations arising from this strategy
- Monitor the health of the city's street tree stock and respond accordingly to emerging issues
- Continue programmed inspections of trees (every five years) and practices in line with the city's standards
- Quantified Tree Risk Assessment: Inspections will occur on a 6–60-month cycle dependent on risk severity and minimally in all cases on a 5-year (60-month) cycle

## Financing

Use capital funding programs to increase canopy coverage, seek to

## Highlighted Actions (continued)

- Maintain an up-to-date, comprehensive, and live inventory of all street trees within the city linked to GIS mapping of locations. Ensure that terminology is adequately defined to enable consistent assessment for each criterion
- Develop nursery practice, tree maintenance in line with service-level agreements, pruning and pest and disease management, community engagement including notification of works and involvement in the processes of planning, establishment, and care of trees
- Remove street trees known to be environmental weed species listed on the street tree inventory and replace with appropriate plantings
- Prepare and commence a 10-year plan to remove and replace all trees listed as in “poor and very poor” condition or those trees known to be causing significant infrastructure issues. Consider including those trees that have been found to be pruning dependent and/or to have high failure rates.
- Implement the Quantified Tree Risk Assessment system as the mechanism to identify the level of intervention appropriate to each tree and for prioritizing maintenance works programs.

### Additional Notes

- Connects to City of Hobart Strategic Plan 2015–2025, City of Hobart Interim Planning Scheme 2015, City of Hobart Bushland Management Strategy 2007–2014
- Embraces the use of both native and non-native trees when necessary: “It’s not ‘either or,’ it’s ‘both and’”

### Additional Resources

- *Street Tree Strategy*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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## Highlighted Targets

- Canopy cover for Hobart’s urbanized areas of 40 percent by 2046, up from the existing coverage of 16.7 percent
- By year five, implement nursery practice, tree maintenance in line with service-level agreements, pruning and pest and disease management, community engagement including notification of works and involvement in the processes of planning, establishment, and care of trees
- Adopt a 40-30-10 (family, genus, species) target for species diversity within the city’s street tree stock

## Implementation

Hobart City Council, Parks and City Amenity Division, Arboriculture & Nursery Program, plus private and public partners

Time frame: five years

# Honiara Urban Resilience & Climate Action Plan

2016 | Honiara | Solomon Islands | English | Tropical Rainforest Climate

## Vision

For the City of Honiara to be acknowledged as a clean, safe, harmonious, environmentally responsible, prosperous, and resilient capital city providing a high quality of life for its multicultural community and its visitors. Mission: For the city to work in partnership with the community to deliver a range of high-standard facilities and services, and to improve the quality of life of its citizens

## Highlighted Goals

- Understand and enhance local ecosystem services
- Revegetate and protect existing urban forest, vegetation, and ecosystem assets
- Manage exposure to extreme heat
- Improve climate-related health awareness campaigns
- Educate public on environmental risks
- Improve community understanding and awareness of local climate change impacts

## Highlighted Actions

- Establish a street tree planting program along major access routes for urban cooling and beautification, and protect the urban forest through community engagement and law enforcement
- Develop an urban heat reduction approach, including low-cost design options, open/green space, and urban forest enhancements for the city
- Assess the feasibility of converting all or part of the National Referral Hospital site to a climate-sensitive public reserve, including restoration of the coastal zone, drainage enhancements, and reforestation

## Topics

Active transport; biodiversity; data, technology, and research; expanding urban tree canopy; green space; risk and resilience; stakeholder engagement; and urban planning

## Monitoring

To measure the progress of the Honiara Urban Resilience & Climate Action Plan (HURCAP) actions, an annual monitoring report on processes and outcomes will be produced and disseminated to all partners and interested parties, with opportunities for feedback and suggestions for improvements

## Financing

International funds, United States Agency for International Development, Department of Foreign Affairs and Trade, Government of Australia, New Zealand Agency for International Development, Japan International Cooperation Agency, Asian Development Bank, the World Bank, Adaptation Fund, UN-Habitat, and Green Climate Fund

## Highlighted Actions (continued)

- Establish a community-led, government-supported “Water Care” body to clean up and revegetate riverine areas, waterways, and coastal zones
- Assess natural resources across the city, their use by communities, and develop resource management plans
- Map the city’s urban vegetation using satellite imagery/LANDSAT, identifying priority areas and opportunities for urban forest enhancement/plantings
- Pilot community-led tree-planting programs within urban coastal and riverine areas with ongoing monitoring of changes

## Highlighted Targets

Not detailed

## Implementation

Honiara City Council; Ministry of Lands, Housing and Survey; Ministry of Health and Medical Services; Solomon Islands Water Authority; Development Services Exchange; Secretariat of the Pacific Regional Environment Program; Town and Country Planning Board; Ministry of Forestry and Research; Ministry of Environment, Climate Change, Disaster Management and Meteorology; Community Development Committee; NGOs; and Port Authority

## Additional Notes

This plan emphasizes the importance of a participatory approach, with engagement and involvement from local stakeholders, including youth representatives, donor organizations, local NGOs, and national government departments. Institutions involved in governance include Ministries of Lands, Housing and Survey; Environment, Climate Change, Disaster Management and Meteorology; Statistics Office; UN-Habitat’s Cities and Climate Change Initiative; the World Bank; and local authorities

## Additional Resources

- *Honiara Urban Resilience & Climate Action Plan*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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# Nature in the City Strategy: Thriving Biodiversity and Healthy Ecosystems

2017 | Melbourne | Australia | English | Marine West Coast Climate

## Vision

The City of Melbourne will support diverse, resilient, and healthy ecosystems that improve the environment and well-being of our community, providing the foundation for a livable city.

## Highlighted Goals

- Create a more diverse, connected, and resilient natural environment
- Connect people to nature
- Demonstrate local and global leadership in urban ecology and conservation of biodiversity

## Highlighted Actions

- Improve ecosystem health and biodiversity
- Develop a more ecologically connected urban landscape
- Increase the contribution of the private realm in supporting biodiversity conservation and ecosystem health within the municipality
- Connect more people to nature to improve social resilience, health, and well-being
- Explore opportunities to use cultural and practical “Caring for Country” principles to integrate people with nature
- Demonstrate local and global leadership in conserving biodiversity and creating and sustaining healthy urban ecosystems

## Highlighted Targets

By the year 2027:

- There is a net increase in biodiversity, habitats, and ecosystem health within the City of Melbourne
- The City of Melbourne will be a more ecologically connected city than in 2017

## Topics

Biodiversity, expanding urban tree canopy, green space, risk and resilience, and stakeholder engagement

## Financing

Museum, botanical gardens, and conservation and community groups

## Additional Notes

- Connects to Urban Forest Strategy, climate change adaptation strategy, Future Melbourne 2026, Zero Net Emissions Strategy, and other city plans and policies
- Also connects to state government plans, such as Protecting Victoria’s Environment–Biodiversity 2037 and national plans, such as Australia’s Biodiversity Conservation Strategy 2010–2030
- Embraces Aboriginal perspectives

## Highlighted Targets

- The private realm is playing a significant role in supporting nature in the city
- More residents, workers, and visitors encounter, value, and understand nature in the city more than they did in 2017
- The City of Melbourne will, in collaboration with Traditional Owners and the local Aboriginal community, have integrated, celebrated, and promoted “Caring for Country” approaches
- Flagship biodiversity and urban ecology projects that are recognized locally and internationally as innovative and outstanding examples of enhancing nature in the city will be delivered

## Implementation

Local government, Victorian Government (regional), universities, community (especially as volunteers), C40 cities, International Council for Local Environmental Initiatives, Traditional Owner Groups, and Aboriginal community over a 10-year period

## Additional Resources

- *Nature in the City: Thriving Biodiversity and Healthy Ecosystems*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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# Open Space Strategy

2012 | Melbourne | Australia | English | Marine West Coast Climate

## Vision

The Open Space Strategy will provide the overarching framework and strategic direction for public open space planning in the City of Melbourne for the next 15 years. A bold, inspirational, and sustainable city, with the following six goals:

- a city of people;
- a creative city;
- a prosperous city;
- a city of knowledge;
- an eco-city; and
- a connected city.

Open space has an active role in supporting this vision, and this strategy guides the future provision and design of open space to meet this overall vision and goals.

## Highlighted Goals

- Maintain and expand a quality open space network
- Provide distributed open space within easy walking distance
- Improve community health and well-being
- Create additional capital city open space in urban renewal areas
- Create additional municipal open space in urban renewal areas
- Mitigate the urban heat island effect and improve environmental conditions

## Highlighted Actions

- Commitment, involvement, and partnerships between key players, including the City of Melbourne, the Victorian Government, and the development industry to deliver additional well-located and designed open space relevant to the new community

## Topics

Active transport; biodiversity; green space; risk and resilience; stakeholder engagement; and urban planning

## Financing

- Council revenue
- External grants from other state and federal government agencies
- Open space contributions to be established in the City of Melbourne Planning Scheme, required as a cash or land contribution at the Melbourne City Council's discretion
- Land contributions by the Victorian Government to create new capital city open space to protect and enhance Melbourne's livability as the population grows. It is expected that the Victorian Government will convert part of its land holdings to open space as part of future redevelopment plans.
- Municipal open space for new communities to be funded by the Victorian Government, City of Melbourne, and developers. Municipal open space is proposed on public land owned by the Victorian Government. It is proposed that this land be converted to open space by the Victorian Government, also as part of future redevelopment plans.

## Highlighted Actions (continued)

- Additional open space is to be established in gap areas. In some cases, the smaller spaces will be acquired by utilizing wide road reserves.
- Open space is proposed to be distributed through urban neighborhoods with natural features such as large canopy trees and planted surfaces which absorb moisture to offset some impacts of increased urban heat and promote health and well-being
- Introduction of water and large canopy trees in open space, and revegetation and habitat improvements along waterways

## Highlighted Targets

- Increase the square meter per inhabitant
- Increase biodiversity
- A 500-meter walkable distance is used for state, capital city, regional, municipal and neighborhood open space, and a 300-meter walkable distance (within a 10-minute walk) is used for local and small local open space with no need to cross major barriers to reach open space, including major roads and railways

## Implementation

Melbourne City Council, with regional government (Victorian Government) contributing to the open space network, converting state-owned land to municipal land and with the development industry of the city providing cash or land contributions

## Financing (continued)

- Open space contributions by developers to provide for the demand created by forecast residents and workers. This includes land contributions from developers to create new neighborhood, local, and small open space, and cash contributions for land purchase, open space establishment, and upgrades.
- Allocations by the City of Melbourne including land conversion or purchase to expand the open space network, and annual budget expenditure for open space establishment and upgrades.

## Additional Notes

The plan includes a section for each precinct which outlines existing and projected population and worker growth, a gap analysis measuring access (walking distance) to existing open space, and context-specific actions to increase open space and create or update pertinent plans (e.g., landscape master plan).

## Additional Resources

- *Open Space Strategy: Planning for Future Growth*
- *City of Melbourne Open Space Strategy*
- *City of Melbourne Open Space Strategy: Open Space Contributions Network*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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# Urban Forest Strategy: Making a Great City Greener

2012–2032 | Melbourne | Australia | English | Marine West Coast Climate

## Vision

To create a resilient, healthy, and diverse forest for the future. The goal of this strategy is to guide the transition of Melbourne's landscape to one that is resilient, healthy, and diverse, and that meets the needs of the community, in order to create resilient landscapes, community health and well-being, and a livable, sustainable city.

## Highlighted Goals

- Mitigate and adapt to climate change
- Reduce the urban heat island effect
- Become a "water sensitive" city
- Design for health and well-being
- Design for livability and cultural integrity
- Create healthier ecosystems
- Position Melbourne as a leader in urban forestry

## Highlighted Actions

- Increase canopy cover
- Increase urban forest diversity
- Improve vegetation health
- Improve soil moisture and water quality
- Improve urban ecology
- Inform and consult the community

## Topics

Biodiversity; Expanding Urban Tree Canopy; Pests and Diseases; Risk and Resilience; Stakeholder Engagement; and Urban Forest Management

## Monitoring

Currently collect data on species, life expectancy, and infrastructure constraints for individual trees, but hope to expand to monitor total urban forest area, spatial analysis of the urban heat island, and more. Melbourne is also creating a register of "exceptional trees" to protect them from damage and destruction.

## Financing

Municipal funding and carbon markets. Additional funding comes from partnerships between public sector, businesses, developers, and the wider community.

## Additional Notes

This is the City of Melbourne's first Urban Forest Strategy. It is the product of a collaborative process, developed over two years with many stakeholders including local and international academics, interest groups, and the broader community in Melbourne

## Highlighted Targets

- Increase public realm canopy cover from 22 percent at present to 40 percent by 2040
- The urban forest will be composed of no more than 5 percent of any tree species, no more than 10 percent of any genus, and no more than 20 percent of any one family.
- Ninety percent of the City of Melbourne's tree population will be healthy by 2040.
- Soil moisture levels will be kept at levels that provide healthy growth of vegetation.
- Protect and enhance a level of biodiversity that contributes to a healthy ecosystem
- The community will have a broader understanding of the importance of our urban forest, increase their connection to it, and engage with its process of evolution.

## Implementation

Local and regional governments, community, private gardens, associations of landscape architects, several private companies, cemetery alliances, nursery associations, ICLEI Oceania, Melbourne University, 2020Vision, and Earthwatch.

## Additional Resources

- *Urban Forest Strategy: Making a Great City Greener 2012–2032*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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# Environmental Action 2016–2021: Strategy and Action Plan

2017 | Sydney | Australia | English | Humid Subtropical Climate

## Vision

We will adapt to be resilient to the impacts of a changing climate. Our city will be globally recognized as an environmental leader and will continue to be one of the world's most livable cities.

## Highlighted Goals

Together with the people living, working, and visiting our global city, and with other government entities, the City of Sydney will reduce carbon pollution and boost use of renewable energy to become a low-carbon city.

- Waste will be diverted from landfills, recycled, and recovered as a valuable resource.
- Potable water resources will be preserved and supplemented with alternative water sources.
- Waterways will be less polluted and alternative water resources, such as stormwater, captured to keep our city green and cool and help our urban canopy grow.
- The city will be connected with green links, supporting thriving biodiversity and resilient urban ecology.
- An integrated transport system will move people efficiently with a safe network of walking and cycling paths and new public transport corridors.
- Air quality will be improved with cleaner vehicles and car-sharing schemes will reduce traffic congestion. Buildings in our city will showcase innovative solutions to deliver outstanding environmental performance.
- The city will work with building developers, owners, and tenants to raise environmental standards across all sectors of the built environment. We will adapt to be resilient to the impacts of a changing climate.

## Topics

Active transport; biodiversity; data, technology, and research; expanding urban forest canopy; green space; risk and resilience; urban forest management; and urban planning

## Monitoring

The plan defines how the city is tracking its progress, including an annual update on how it has performed against intermediate targets set for each year of the plan. It tracks actions and progress by local government and acknowledges the efforts of other agencies and stakeholders.

## Financing

Funding arrangements, including federal, state, and local government sources, are identified for select initiatives.

## Additional Notes

The strategy defines progress against ambitious targets in two key areas: the city's own operations and local government area. Where the city has control over its own operations, it intends to lead by example, embedding environmental sustainability into buildings, infrastructure, public domain, and fleet.

## Highlighted Actions

- Obtain updated data on canopy cover and develop a strategy for the next stage of increased urban canopy toward the 2030 target
- Plant trees and habitat vegetation to support biodiversity
- Continue to maintain our parks at best-practice standards
- Plant trees and landscaping to cool our city
- Develop a Heatwave Response Plan aligned with the New South Wales (NSW) State Heatwave Sub Plan
- Compost green waste collected from our parks for re-use on site
- Establish guidelines for the provision of landscaping and open space in new developments
- Establish a city farm in Sydney Park for food production, farmers markets, community participation, education, innovation, and collaboration

## Highlighted Targets

- Fifty percent resource recovery of waste from city parks, streets, and public places by end June 2021
- Plant 700 new street trees each year until 2021
- Tree species diversity will not consist of more than 40 percent for any plant family, 30 percent for any genus, or 10 percent or any one species by 2021
- Plant 50,000 new trees and shrubs in city parks and street gardens each year until 2021
- Habitat sites in the city are protected and the area of bush restoration sites is increased by 100 percent by 2023 from a 2012 baseline of 4.2 hectares
- Indigenous fauna species diversity, abundance, and distribution is maintained or increased by 2023 based on a 2012 baseline
- A progressive increase in the number of habitat features for priority fauna species is established along potential habitat linkages by 2023
- The average total canopy cover is increased by 50 percent by 2030 (from 15 to 23 percent of the local government area) and increased by 75 percent by 2050 (to 27 percent) from a 2008 baseline

## Additional Notes (continued)

It will pilot new technologies and continue to transparently report its environmental performance.
A section of the plan details the progress the city has made toward city operations' interim targets and defines targets and actions for the next phase.

The institutions involved in governance include NSW Department of Industry, NSW Department of Planning & Environment, Transport for NSW, NSW Office of Environment and Heritage, Sydney Water, City of Melbourne, Better Buildings Partnership, Institute of Public Works Engineering Australia, Energy Efficiency Council, Facilities Management Australia, Green Building Council of Australia, and Property Council of Australia.

## Additional Resources

- *Environmental Action 2016–2021: Strategy and Action Plan*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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## Implementation

Municipality, community partners, and industries. An action plan in the appendix provides a time frame for each action.

# Urban Forest Strategy (2013)

2013 | Sydney | Australia | English | Humid Subtropical Climate

## Vision

The City of Sydney's urban forest contributes greatly to the city's character and is integral to making Sydney a green, global, and connected city. A thriving urban forest can provide cleaner air, filtered stormwater, and lower city temperatures. Trees, shrubs, and other plants create important habitats for birds, insects, and reptiles and make beautiful city streets. Streets filled with trees and landscaping can also have psychological benefits in reducing stress and providing spaces for relaxation and contact with nature. We are working to create an urban forest with greater tree canopy and more diversity to provide these proven benefits of plants and trees in a city. This Urban Forest Strategy works to provide healthy and diverse landscaping in our streets and parks and create beautiful streets and public spaces that contribute to the health and well-being of everyone.

## Highlighted Goals

- Protect and maintain the existing urban forest
- Increase canopy cover
- Improve urban forest diversity
- Increase community knowledge and engagement

## Highlighted Actions

- Tree retention: Use education and regulatory compliance tools to ensure all developments are built in a manner that protects trees to be retained
- Tree protection: Impose tree protection bonds on developers and event organizers to ensure protection of City of Sydney Council street and park trees
- Tree maintenance standards: Utilize best management practices for the pruning, watering, tree bases, pest and disease control, and general maintenance of trees
- Achieve canopy targets: Work collaboratively with a wide range of stakeholders, in various professions, to ensure decisions that will impact the canopy are well-informed

## Topics

Biodiversity; data, technology, and research; expanding urban tree canopy; green space; pests and disease; risk and resilience; stakeholder engagement; and urban forest management

## Monitoring

Provides clear monitoring guidelines related to each strategic action:

- Record numbers of tree removals versus numbers planted: annually
- Record all maintenance activities and tree failures: ongoing (summary report annually)
- Follow-up random inspections of key sites and trees: annually
- LiDAR mapping: every five years prior to Urban Forest Strategy review
- Follow-up random inspections of key sites and trees: annually
- Park and street tree populations analyzed, and diversity assessment undertaken: every five years prior to Urban Forest Strategy review
- Survey of local residents, business, and council staff: every five years prior to Urban Forest Strategy review

## Highlighted Actions (continued)

- Target low canopy areas: Increase the compliance focus to ensure private property owners undertake and maintain the planting of trees following tree removal/development works
- Healthy tree planting: Undertake specialized young tree maintenance on all planted street and park trees, including formative pruning, for a minimum period of two years
- Achieve age and species diversity
- Promote value of urban forestry: Develop key health and well-being indicators to benchmark the role of urban forests in contributing to human health and measure every five years
- Achieve key stakeholder awareness: Create outreach and education strategies, such as flyers and brochures, as well as educational field trips for schools which also help schools to develop their own tree management plans
- Encourage community stewardship: Engage with corporations to investigate opportunities of tree planting for other services. An example may include Ausgrid to provide a tree to residents in exchange for going onto automated billing

## Highlighted Targets

- Prioritize the maintenance and protection of existing trees in order to maximize the benefits
- Increase the canopy cover from 15.5 percent to 23.25 percent by 2030, and then to 27.13 percent by 2050, through targeted programs for trees located in streets, parks, and private property
- Improve the age spread of street and park trees and increase species diversity, with no more than 40 percent of trees from any family, 30 percent from any genus, and 10 percent from any species
- Educate the community on the benefits of trees and their management requirements, and assist community participation in the greening of Sydney

## Implementation

Includes a detailed implementation plan, which outlines priorities, describes actions for each priority, and clearly defines realistic

## Additional Notes

Links to other plans: The plan draws connections to the Sydney Tree Management Policy, City Plan, Urban Ecology Strategic Action Plan, Landscape Code, and may also be relevant to other guiding documents like the Environmental Management Plan, Street Tree Master Plan, and others.

## Additional Resources

- *Urban Forest Strategy (2013)*
- Urban Forest Policy Learning Guide
- Social Equity Learning Guide
- The Cities4Forests Toolbox

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