



REVITALISING FOREST CREEK IN URBAN CASTLEMAINE

CASTLEMAINE LANDCARE GROUP ACKNOWLEDGES THE DJA DJA WURRUNG AS THE
TRADITIONAL OWNERS AND CUSTODIANS OF THE LAND AND WE PAY OUR RESPECTS TO
THEIR ELDERS, PAST, PRESENT AND EMERGING



VISION

Forest Creek in urban Castlemaine, alive with deep clear pools, birds and platypus, an attractive green space for people to walk, talk, relax and enjoy nature. This is the vision Castlemaine Landcare Group has for the creek and its connection with the township.

The Jaara people inhabited the Forest Creek ecosystem for thousands of years. When Major Mitchell passed through the area in 1836, he described Forest Creek as 'a fine rivulet...flowing through a grassy valley' and set up camp 'in a valley where water lodged in holes'.

This changed in the 1850s with the discovery of gold and the arrival of miners by the thousands. The tranquillity and character of Forest Creek was altered as the valley upstream of Castlemaine was dug up and turned over leaving a muddy, mullock filled valley. This legacy is still being dealt with today.

Castlemaine Landcare Group has a proposal to revitalise the health of Forest Creek through Castlemaine by

recreating some of the natural features of the former creek. This includes establishing a more visually attractive winding pool-filled channel between the heritage sandstone walls.

Forest Creek would become an attractive and valued asset for Castlemaine with its heritage, recreational and ecological values enhanced. The creation of a defined channel would increase the velocity of flows, reduce sedimentation, limit the growth of reeds, assist the passage of floodwaters and create more diverse habitats.

With support from community, Council and other agencies this vision can be a reality.



PROJECT AREA

Forest Creek is one of three creeks that flow through Castlemaine. The focus of this proposal is the 1.3 km section from the Duke St bridge on the Pyrenees Highway (Best Motors) downstream to the confluence with Barkers Creek.

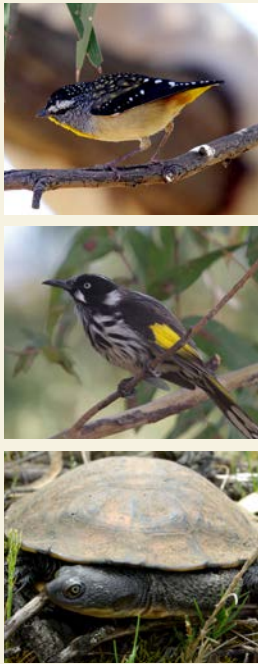
Over 36 bird species and six frog species have been recorded in the project area, as well as Mountain Galaxias (fish), Echidna, Eastern Long-necked Turtle and Black Wallaby.

The project area retains many values including:

- native vegetation providing habitat for birds and animals

- remnant sections of original creek bed
- formation of pools as the creek recovers from historical impacts
- recreational paths for walking and cycling
- historic sandstone walls, and
- carriage of floodwaters.

Whilst there has been considerable rehabilitation works on Castlemaine's creeks, there has been limited work on the urban section of Forest Creek due to complex management challenges.



THE ISSUES

The natural path of Forest Creek was eliminated by the shallow alluvial mining of the 1800s and the huge volumes of sludge produced. The urban creek was diverted into the large sandstone channel we know today, designed to carry away sludge and protect the town from floodwaters.

In a report for Castlemaine Landcare Group by Associate Professor Ian Rutherford (University of Melbourne), and at a workshop of agencies involved in the creek, four management issues associated with this section of the creek were considered.

Urbanisation

Forest Creek receives stormwater from a number of drains in Castlemaine. Stormwater feeds litter, sediments and pollutants into the creek and alters the creek's flow patterns.

Sediment and reeds

Forest Creek from Urquhart Street to Barker Street has accumulated significant sediment. This is partly because the channel is poorly defined and the bed overly wide, allowing flows to slow and deposit sediment.

This moist, nutrient rich sediment bed and lack of overstorey shade provides ideal conditions for Common Reed to dominate.

Vegetation and flooding

There are concerns that the dominance of Common Reed increases flood risk. However studies have shown that removing all vegetation from Forest Creek would have minimal impact on floodwater levels. Past attempts to remove or burn the reeds have proven ineffective.

Fire risk

There is some community concern that reeds and other vegetation in Forest Creek pose a fire risk. Studies by the Country Fire Authority suggest that waterways tend not to increase fire risk. Due to their moist nature, waterways are more likely to act as firebreaks in large fires.

THE SOLUTIONS

The Rutherford report proposed management options to establish a more natural creek form. Importantly, the supply of sediment liberated from gold mining upstream into this section of the creek is almost certainly declining, making the creek easier to manage.

The benefits of a more natural creek form are:

- A deeper channel with faster flows, reducing sediment and limiting reed growth.
- More diverse habitats, including pools.
- Suitable creek side vegetation providing shade and limiting reed growth.
- A more attractive creek with improved environmental values.

The report highlighted a number of steps required to achieve this including the following.

1. Development of a trial project

Establishing a natural creek form in a trial section would demonstrate success of this approach.

The creek is beginning to carve a sinuous channel as sediment supply declines. This could be enhanced by deepening the natural channel, installing rock structures to stabilise the channel and creating pools and riffles.

Engineering designs would need to consider existing channel form, the depth of sediment, hydraulic modelling, protection of heritage values and channel stability.

The trial would include management of weeds in the creek and revegetation with low growing native plants.

2. Investigations to fill knowledge gaps

- Options to manage litter and stormwater input to the creek and improve water quality.
- Ways to increase flows to support aquatic life and maintain the creek form.
- Improve understanding of fire risk.

3. Supporting actions

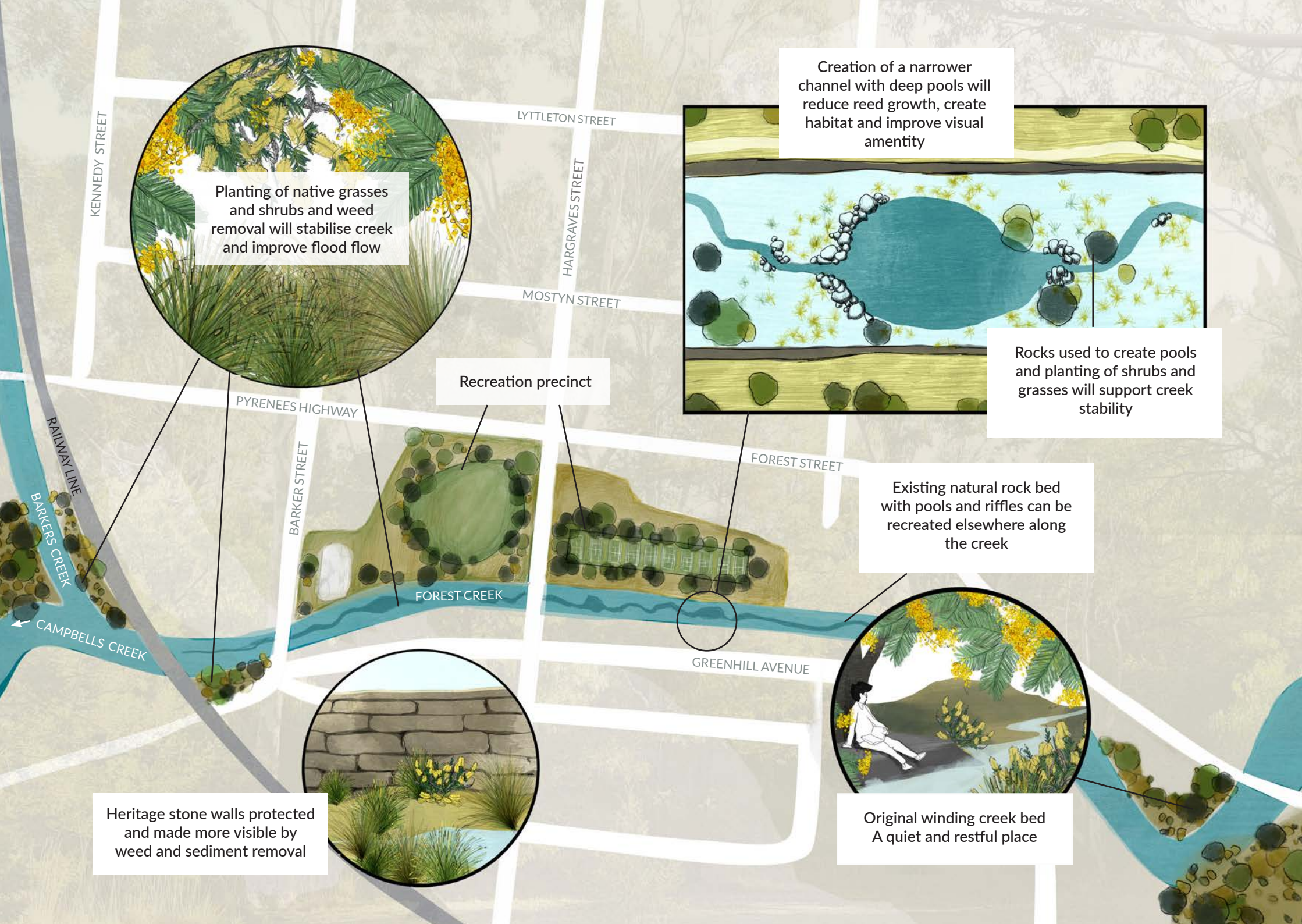
Actions required to support this proposal include:

- Maintain an open channel for passage of floodwaters.
- Protect the heritage of the stone walls and creek surrounds
- Remove weeds and rubbish from the creek.
- Construct and maintain walking paths and bike tracks along the creek.
- Continue revegetation with suitable native species.
- Maintain the upper section of the reach as a secluded place.
- Citizen science program to monitor changes to the creek.

4. Project implementation

Implementing this project requires a collaborative approach between Landcare, Council, other agencies and funding bodies. It is important that planning and works involve the community and be done in consultation with the Dja Dja Wurrung Clans Aboriginal Corporation. The project should align with the Castlemaine, Campbells Creek and Chewton Flood Management Plan and the Castlemaine Urban Waterways Management Plan.





KENNEDY STREET

LYTTLETON STREET

HARGRAVES STREET

MOSTYN STREET

PYRENEES HIGHWAY

BARKER STREET

FOREST STREET

GREENHILL AVENUE

RAILWAY LINE
BARKERS CREEK

CAMPBELLS CREEK

FOREST CREEK

Recreation precinct

Planting of native grasses and shrubs and weed removal will stabilise creek and improve flood flow

Creation of a narrower channel with deep pools will reduce reed growth, create habitat and improve visual amenity

Rocks used to create pools and planting of shrubs and grasses will support creek stability

Existing natural rock bed with pools and riffles can be recreated elsewhere along the creek

Original winding creek bed
A quiet and restful place

Heritage stone walls protected and made more visible by weed and sediment removal



ACKNOWLEDGEMENTS

A complete study of the project reach and management options is presented in Options for the management of Forest Creek through Castlemaine, by Associate Professor Ian Rutherford, University of Melbourne.

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The workshop in April 2016 was coordinated by Castlemaine Landcare Group, with representatives from Friends of Campbells Creek Landcare Group, Connecting Country, Castlemaine Secondary College, Mount Alexander Shire Council, Country Fire Authority, Parks Victoria, Department of Environment, Land, Water and Planning and North Central CMA.

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