Australian Urban Forestry Network

Better Practice Guide: Green Corridors

AUTHORS: Althena Davidson, City of Gold Coast; Peter Coad, Hornsby Shire Council; Emma Laurie, City of Knox; Manori Senanayake, Tree Logic

INTRODUCTION

Urban green corridors can be a useful mechanism for introducing a suite of complementary nature-based solutions in a targeted, multifaceted manner.

Parks and reserves tend to be where the benefits of urban greening are the most concentrated and effective – including biodiversity, cooling, and health and well-being – but are also often the target of fragmentation in older residential areas, or awkward placement in increasingly car-centric suburban developments. Connecting disparate parks and reserves can amplify their benefits through increased use and offer opportunities to be creative in implementing green infrastructure solutions, either through the retrofitting of existing, diverse landscapes, or through specifying their inclusion in greenfield development plans.

Because urban green corridors build on existing designs/assets, they are a convincing vehicle for getting disparate levels of local government (transport, commercial development, parks/gardens, environment) on board where financial resources are hotly contested. The geometry of urban green corridors can also be a platform for recruiting community support for urban forestry.

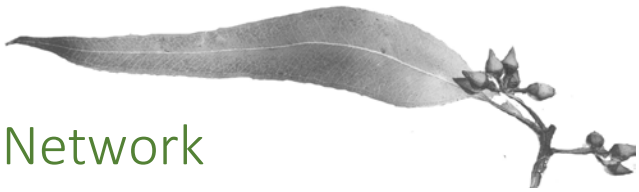
The complexities involved in balancing grey and green infrastructure needs are a promising opportunity for introducing the latest evidence-based solutions. Collaboration with researchers and community/industry leaders creates an incentive to go beyond the status quo.

This guide gives urban forest practitioners a tool for connecting existing parks and reserves with multiple types of green infrastructure.

BACKGROUND

Green corridors are traditionally associated with waterways and less developed areas of natural reserves, such as Melbourne Water's Yarra River Strategic Plan, but in urban spaces it is not always possible to link existing green spaces with a conventional green reserve corridor.

Increasingly cities are being viewed as part of a wider ecosystem, and to that end public land managers are mapping areas, providing incentives, fostering links with community groups, identifying ways to improve urban forest connections. For example, the NSW 2021 Plan identified the Green Corridors program as a priority: protecting areas of high value vegetation, connecting and increasing the amount of green spaces in Sydney and NSW.



Australian Urban Forestry Network

This guide will examine three case studies demonstrating innovative use of green infrastructure as an urban forestry example:

Critical corridors – City of Gold Coast
Compton Road overpass – Griffith University and Brisbane City Council
Yarra River Action Plan – City of Yarra
Green your Laneway – City of Melbourne

BENEFITS

Some of the potential benefits that can bolster the case for promoting green corridors in a council area include:

- Greater resilience through connecting different neighbourhoods, increasing sense of place, decreasing a sense of isolation
- Opportunity for education: continuous signage/storytelling along green corridors
- Amplifying ecological and amenity values of parks and reserves
- Enhancing sustainable transit outcomes
- Improving public health through active transport

GUIDING PRINCIPLES

Canopy creation

- Protect and enhance front setbacks through development control provisions (and deep soil requirements)
- **Consider**: maximizing benefits from limited soil volume by putting in a single large canopy tree rather than multiple small ones

Canopy connection

- Interconnect street canopy by identifying and filling tree opportunities
- **Consider**: solutions that suit your urban soil type and potential passive watering opportunities - test and monitor outcomes

Canopy protection

- Putting in requirements for cable reconfiguration whenever redevelopment occurs along the corridor
- **Consider**: working with electrical suppliers for aerial cable bundling and undergrounding of powerlines to facilitate urban canopy growth
- **Consider**: larger street trees with greater spacing when overhead cables have been simplified

Vertical green infrastructure

- Condition green roofs, facades, balconies and walls on high density buildings
- **Consider**: maintenance requirements – look into incentives for community/body corporate driven management
- **Consider**: light and soil volume limitations when retrofitting designs

Stormwater infiltration

- Replace impervious surfaces to support vegetation.
- **Consider**: permeable paving options

Stormwater utilization

- Target road narrowing to install WSUD devices and include additional trees and understory vegetation
- **Consider**: hooking into road safety initiatives by your transport department (speed calming, redirecting traffic, pedestrian malls)

Recreation

- Maintain priority areas and pathways for pedestrian and cycling needs
- **Consider**: identifying popular pedestrian and cycling pathways
- **Consider**: areas that require shade

Education

- Collaborate with landholders and community groups to increase urban forest
- **Consider:** working with friends' groups, school groups, retail communities with Council support (materials, supervision, storage space) to foster community understanding and appreciation

Planning instruments

- Ensure tree preservation planning instruments effectively safeguard mature habitat and hollow bearing trees, and increase canopy cover, on private land.
- **Consider:** creating planning overlays specifically for the corridor with tighter regulations to protect young/developing trees

Corridor funding

- Sustainable long-term funding mechanisms to ensure the longevity and integrity of the green corridor
- **Consider**: conducting regular community surveys to assess community satisfaction with green corridor projects
- **Consider**: state or federal grants and innovative sources (e.g., philanthropy, crowdfunding)

Australian Urban Forestry Network

CASE STUDIES ACROSS AUSTRALIA

City of Gold Coast (COGC) - Critical corridors

Critical corridors form the backbone of the Gold Coast natural asset network and provide the linkage from the hinterland to the coast. Protecting the ecological function of corridors to provide habitat and assist movement of flora and fauna will enable ecosystems to be resilient to natural hazards. This will involve the protection and management of existing vegetation and restoration of degraded areas in strategic locations.

Critical corridors link important natural habitat areas, providing opportunities for wildlife movement, gene flow and access to habitat refugia, particularly in response to the effects of climate change. The corridors also link to the substantial remnants, affording connection potential to important biodiversity areas within adjacent local government areas.

COGC used a conservation modelling tool in conjunction with a focal fauna species approach to determine critical corridor locations. Further, the ecological value of a property, along with its strategic value, were used to recommend an overall management approach for properties which are not currently protected, to increase **protection**, **restore** habitat, and **educate** residents.

Identification of regional scale corridors will also assist with the prioritisation of future mitigation measures to improve corridor functionality over time.

Australian Urban Forestry Network

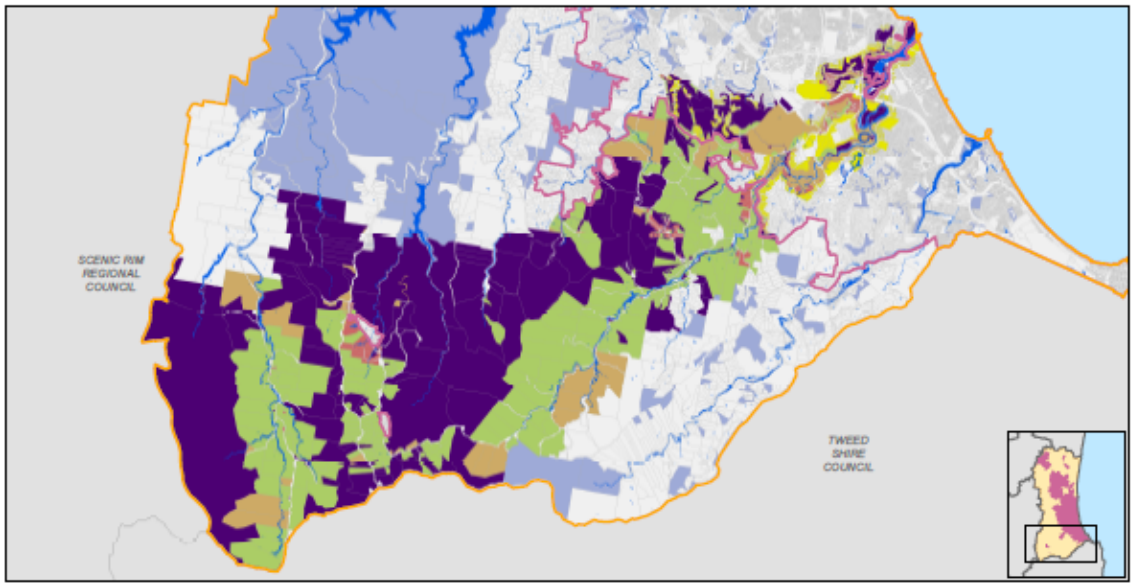


Figure 15: Burleigh to Springbrook critical corridor - toolbox management approach

City of Gold Coast
Critical Corridor and Substantial Remnant Mapping

City of Gold Coast
Watercourse
Urban footprint boundary
Conservation reserve within corridor
Other conservation reserves
Toolbox A
Toolbox B
Toolbox C
Toolbox D

ecosure

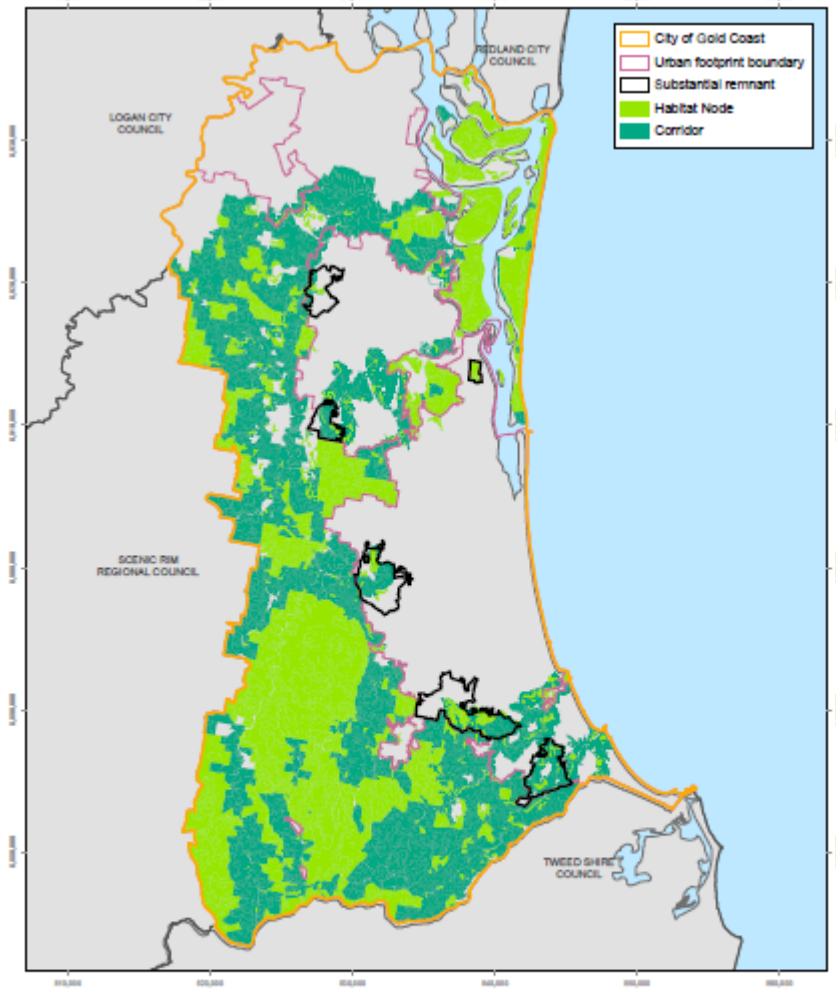


Figure 1: Executive summary - critical corridors and substantial remnant boundaries

City of Gold Coast
Critical Corridor and Substantial Remnant Mapping

ecosure

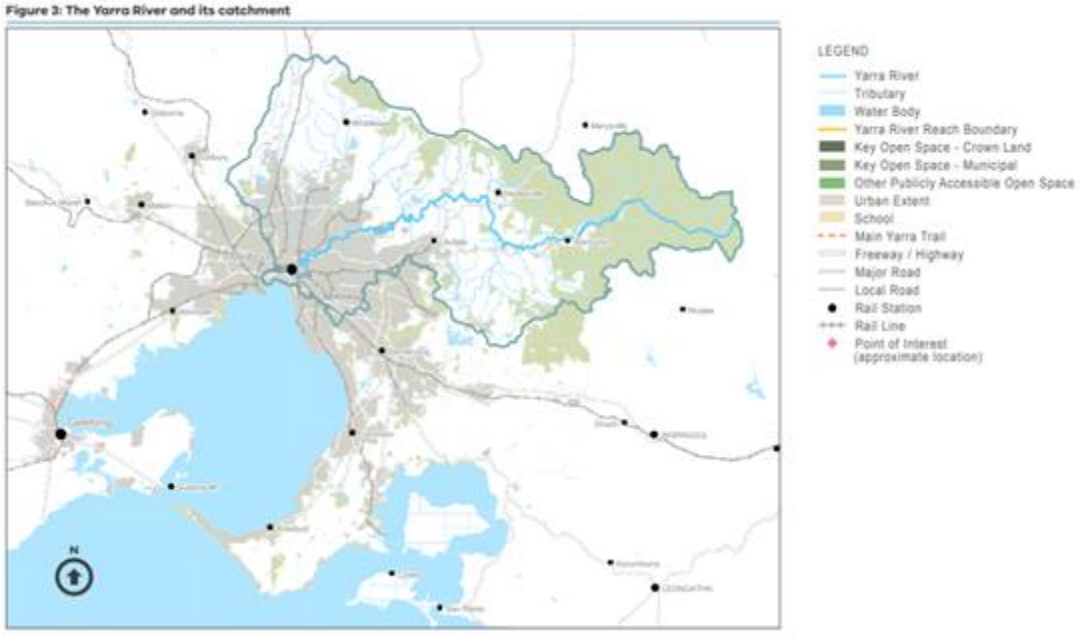
Yarra River Action Plan – City of Yarra

Melbourne's population has been booming since the turn of the century. The challenge the state faces is to ensure that as the city's population grows, the city becomes greener and more liveable, with neighbourhoods that are walkable, jobs that are accessible, and an environment that is sustainable.

In July 2016, the Government released the Protecting the Yarra River (Birrarung) discussion paper for public comment. The Discussion Paper generated more than 270 face-to-face conversations and 195 submissions from a range of stakeholder organisations, government, community groups and individuals.

The Yarra Strategic Plan will give effect to the community vision for the Yarra and its landscape, providing an overarching spatial and management context for **localised planning** along the river corridor.

Figure 3: The Yarra River and its catchment



Australian Urban Forestry Network

Compton Road fauna overpass – City of Brisbane

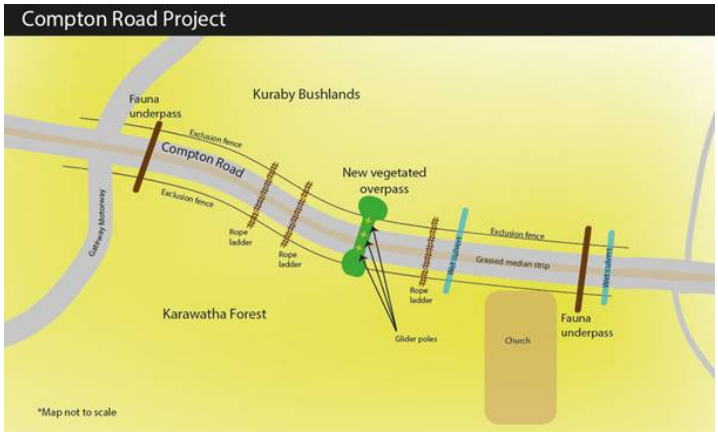
Compton Road is a major east-west arterial road cutting through one of the largest areas of remnant bushland in South East Queensland. The road upgrade demonstrated an innovative approach to wildlife protection.

The innovation demonstrated at Compton Road incorporated a wildlife overpass with rope ladders for possums, poles for gliders and customised culverts to act as tunnels for small animals to pass beneath the road, reducing the potential for fatal motor vehicle accidents from collisions with animals.

One of the many key elements was planting the overpass with locally sourced vegetation so it became a continuous strip of canopy creation and connection between surrounding forests. The design allowed for deep planting and stormwater infiltration.

The green infrastructures at Compton Road cost $700,000, which at the time was just 1.5% of the overall cost of upgrading the road.

It was a small price to pay for structures that are helping reconnect fragmented animal communities, aiding important gene-flow as well as almost eliminating the risk of animal-car collisions on a section of road carrying 70,000 vehicles a day.



Green Your Laneway

The City of Melbourne Urban Forest Strategy, has a comprehensive plan for greening major streets and precincts, but not the smaller laneways. Across the municipality, laneways occupy a ground area of 60 hectares, with a further 150 hectares of space on the walls in these laneways.

The City of Melbourne identified the opportunity to provide small scale green connections and established the Green Your Laneway program to help transform the city's laneways into leafy, green and useable spaces for everyone to enjoy.

Melbourne's laneways are being activated to become more green and sustainable. The integration of **green infrastructure** in these areas is playing a role in creating canopy and localized cooling, helping intercept and **clean stormwater,** and creating opportunities for relaxation and **recreation**. From growing vertical gardens, to planting trees and creating pocket parks, laneways have enormous potential to become the city's backyards.

The Green Your Laneway project represents the next step of green corridors where a linear form can become its own green space without necessarily connecting pre-existing places.