Blackburn Bushland Corridor

Effective corridor includes Blackburn Triangle Masons Road Retarding Basin

Ref C21

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Purpose

The purpose of this document is to provide a history of community involvement in the establishment of the many interlocking and complementary elements of the Blackburn Bushland Corridor.

The report provides thoughts for further improvement of the corridor, as there is an opportunity for a Whitehorse City Council Strategic Plan to be tied in with the adjoining Blackburn Lake Sanctuary and Blackburn Creeklands Landscape Management Plans as well as Significant Landscape Overlays.

This report has been issued as a resource for use by residents and the Blackburn community in general, Whitehorse City Council Officers, Councillors, State Government Officers and Parliamentarians.

The following organisations have reviewed the document and provided valuable comments.

Blackburn and District Tree Preservation Society Inc.
Blackburn Creeklands Advisory Committee
Blackburn Village Residents' Group Inc.
Bellbird Residents Advocacy Group
Below the Lake Friends Group
Blackburn Lake Sanctuary
Jeffery Street Association Inc.

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1.0 Introduction

Through the involvement of many, a significant number of pieces of land and waterways have been consolidated to form a significant bushland landscape corridor in Blackburn, between and including Blackburn Lake Sanctuary, along the Blackburn Creeklands and down to Middleborough Road.

This forms the Blackburn Bushland Corridor [C21], and has a rich history, and a special landscape with strong flora and fauna values.

This report builds on and draws on information from a number of other publications. Some previously unpublished information is included, particularly on bird presence in the Blackburn Bushland Corridor, as well as emerging concepts designed to preserve and manage landscape corridors.

2.0 Summary

The classification in 1976 by the National Trust of Victoria for the Blackburn Lake Sanctuary and six landscape streets provided the external credibility to complement local community work that recognised the special landscape, flora and fauna values of the area. [Appendix A]. A timeline of events is outlined in Appendix G.

Land gifts and acquisitions provided links along the Blackburn Creeklands and the re-establishment of vegetation protection.

During the 1960s to the 1990s there were a number of battles fought by residents with developers and the Whitehorse City Council (WCC) and its forerunners to stop inappropriate development of particular parcels of land. Changes have been made and there has been a gradual evolution of Local government Planning Schemes and eventually a Significant Landscape Overlay (SLO) system.

The original 0.2km² enclosed by the National Trust streets has grown five-fold and the total area of the corridor is now approximately 2.5 km long x 0.75 km wide, and includes parks, reserves and Landscape Overlays 1 and 2. The remainder of area is now classified as SL09.

Features of the Blackburn Bushland Corridor

The rich history and landscape has continued to evolve. Many residents adopted the special landscape values as a normal part of living, but in some cases the SLO areas and road reserves are losing trees and canopy despite SLO provisions.

Many of the local organisations set up from the 1950s remain active. They have moved on from the "*create phase*", through the "*improve and enjoy phase*", and are now in the *"consolidate, protect and further improve"* phase.

The Blackburn Bushland Corridor has a rich balance of trees. This includes larger and older canopy trees, containing nesting hollows for birds; medium height canopy trees; and lower and denser trees and shrubs necessary for small birds. In part there is also a thick layer of leaf litter that provides a suitable habitat for insects, beetles and worms for ground feeding birds. The area is sufficiently large to provide an East West bird corridor suitable for nesting and breeding in local areas, but can also be improved through strategic management.

The value of this balance was demonstrated when the local Bell Miner (commonly called Bellbirds) colonies died out in the early 1990's through inappropriate tree removal resulting in loss of food sources. The remaining habitat was sufficiently robust to maintain the presence of other native birds.

However with the recent emphasis on increased housing density created through re building and infill, the landscape once more is under threat.

The Blackburn Bushland Corridor is away from "residential opportunities" such as Box Hill, which has been encouraged and supported by Whitehorse City Council (WCC).

The Blackburn Bushland Corridor is valued not only by locals but also those living in Box Hill and beyond as the area where McCubbin, and Roberts came to paint their famous bushland scenes. They like to walk through the National Trust streets and the adjacent parklands along Blackburn and Gardiners Creeks and to visit the Blackburn Lake Sanctuary. Visitors include organised walking groups, smaller informal groups, cyclists from Handle Bar Harriers and Whitehorse Cyclists, and individuals.

As the population density of Box Hill-Blackburn area increases it will become even more vital for residents, especially those living in apartments with no gardens, to have an oasis nearby.

Unless this area of Blackburn is properly understood and protected from inappropriate development it will be, like the child in the McCubbin painting and the Bell Birds in the Bellbird area, Lost .

It is now time for the WCC to develop a coherent and consistent management plan for the Blackburn Bushland Corridor that respects and includes the valued inputs and improvement work of many community groups as well as updated and consistent interpretations of bushland values.

3.0 Settlement History and early landscape, flora and fauna

3.1 Aboriginal History

The area sits on the land of the Wurundjeri-balluk people, whose language is Woi wurrung. [A20, A21, A28, C17]. Wurundjeri combines two words for Manna Gum and the grub which is found near the tree. These people are from the Kulin nation. They camped along the banks and rivers, leaving traces of their presence in scar trees and middens. The Wurundjeri-balluk were totally dependent upon their local area to supply all the things they needed. [A28].

3.2 Area Description

The area is located on a ridge between Box Hill and Ringwood. The ridge-line is along Whitehorse Road and is made up of a heavy clay soil. Early European settlers did not use this for agriculture as much as the areas to the north and south. This allowed the natural tree cover to be mostly retained, particularly in the area immediately to the south of Whitehorse Road down to Gardiners Creek. [C1]. Today there are still remnant trees remaining in the area, complemented by planting and seeding of many native and non-native trees.

The canopy trees are a critical extension of Blackburn Lake Sanctuary and the series of linear parks along Gardiners Creek and subsidiaries called the “Blackburn Creeklands”.

The following aerial view shows the heavily treed areas.

In a major ecological study of pre-European plant communities across the entire Melbourne metropolitan area, the vegetation was characterised in a series of Ecological Vegetation Classes (EVC's). [C9].

There are a few common attributes that all healthy ecosystems share, such as a few large trees, several shrubs and small grassy tussocks. This is the domain of the larger animals. Kangaroos, echidnas and lizards all need abundant vegetation, while birds and possums rely on nesting holes, which are only found in older trees. [C9].

The Whitehorse district is identified as Valley Heathy Forest (EVC 127). The over-story of these grassy woodlands was variously dominated by eucalypt species, such as Candle bark, Yellow Box, Peppermint, Messmate and Red Stringy Bark. The understorey could include Black Wattle, Golden Wattle, Blackwood and Prickly Tea-tree. The ground layer was diverse and rich in herbs and plants with tubers, tap roots or rhizomes. [C9].

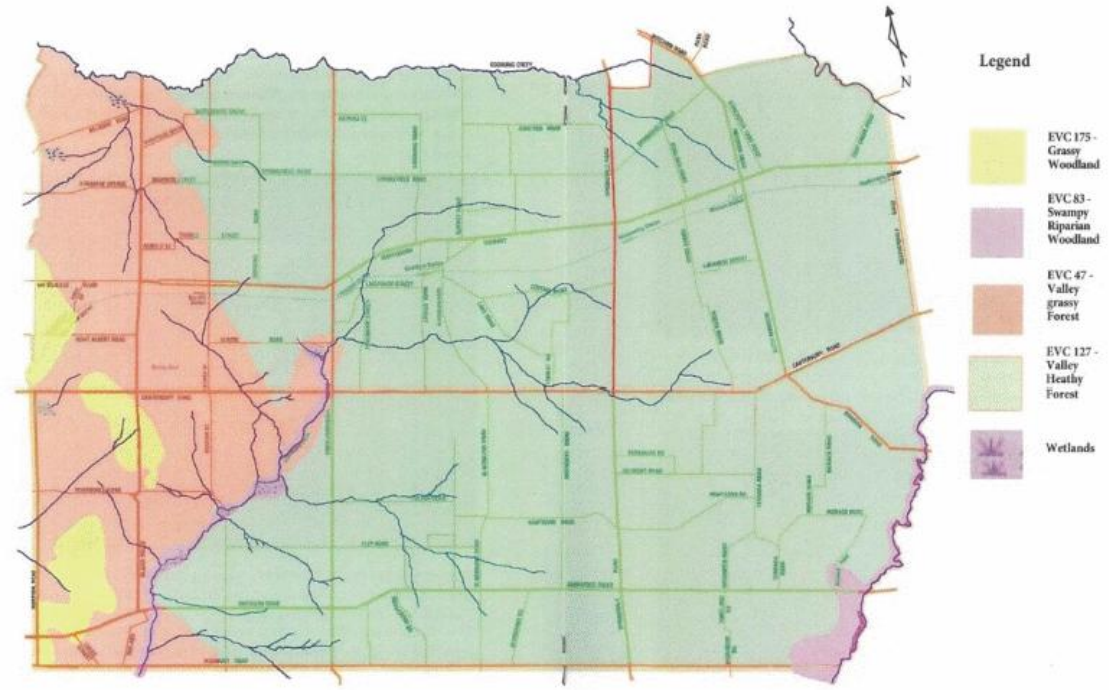


Figure 5: Reconstruction of the stream courses and wetlands and the extent of pre-European EVCs in Whitehorse.

More information on EVC's is available from www.environment.vic.gov.au. and in [C69].

The Whitehorse district is similar to a large extent to the Australian continent, soils are generally infertile, landscape is subject to frequent fires and climate is unreliable. Flora and fauna have adapted accordingly, based on a predominance of eucalyptus landscape.

The Whitehorse district has the advantage of being well watered on average, with regard to rainfall and stream flow. However, in the drier parts of the year water flow was reduced and some streams could become intermittent and more like a series of ponds, i.e. ephemeral.
Birds were the most numerous and diverse animal species in the Whitehorse area, and were thus most frequently sighted. [C9].

The relevance and importance of birds and mammals is discussed in detail by Low. [C44].

"Honeyeaters and parrots benefit from the vast supplies of sugar and starch available from eucalyptus and other bird adapted plants. Mammals and sucking insects, themselves shaped by the landscape, have in turn influenced the birds. Marsupials, having done poorly in some ecological roles, have let the birds such as parrots prosper in their place. Honey eaters and parrots are globally outstanding as pollinators. Far more nectar is available to birds in Australia than on other continents. Australia's eucalypts and paper barks are the only bird-pollinated trees on earth to form forests, and wattle birds and lorikeets are important pollinators of their flowers. Many plants are bird pollinated: banksias, grevilleas, bottle brushes, grasstrees, hakeas and hundreds of eucalypts".

3.3 Early Settlement

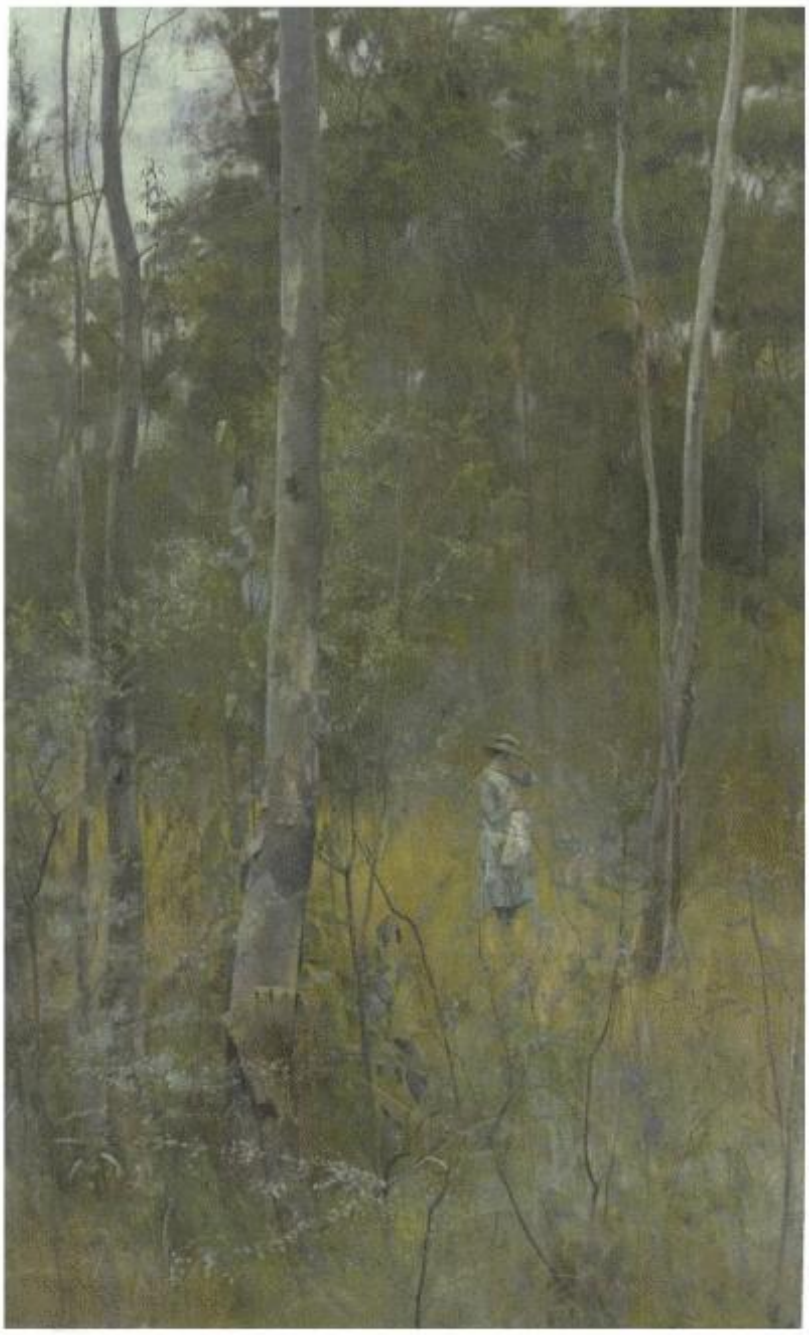
The first European settlement was in the late 1830s. [A34].

In the 1850's the Crown first disposed of land in the district.

In the 1880's camps were started by well-known Australian artists including Frederich McCubbin , Arthur Streeton, Tom Roberts and others in the Blackburn region, south of Whitehorse Road in what is known as Box Hill South. They roamed along the Blackburn Creeklands up to the Blackburn Lake area and painted typical bushland scenes. [A5, A23].

This was a special place because of its tree scape and their paintings were a reflection of life in the early settlements.

These landscapes and sentiments are depicted over this page in the McCubbin "Lost" painting of 1886. [A5].



Frederick McCubbin
Lost 1886

oil on canvas
115.8 x 73.9 cm

National Gallery of Victoria, Melbourne
Felton Bequest, 1940

Also known as 'The Lost Child', *Lost* is one of the most famous of McCubbin's 'story' pictures. Like his fellow Box Hill artists, McCubbin sought to convey a sense of visual harmony between human figures and the bush landscape. The little girl in this painting stands in the middle ground of the composition, surrounded by saplings, a tangle of bush, and long grass. Upright like the young trees, she too is a living element of the landscape. The muted blues and greys in this work set a mood of gentle melancholy that is typical of McCubbin's anecdotal subjects.

3.4 Historical Societies

Early history has been recorded by local historical societies.

The Field Naturalist Club of Victoria, Inc. was formed in 1880. [A19]. The Box Hill district was a favourite area for bird watching. Today the club has special interest groups which focus on Botany, Fauna Survey, Fungi, Geology, Marine Research Microscopy and Terrestrial Invertebrates. Since 1996 the head office has been located in Blackburn. Currently there are approximately 800 members.

The Box Hill Historical Society was formed in 1963. [A21]. The Whitehorse Historical Society was formed in 1965. [A30]. Since then volunteers have worked to collect, preserve and share the unique history of the area.

The Nunawading Historical Society was formed in 1965. [A34]. Following amalgamation of the Whitehorse and Nunawading shires in 1993 it changed its name to Whitehorse Historical Society. [A35].

3.5 European Settlement

The region was settled in the land booms of 1850 to 1865 and in the 1890s. A Model Village was planned around Blackburn Lake. [A3].

Residential development of Blackburn began with the arrival of the railway in the 1880s. For many years this development included small houses used as weekend cottages on large blocks of land. These were later extended or rebuilt and included large gardens in a predominately indigenous bushland setting, complemented by a few non-native larger trees. The bush style evolved as the gardens dominated. [A1, A2, A3, A4, C28]. A chronology of the development of Blackburn is outlined in Appendix F.

However, by 1905 after the collapse of the land boom, Blackburn was not much more than a small dusty township with fewer than one thousand residents. Orchards covered most of the area to the north, while the area to the south was known as Francomb's Paddock. [C7].

In the 1920s, within a few minutes walk from her house "Walsham" at 34-36 Blackburn Road, Edith Coleman as quoted by Danielle Clode [C16],recalled she " *could observe a variety of birds, many of them are quite rare: and the student of insects , beetles or butterflies could add a wealth of material to his collection…… The creek banks were clothed with indigenous vegetation. In spring and summer the air was full of perfume and song of native birds-native perfume and native bird-song! Blue wrens, yellow robins, crested shrike-tits, grey and rufous fantails, harmonious thrushes and many other delightful native birds nested freely under cover of native vegetation...."*

"And then there were the orchids. One could gather large bunches of wild flowers, including many of our lovely orchids, she wrote. Edith found rare little rusty greenhood orchids, growing outside her gate. She describes various midge orchids, the duck orchid Cryptostylis longifolia and the greenhood Pterostylis pusilla, which she cultivated herself. ".

Some of these orchids, as well as fungi still can be found in the Blackburn Lake Sanctuary, as well as in some gardens in the area.

Bolete Fungi *Phlebopus marginatus* from 21 Laurel Grove 2013

Greenhood Orchid *Pterostylis nutans* from 21 Laurel Grove, 2009

In the 1920s Blackburn became a bush retreat from Melbourne.

3.6 Early Archictecture and style

The most prolific designer/builder in Blackburn was Algernon J Elmore who by 1916 had established his house and work shop in Blackburn. He was a proponent of the "Arts and Crafts and Fresh Air" movement of the early twentieth century. He was also one of the pioneers of Victorian hardwood construction of Bungalows. Elmore houses became the predominant style. [B1, B2, B3, B4, B5, B6].

Distinctive external features include timber weather boards and flooring as well as the design of the exterior door surrounds, which has a slotted tongue and groove design. This design allows movement, so as to cope with wood shrinkage as well being able to cope with expansive clay soils.

A number of Elmore's houses remain classified as Heritage buildings.

Elmore heritage house at 22 Laurel Grove, Blackburn

3.7 Post World War 11

The area grew substantially in the boom after World War II in the 1950s and 1960s. As the area was cleared and subdivided with roads, footpaths and houses , land became less permeable and vegetation took up less water, with the result that more drainage works were required in the Blackburn Creeklands. The then Melbourne Metropolitan Board of Works (MMBW) acquired land compulsorily from the 1950s to 1973 to extend the construction of the Mont Albert Road extension- a plan subsequently scrapped - as well as a drainage system. A main sewage drain was laid through the area, the flood water retarding basin known as Sparkes Reserve was constructed and minor work was carried out to improve the flow rate of water through the creek. [A6, C1].

When the subdivisions of Malcolm Street, Molleton Street and other properties on either side of Blackburn Creek were approved, a fringe one block wide of the creek was acquired by MMBW as a protection against possible flooding. [A6].

4.0 National Trust Classification

In the 1970s there was significant public interest in protecting Blackburn Lake . [Appendix C, A3, A15 & A28].

As a result there were many visitors to the area, including tourist buses. These were often being directed along Jeffery St, a narrow tree lined street with an unformed road and a narrow bridge. Initially the bridge was shown on Melway maps, but more was needed to be done to preserve the environment of Jeffery Street.

The National Trust had just formed a Landscape Committee. Robin da Costa approached them and organised a group including Warrick Forge and Professor George Seddon from the Environmental Study Centre, University of Melbourne to walk through the street and around Blackburn Lake. The Trust came up with the idea of recognising the Lake Sanctuary and five other similar unmade tree lined streets in the area. [A15].

It was an interesting time when "Alternative Streets" were a curiosity.

The special value of the area was recognised by the National Trust Citation in 1976 when it "classified" Blackburn Lake and the road reserve and front gardens of six "Bellbird streets": Jeffery Street, Acacia Avenue, Linum Street, Hill Street, Boongary Avenue and Laurel Grove, between Fuchsia Street and Gardiners Creek.[C16 & Appendix A].

In the citation the National Trust term "Classified" means those parts of the physical environment, both natural and man-made, which in the Trust's view are essential to the heritage of Australia and which must be preserved. The National Trust citation states, in part "the area is an oasis in suburbia..the lake and its environs remain largely in their natural condition, providing a haven for many bird species. The streets retain a quiet almost rural character unique in Melbourne".

The treescape arches across Linum Street, facing west to Myrtle Grove.

The canopy trees growing over the street, create a tunnel effect, and the unity of the streets due to the natural screening of the houses by native trees and shrubs along the street is particularly significant.

Following a public meeting held in August 1980 attended by over 400 people, a public appeal under the sponsorship of the National Trust was formed to publicize the issues of further land purchase in Blackburn. [C13].

The National Trust, together with the Gardening History Society, conducted a Suburban Landscape tour as part of Heritage week on 23 April 2017. Approximately 40 people participated.

In hindsight this classification provided the external credibility for the efforts of local groups to work for consolidation of adjacent parcels of land. [Appendix 1].

5.0 Creation of Reserves

5.1 Community Organisations

For over seventy years Council and Community have worked together to enlarge and protect the links between Blackburn Lake Sanctuary along the landscape corridors and Gardiners Creek down to Middleborough Road.

Groups have included:

- Blackburn and District Tree Preservation Society Inc.
- Blackburn Creeklands, Blackburn Lake and Wandinong Advisory Committees and their earlier organisations.
- Road Associations for the maintenance of private roads, verges, drainage and traffic flow management.
- Birdlife Australia.
- Field Naturalist Clubs of Vic Inc.
- Box Hill Historical Society Inc. and Whitehorse Historical Society Inc.
- The Blackburn & District Environmental Protection Fund.
- Blackburn Village Residents Group Inc and the earlier group Blackburn Residents Association.
- Jeffery Street Association Inc.
- Below the Lake Friends Group.
- Bellbird Residents' Advocacy Group.

All these organisations listed are still active in community activities and most have active websites. [A22]. Further details are included in this section.

5.2 Early recognition of the Flora and Fauna Values of the Area

A recognition of the special flora and fauna of the area started early in the twentieth century through the contribution of Edith Coleman, an English born Blackburn resident. She was a prolific writer who made a ground-breaking discovery about orchid pollination. She was also an authority on echidnas, mistletoe, stick insects, spiders and birds. She was the first women to be awarded the Australian Natural History Medal in 1949 for the discovery of the pseudo copulation of spider orchids *Caladenia tentaculata* by wasps. [C16].

The then City of Nunawading purchased Furness Park adjacent to Blackburn Road, in 1941 to preserve native plants. [A1, A2]. It is now part of the Blackburn Creeklands. [C34].

The donation of the Wandinong Sanctuary, 2ha of remnant bushland, by Albert and Janet Hooke in 1973 to the Whitehouse Council "for all times as a sanctuary for native birds, wild flowers , native vegetation and as a place of public resort and passive recreation" showed the way for significant community involvement. [A8, C1, C73]. This Sanctuary is linked by a series open and closed drains to the Blackburn Creeklands at Blackburn Road, to the outfall of Masons Road Reserve at Norris St, and up the outfall from Blackburn Lake Sanctuary. Over this area is a thick landscape as can be seen from aerial photos, hosting bio-links with significant bird life.

The Foundation Committee of management included Ed Kaptein and Les Smith from the Tree Preservation Society, Shire Councillors, neighbours and relations of the donor Hooke family. Over the years there has been a dedicated group of volunteers forming the Wandinong Sanctuary including Anne Warren, David Inglis, Deborah Butler, Jonathon Hunter and Graham Bell.[C74].

The area surrounding the Sanctuary is a rich source of birds and within the Sanctuary has some special flora, including the greenhood orchid shown in Section 3.5.

5.3 Blackburn Lake Sanctuary

A background account of Blackburn Lake is included in Appendix C.

In 1965 a Committee of Management, comprising local residents, was formed to preserve flora and fauna in the reserve. [A28]. Blackburn Lake was declared a "Sanctuary" by Council in response to concerns over motor boating on the lake.

In 1975/76 the City of Nunawading, with the support of some community donations, purchased 5.8ha from Camberwell Grammar plus 13.4 ha from the MMBW.

An Environmental Assessment and Master Plan for Blackburn Lake was prepared by the Committee of Management together with the Nunawading Council's Parks and Recreation Department. This has gradually been implemented. [A3].

In 2006 local groups conducted a successful campaign resulting in Federal, State and Council combining to improve the proposed redevelopment of the relocated Deaf Society site to an aged care facility now owned by Regis Blackburn. Eight residential sites were purchased at the corner of Lake and Central Roads and a more sympathetic development was agreed. [A25, A26, C1]. This area, called McCubbin Park, is now being maintained by a volunteer group.

5.4 Blackburn and District Tree Preservation Society Inc.

Since 1959 The Blackburn & District Tree Preservation Society has had a history of public involvement in Blackburn and beyond and encouraging the use of trees. David Berry has edited an excellent history. [C1].

Throughout its history it has organised a continuing series of talks, working bees, advocacy, published books, organised native flower shows, held walks along road ways, and held corridor workshops etc.

The Society was formed in 1959. On the first Committee were Dr J McAndrew as President, Dr J S Jones as Vice President, Mrs F H Burns as Hon Secretary and Mr Morley as Treasurer. Their first booklet was on *Preservation or Desolation*, which was prepared by Joan Satchwell and Lois Mathieson.

More recent office bearers have included David Berry, the late Les Smith OAM, Ann Clayton, Mary Crouch and Anne Payne as well as others recognised in *Fighting for the Trees*.[C1].

A Springvale Road controversy erupted in May 1961, when plans were announced to duplicate the road and remove everything growing alongside the road between the railway line and Canterbury Rd.

The Society co-opted consultants and submitted plans. Plan B was adopted by the Council and the Country Roads Board and approval was obtained two years later. This culminated in 1966 with a trial planting designed by Ellis Stone along the median strip. The principles were later generally accepted for wider plantings on other road median strips in the area. [C1]. In Feb 1960, a sub committee was formed to investigate the possible need for additional parkland.
The Society has played a major leadership role in many other activities in Blackburn and beyond. [C1].

5.5 The Blackburn Creeklands

In 1981 the Melbourne Metropolitan Board of Works (MMBW) decided to sell land along the Blackburn Creeklands. A successful community action plan in the period 1981 to 1983 was carried out to link between Main Street and Middleborough Road, involving land purchase as well as management.

After the land was purchased by the WCC with government help, the WCC called for nominations for a Committee of Management. A number of the Blackburn Creek Conservation Group nominated and were appointed in 1984 into what was initially called the Linear Park Committee. The first committee then chose the name Blackburn Creeklands for the collection of smaller parks that were now linked. This committee then broadened into the Blackburn Creeklands Advisory Committee "advising on management of open spaces between Middleborough Road and Blackburn Road, as well as carrying out voluntary maintenance, removal of weeds and rehabilitation plantings for Furness Park, Kalang Park and Blacks Walk."[A6].

Other reserve additions included Masons Road Retarding Basin, owned and maintained by Melbourne Water, and the triangle between Blackburn Road and Canterbury Road, restored by the Commonwealth of Australia National Heritage Trust, and now called the Wirreandra Court Reserve.

The combined consolidated area leads from the Blackburn Lake Reserve to Middleborough Road and residential areas are protected by Special Landscape overlays SLO 1 and SLO 2 as outlined in Section 7.0.

Features of the Blackburn Bushland Corridor

Remainder of the residential area is classified as SLO9.

6.0 Improvements

6.1 Blackburn Lake

The Blackburn Lake Advisory Committee works with WCC staff in managing a multi-faceted environmental, recreational, volunteer and maintenance program. It was started in 1965 with five members. They comprised a Councillor, Supt. of Parks and Gardens, Nature Plants Preservation Society, Blackburn and District Tree Preservation Society and the National Trust. [C36].

The WCC has developed and enlarged a modern Visitor Centre as a hub of activity including a comprehensive Education Program. Dorothy Meagher OAM was the Blackburn Lake Education Program coordinator for 30 years. The support of Elaine Boucher in keeping the Education Program afloat and coordinating the program from 2002 is acknowledged. She still is the contact between the Advisory Committee and the Education Officer at WCC.

A legacy from the late Sue Lockwood enabled the WCC to employ an Environmental Education officer in 2009. The Environmental Education Officer, Lisa Moloney, is now employed by WCC, and works full time to provide educational sessions to children from preschool to secondary school in various bushland parks in the City of Whitehorse and supported by a team of local volunteers.

The program is supported by a team of volunteers providing sessions for over 4000 students annually. The program is supported by a team of volunteers providing session for over 4000 students annually. Recent key leaders have included Anne Payne, Peter and Su Dempsey, Elaine Boucher, the late Sue Fenton and the late Sue Lockwood.

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Recent key leaders have included Anne Payne, Peter and Su Dempsey, the late Sue Fenton and the late Sue Lockwood.

In the late 19th and early 20th centuries much of the recreation has revolved around water activities in the lake. However today recreation revolves around the appreciation of Australian native flora, much of which has regenerated over time. In addition there is a strong appreciation of fauna, particularly birds.

A Gardens for Wildlife program, instigated in 2016 and administered with mainly bushland park and indigenous nursery volunteers, is supported by the Tree Education Officer at WCC. A valuable program to empower local residents, and particularly those whose properties are close to the bushland corridors, to consider the importance of planting in their gardens in supporting our wildlife corridors and all that goes with it.

6.2 Below the Lake Friends Group

Downstream from Blackburn Lake is the Lake Road Drain, owned by Melbourne Water.

This continues on the surface as well as under Blackburn Road to Furness Park, along the Blackburn Creeklands and then Gardiners Creek. Public areas include Jamieson and Naughton Grove Reserves. The Below the Lake Friends Group maintain these areas with extensive weeding, mulching and planting of trees. The vision is to link the Blackburn Lake Sanctuary to the Jeffery St area with a weed free and regenerated belt between the two areas, that will facilitate movement of smaller birds and creatures in particular, as well as preventing the spread of weeds such as Wandering Tradescantia. The Group has been successful in obtaining Melbourne Water Grants.

6.3 National Trust Streets

Most power lines were relocated underground or bundled, one of the first in Melbourne. This work was paid for by the residents.

The roadscape within the National Trust area is also rare. The roads were sealed in the late 1970's. They are narrow 3m wide private roads with unformed edges. The Resident Road Associations have maintained them over many years and have also been involved in verge, traffic control management and drainage issues. [D1-D3].

Associations have included:

- Acacia Avenue and Waratah Crescent, with less formal structures
- Linum, Laurel and Boongary Road Association. Following approval of the 2017/18 budget the WCC has taken over the Bellbird area and will upgrade the roads at the residents' expense. The upgrade was to maintain the nature of the present narrow winding roads. A strategic management plan for the verges is yet to be developed.
- Jeffery Street Association Inc., who also have an active social and integrated work program with the WCC on verge planning and maintenance.

Any increase in multi dwelling development will impact not only on tree coverage on a site but also on the much valued and vegetated nature strips. These streets are not suited for verge, nature strip or kerb side parking. Also, more plantings on verges will be required to replace trees as they age.

6.4 Myrtle Grove

In the early 1980s the Myrtle Grove pavement, south of Fuchsia St was reformed. It used to be wide and gun barrel straight and poorly made so that the rear of cars scraped the bitumen when backing out. The Council proposed to remake the road entirely.

Helen McFarlane and Sonya Cameron mobilised the residents and the council was persuaded to make the road narrower and curved, still within the boundaries of the original wide road, and likewise the paved footpath curved and only on one side.

It was a win-win: cheaper for the council and something special for the residents. [A32].

6.5 The Blackburn Creeklands

The group is now called Blackburn Creeklands Advisory Committee, and is one of 17 managed by WCC. [C36].

Initially Brian Crouch, Graham Burgess, Richard Elvins, Hilde Zappe, Cr Helen McFarlane, Geoff Lodge, Thelma Osborn, Megan Short, Peter Short and the Head of Parks and Recreation, John Brandenburg, were involved. More recently leadership has come from Megan Short, Mary Crouch, John McMahon, Anthea Swan, Alan Lodge and others. [A10, A12].

Early work to produce a Strategic Plan is outlined in [C14, C34, C35 and C36].

The Victorian Government rezoned the remaining MMBW land so that it could be purchased at an affordable price by the WCC.

The Committee has led a major re-vegetation of the Blackburn Creeklands through regular working bees involving many local residents.

Margaret Ray, the Victorian member for Box Hill at the time, and Nunawading Cr Wendy Reid were instrumental in pushing through the acquisition of the MMBW land in the Kalang section of the Blackburn Creeklands.

More recently a single house on low lying land west of Main St and south of the Blackburn Creeklands, was demolished and the land incorporated into the Blackburn Creeklands.

The Blackburn and District Tree Preservation Society has contributed to local and wider tree protection awareness and support programs. It has also issued a range of specific publications and education for local residents which has led to Local and State Government involvement. [C2 to C8].

Inspection of aerial photos from 1945 onwards indicates that with the maturing of trees as well as new plantings much of the canopy coverage of The Blackburn Creeklands has improved. Further methods of measuring changes in tree canopy are outlined in [C48].

6.6 Indigenous Plant Nurseries

Tens of thousands of indigenous and native trees have been planted over time. Native bird life has increased and is monitored by groups conducting regular bird surveys. Many of the trees for the Blackburn Creeklands have been provided by the Whitehorse Community Indigenous Plant Project, Inc, formerly known as the Nunawading Indigenous Plant Project or NIPP, which was supported by a Bi-Centenary Grant. Cr Wendy Reid and Geoff Lodge were involved. The group was formed as a not-for-profit organisation run by volunteers in conjunction with a committee comprising representatives from the Advisory Committees of the Bushlands Parks and the local communities at large to manage the Bungalook Nursery.

It is closely associated with the Blackburn & District Tree Preservation Society Inc. Parkswide Department of the Whitehorse Council provides invaluable support. [C1].

Another native plant nursery organisation, Greenlink Nursery, was established in Box Hill North in 1988. [C29]. They also provide plants for the Blackburn Creeklands.

In addition to providing a service to the community in providing indigenous species with local provenance, the volunteers also form a supportive community for one another and welcome visitors with open arms.

6.7 Blackburn & District Environment Protection Fund

This Fund was established in 2008 and the Blackburn and District Tree Preservation Society is the Official sponsor. It has received sizeable donations from private contributors.

The Fund objective is to attract and use donor funds to protect and enhance the natural environment of the City of Whitehorse by:

- Building community support to promote and improve the valuable heritage of bushland in Whitehorse.
- Encouraging retention of existing native trees, shrubs and flowers that support native wildlife.
- Supporting and funding Community groups working with council to protect and enhance bushland. [C32].

6.8 Interfaces between Community Groups and WCC

In the WCC municipality 10% of space is council managed space. There are 75,000 trees in the open space and a total of approximately 300 ,000 [C51]. In the open space a number of community groups are active. Currently there are 17 Community Advisory Committees and a number of Community nurseries in roles of maintenance and improvement. These groups interface with the Manager, ParksWide and Community Forum held to outline progress. [C52].

There are gaps in process and the absence of groups including those associated with National Trust Streets.

With likely future changes in the WCC structure and the changing roles there is a need for further clarity and communications with Community groups. It may be worthwhile to benchmark the organisation, roles and relationships with Community groups. One such council could be Clarence Council in Tasmania and their Natural Resource Management group. Others include Councils in Victoria that have a larger canopy cover.

7.0 Protection with Landscape Overlays

7.1 New Concerns

With the initial creation of this special area in the 1980s many residents worked with Council to save this area from inappropriate development. [E1-10].

Residents were initially concerned about a number of cases of overdevelopment including:

- A developer knocking down a house and garden at 18 Linum St and digging a large hole for an underground car park, without a permit. The site remained undeveloped for many years.

- Removal of a heritage Elmore house on the corner of Fuchsia St and Laurel Grove when the family home of Miss Pearl Cross was sold. The lot was then subdivided into three and double storey houses were built on each. Soon after a large Yellow Box died at the corner and was not replaced for more than 30 years.

These concerns led to a large public meeting of 400 residents in October 1982 that backed a campaign for stricter controls on all developments in the area.

The Nunawading Council then responded with changes to:

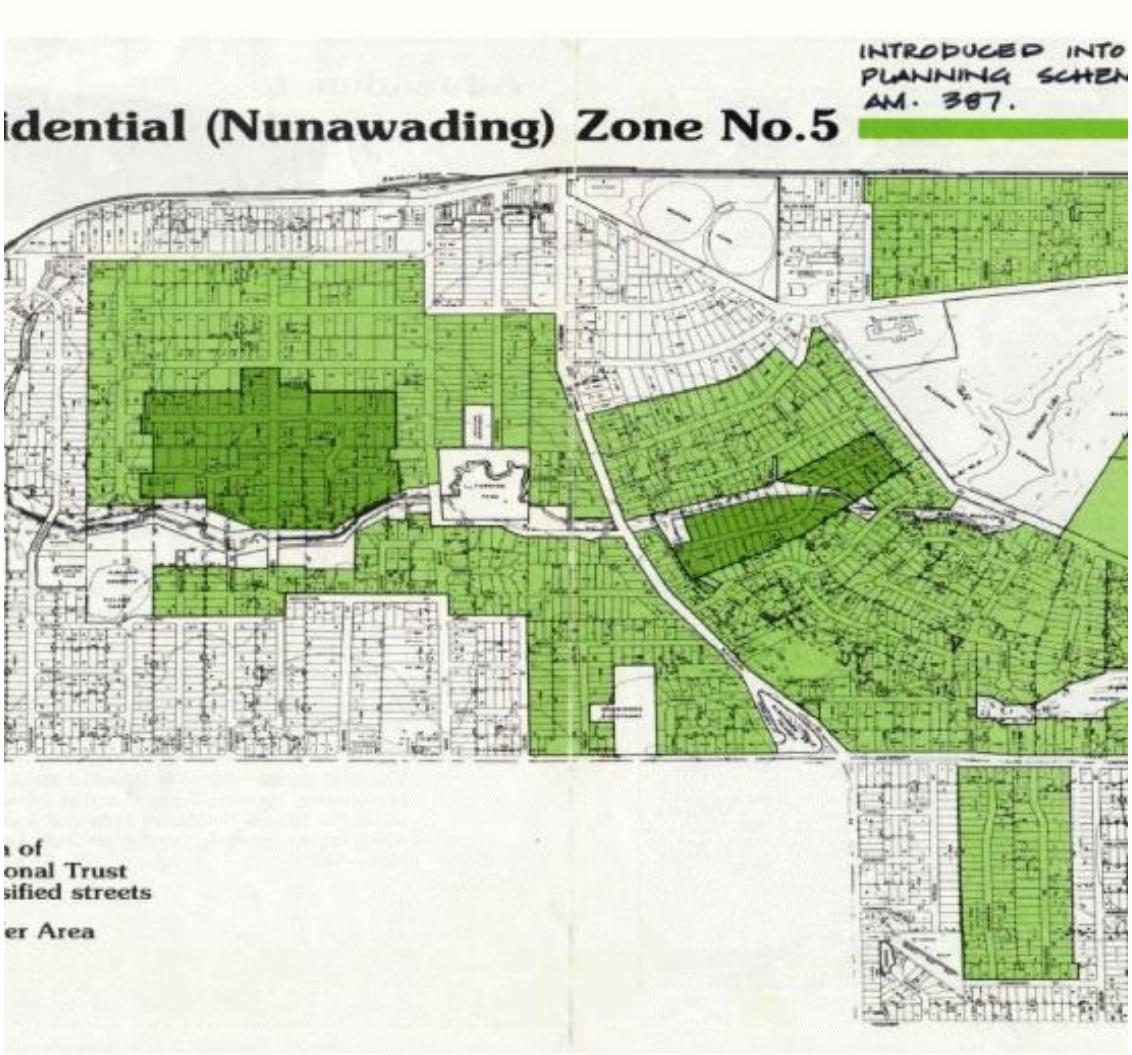
- Prevent over development
- Preserve streetscapes already classified by the National Trust
- Protect the treed character of the area, and
- Ensure all development is in sympathy with the area's character.

7.2 Creation of Special Residential Zones (SRZ5)

The public meeting led to the formation of an Advisory Committee of residents and the drafting of a Local Development Scheme [E1]. Jim Lambert was Vice President of the Blackburn Residents Association and Jim Chambers the President at the time. David Morrison, Ann Clayton, the late Les Smith and the Blackburn & District Tree Preservation Society also made valuable contributions. This document in 1986 led to the concept of a Special Residential Zone (SRZ5) that aligned with the six streets classified by the National Trust.

SRZ5 was initiated under the Local Development Scheme and was extended through the efforts of Brian Crouch and others to cover 53 buffer streets as shown in the next figure. It was the first in Melbourne. [A18].

Many Local and State Government leaders contributed, including Mayors Keith Satchwell and Wendy Reid, the Cain Government and Planning Ministers, including Tom Roper and Jim Kennan.


INTRODUCED INTO
PLANNING SCHEM
AM. 387.
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7.3 Planning Schemes

In August 1993, the Minister for Planning and Local Government announced a program of significant reform. The Department of Infrastructure worked with local government and others on the preparation of State standard zones and definitions, a new format for planning and a redirection to a more strategic focus. The Planning and Environment Act of 1987 was amended.

In December 1994 the former cities of Box Hill and Nunawading were amalgamated. This united suburbs which had formed the original Shire of Nunawading more than 100 years ago.

As with the zones, new standard overlays for State wide application were included. Generally overlays may only make requirements about development, not use. Overlays do not change the intent of the zone. Prior to 1999 the Planning Scheme was essentially a local document.

SRZ5 was reviewed in 1995 and tighter controls were approved in June 1998. SRZ5 was converted to SLO1 and SLO2 in the new Land Planning Scheme in 1999. This is reflected in the present WCC Planning scheme. [A33].

Parts of properties in Jeffrey Street containing the creek, as well as a lane way from Alandale Road and Blackburn Road were at the time reserved for Proposed Public Open Space with a Public Overlay as potential to be acquired. When the new planning scheme was introduced in 1999. Both the Council and the Panel/Advisory Committee agreed that the Public Acquisition Overlay be deleted. Thus an opportunity for a linear path between Blackburn Road and Blackburn Lake was lost. [A36, A37]. Most of the reserved area was included in SLO1, while the laneway and 89 Blackburn Road as SLO2.

The Character Objectives to be achieved under SLO1 are stated below, and SLO2 was similar but with lesser decision guidelines.

Landscape Character Objectives to be achieved under SL01 [A33]

1. To retain the dominance of vegetation cover in keeping with the bush character environment.
2. To encourage the retention and regeneration of native vegetation for the protection of wildlife habitat.
3. To ensure that a reasonable proportion of a lot is free of buildings to provide for the planting of tall trees in a natural garden setting.
4. To encourage the development of sympathetic buildings within an envelope, which encourages the maintenance of a tree-dominated landscape.
5. To ensure the buildings and works retain an inconspicuous profile and do not dominate the landscape, and
6. To ensure that the development is compatible with the character of the area.

In the Decision Guidelines, a >15m tree canopy density of 1 per 100 square metres is indicated for SLO1 and 1 per 150 square metres indicated for SLO2. These densities reflect existing overall averages.

Additional tree planting may be required to replace those removed. In addition, middle and lower story plantings may be required to meet the Character Objectives.

7.4 Ratification of the Whitehorse Planning Scheme

The first test case of the new by-law came in 1983 with a development at 21 Myrtle Grove, just outside the National Trust streets. Council officers opposed the development, but Council overruled and granted a permit to an ex-Councillor in 1983, in-spite of contravention of local planning regulations. [A37].

This action has left a lasting impression on many long term residents in the area.

In 1986 the Whitehorse Planning Scheme was further ratified and supported by community groups and adopted by WCC in 2010.

7.5 Formation of Blackburn Village Residents Group Inc

In 1987 residents were so concerned about the proposal for a large scale shopping centre in Blackburn that they formed the Blackburn Village Residents Group Inc from the earlier Blackburn Residents Association. BVRG has continued to stand up for the community values of Blackburn.

Founding members included Frank Barnes, Ian Swann, Gordon Taylor (Chairman), Angela Taylor (Secretary), Ron Grainger, Maree Harrison, Malcolm Anderson, Gary Macleod, Malcolm Wright and Greg Brown (Treasurer). Recent leaders have included Mike and Helen Taafe, David Morrison, Ron Grainger, Anne Payne, Kelly Papadopoulos, Brad Hogan and Lyn Smith. [A17]. David Morrison has had a long-term involvement and is the current Secretary, with advocacy relating to planning matters affecting Blackburn at local, State and Federal levels.

8.0 Landscape Evolution and Management

8.1 Within the City of Whitehorse

Within the City of Whitehorse tree canopy has now dropped to around 20%, which makes Whitehorse one of the most tree canopy impoverished within the middle ring of metropolitan councils in Melbourne. The Eastern suburbs have experienced the greatest canopy loss in the period 2014-2018 with Whitehorse (2.3%), Manningham (2.5%) and Maroondah (3.2%) filling 26th, 27th and 29th places as the worst performing of 30 metropolitan municipalities in the study. [C60].

Differences can arise because of use of particular software, definition of canopy, lowest height measured and report emphasis.

There are other groups, including WCC, who reported 2014 canopy cover using i-Tree Canopy Software that identifies trees from aerial imaging and does not take tree height into consideration and may have captured trees <3m. [C69]. Benchmark comparisons [C75] with neighbouring Local Government Areas are

Local Government area	Tree%	Shrub %	Grass %	Hard %
Whitehorse	22.9	7.5	21.9	47.8
Monash	19.4	6.3	25.0	49.3
Boroondara	28.1	8.0	15.5	48.4
Stonnington	25.0	6.8	11.0	57.2
Glen Eira	20.0	6.5	15.0	58.5
Kingston	14.2	4.6	35.6	45.6
Greater Dandenong	8.2	2.6	49.8	39.4

A definition of tree canopy by the International Society of Arboriculture is “a woody perennial usually having one dominant trunk and a mature height of greater than 5 meters (sic)”.

WCC currently measure all canopy to grassland. It would be useful to use a standard definition of 5m. It would also be useful to measure canopy in height increments for small, medium and large canopy trees. Figures given in [C69] indicate for 2014

Tree height, m	Area,ha	%
3-10	915	14.2
10-15	284	4.4
15 plus	142	2.2
Total	1341	20.9
0-3		Difference in “canopy measured”

While area is one measure it is also important to have a measure of numbers of trees for control purposes.

These classifications are similar to that used by BirdLife in describing canopy heights that encourage bird life.[Appendix B].Different canopy heights also are applicable for different soil conditions as is apparent in the differences in SLO1, SLO2 and other SLOs .

A comparison is given in [C69] for % of lots for existing cover.

	SLO1-8	SLO9
40-100%	21.9	3.6
30-40%	39.8	7.6
20-30%	31.8	31.1

10-20%	6.5	50.7
0-10	0	6.5

Clearly different strategies are required to sustain and increase canopy in each SLO, so as to establish the right strategy for each are. In SLO1 and SLO2 it might be a focus on creating and maintaining a bush environment, while in SLO9 it may be in maintaining a control of trees removed and adding complementary canopy.

Much more work is required by WCC to have a valid measurement and control tool.
There are a number of factors that impact canopy cover changes in time. These include

+ve increase	-ve Decrease
Residents planting new trees	Residents want to remove trees in existing gardens, without adequate replacement Developers want to remove trees in existing gardens, without adequate replacement
WCC planting new trees	WCC and other govt departments remove trees to add services, roads, etc
	Developers want to remove trees in infill and new subdivisions
Trees grow and the canopy increases	Aging of trees that fall down. Many trees are +70 years old and are reaching the end of their Safe and Useful Life expectancy.
WCC implement existing planning controls well	Poor implementation of Planning controls
	Changes in planning controls to encourage development
WCC creates a positive attitude for the planting of new trees	
Residents maintain a positive approach to tree canopy	State government wants to encourage development over increase in tree canopy

A balance is required to put each factor in perspective and to estimate if enough is being done to achieve the vision within the timescale outlined by WCC.

The WCC goal is to achieve an increase in tree canopy from 20% to 30% by 2030. [C51]. However the detailed strategy of how to get there is not clear and there are no clear implementation projects.

While the implementation of Planning Scheme Amendment C219/Significant Overlay 9 is directed at the implementation of tree removal permits across the municipality, the likely effectiveness is not yet clear. Issues include [C61].

- The lack of transparency of the present tree protection controls in SLO1 and SLO2.
- Differences in tree dimensions within the different SLOs as well as required setbacks.
- No permit required to remove Environmental weeds.
- The (miss)use of “Dead/Dying and Dangerous” that is arbitrary in nature , not based on a considered risk assessment, and can be used to circumvent the need for WCC scrutiny.

as well as

- The lack of any habitat considerations, particularly consideration of roosting and bird hollow issues and the need to satisfy the SLO Landscape objectives to be achieved including

"To encourage the retention and regeneration of native vegetation for the protection of wild life habitat", particularly in SLO1 and SLO2.

A broader strategy is required to identify

- Which areas and targets are part of the 2030 vision and a yearly reporting on canopy changes.
- What roles will WCC and residents play in achieving these yearly changes, and
- Greater emphasis to be placed on achieving the 2030 vision by use and administration of the Planning Scheme and also by positive encouragement of residents, developers and the WCC staff.
- Improving the credibility of the Permit for tree removal process.
- Detailed Yearly reports to the Council and residents by the CEO on Landscape evolution strategy, progress and changes.

8.2 Within SLO1 and SLO2

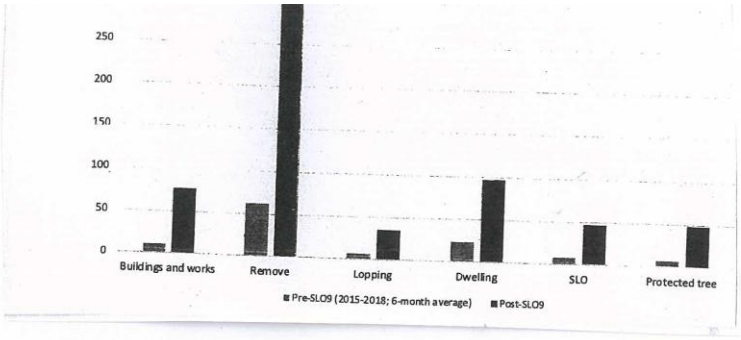
Since early European settlement, within SLO1, there has been limited clearing due to the protection provided by reserves and the location of houses on reasonable size blocks. Additional plantings have been made of both indigenous as well as non-indigenous trees and lower stories. Inspection of aerial photos from 1945 onwards shows there has been a gradual densification, particularly around the Blackburn Creeklands and in SLO1 as trees gradually age.

A recent tree survey in Acacia Ave measured *Eucalyptus melliodora* (48 specimens), *Eucalyptus macrorhyncha* (23 specimens), species predominated with other eucalyptus (Manna Gum, Messmate, Silver Leaf Stringy Bark), together with *Eucalyptus viminalis* (Manna Gum), *Eucalyptus obliqua* (Messmate) *Eucalyptus cephalcarpa* (Silver or Mealy Stringy Bark), several acacia species, *Casuarina* (She Oak), and *Bursarias spinosa*. Around 60% of the species identified were indigenous and remnants of the local bushland. [C1].

8.3 Vegetation Removal Applications

Since the introduction of the fast track and cheaper VicSmart system under the Victorian Planning Provisions Clause 42.03 (SLO) and decision guidelines a Clause 59.06 (Remove, Destroy or Lop Tree) there're has been a significant increase in applications [C69].

While this is in a similar time frame for the interim introduction of SLO9 and records are not sufficient to separate the two, it appears that approximately half the increase is in well treed areas. The increase is partly due to the multiple applications for individual trees on the same property using the same arborist report. This anomaly needs to be corrected to establish a time frame or else be considered as a Planning Application.


250
200
150
100
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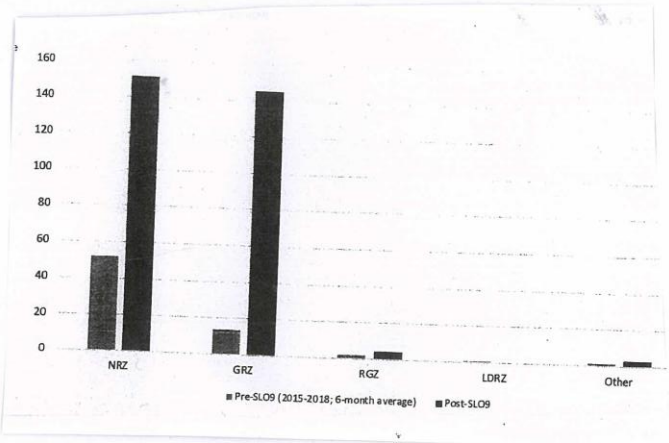
Buildings and works
Remove
Lopping
Dwelling
SLO
Protected tree
Pre-SLO9 (2015-2018; 6-month average)
Post-SLO9


160
140
120
100
80
60
40
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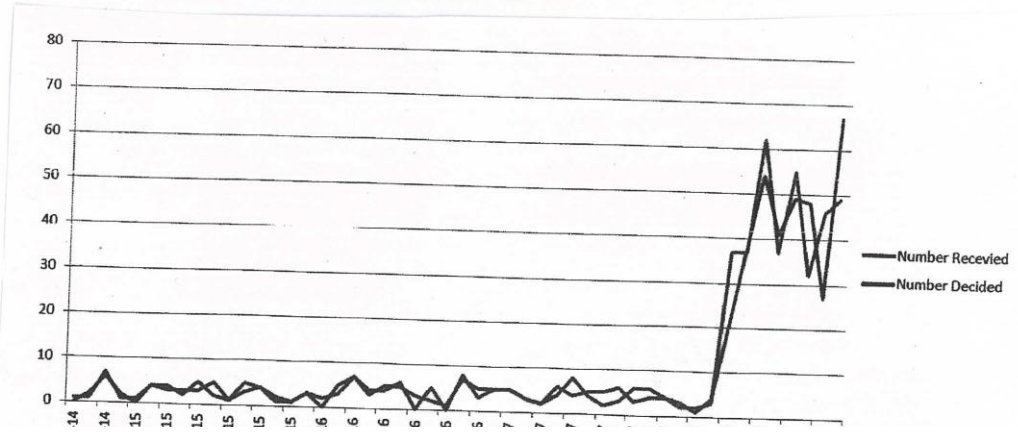
NRZ
GRZ
RGZ
LDRZ
Other
Pre-SLO9 (2015-2018; 6-month average)
Post-SLO9


80
70
60
50
40
30
20
10
0
Number Recevied
Number Decided

8.4 Removal of Environmental Weeds

“Weeds are species that invade and thrive in our native bushland where they do not occur naturally. They commonly occur in gardens, often spreading into our native bushland areas.

These weeds tend to dominate, threatening the natural balance of the remnant indigenous flora and fauna of Whitehorse. By removing the following species from your garden you can help protect what remains of our native bushland.”[C11].

Weed species provide a valuable food source for bird species, eg Australian King Parrots, Gang Gang Cockatoos, Eastern and Crimson Rosellas frequent cotoneaster, privet and hawthorn vegetation during fruiting times. Yellow-tailed Black Cockatoos are seasonal visitors feeding on pine tree cone seeds. [C75].

There is quite a body of knowledge of why to remove Pittostrum [C72]. However there is less knowledge on the interaction between bird life and trees.

It is useful to look at the issue of Sweet Pittosporum,*Pittosporum undulatum.* This species accounts for a significant portion of the existing Whitehorse tree canopy.

It has coarse grey bark and glowing green leaves. The small, white, highly fragrant flowers are followed by orange-tan berries which can persist for several months. It grows up to 14m high. They trees can have a very dense upper story that provides shade, but also limits any growth under the tree. Removal can result in new shoots. However, if done well, with adequate new plantings, limited species richness can improve after 10 years. [C72}.

While there are isolated pockets, particularly in older neglected garden sites, it is not apparent that they are spreading into parks and bushland in SLO1 and SLO2, largely due to the efforts of volunteers maintaining these bushlands. The spread is largely attributed to the female trees (but also to a limited effect of hermaphroditic trees with both stamens and pistil present).

There are downsides to mass removal. This can

- Result in an immediate loss of canopy, in conflict with the present canopy vision
- Affect bird life in a number of ways, including a loss of a rich source of seeds for some birds
- Provide roosting sites for the rare Powerful Owl been present in the Wandinong Sanctuary area.
- Provide protection of adjacent nesting sites for the Tawny Frogmouth, and
- Provide nest sites for the Grey Butcher bird. [C75].

It would appear that a more balanced approach would be a better option would involve

- Separate identification of male and females in the Preliminary Arborist Report
- Preference given to removal of female trees, followed by a staged removal of male trees where they currently provide significant canopy, residual landscape protection and useful bird habitat.

- Replacement on a one for one of all trees removed with suitable large canopy trees and other medium canopy trees that a seed bearing and attractive to local bird life.

These actions would fit with an ecologist assessment of the Landscape Character objective to be achieved.

8.5 Impact of Major excavations

Within the Whitehorse municipality underdeveloped land is becoming scarce and increasing emphasis is on intensive infill developments. With this change there is an increasing trend to include major excavations that allow for construction of underground car parks, as well as habitable spaces for theatrettes, games rooms, retreats, dining rooms, toilets, etc.

This trend is evident in both commercial and residential developments. Unlike some other shires , there is no guidelines for basements issued by WCC.

In many cases the boundary of the excavation matches the size of the ground floor level development and the development is all below ground level.

However in some cases the excavation can be larger than the ground floor developments, with the roof of the engineering basement contiguous with the floor of the ground floor. Both roof and floor are above ground. In these cases the Site Coverage calculations must include both. [ResCode Planning Practice Note 27].

There can be very significant volumes of material excavated. A large excavation could be 1200m2 x av 6m deep and involve up to 1300 x 10t tipper trucks. This traffic, and associated concrete pumps, concrete delivery trucks, etc can have a significant impact when entering the public road system.
It can also have an impact on trees with TPZ close by. At present WCC and Vic Roads make assessments of the impact of the development without any form of Construction Plan. This can lead to a compromise of vehicle and pedestrian safety on busy public roads.

There are also significant impacts caused by the two main types of excavation, namely dry and wet basement. The particular design is influenced by trees and space close to the walls, the presence of a water table close to the surface, and other drainage issues. Hydrological studies, water table location and geological soil studies are required to make an impact assessment.

8.6 Pruning in SLO1 and SLO2

Pruning of amenity trees is usually carried out in accordance with AS 4373-2007. [C59]. Some extracts are outlined in Appendix H including “trees with hollows and other likely habitat may need further assessment by an ecologist or wild life specialist.”

This is particularly relevant to SLO1 and SLO2 overlays where there can be a significant level of fauna.

In these cases, including on streetscapes, proposed pruning should be based on an ecological assessment that includes identification of bird hollows, roosting perches and protection of these features by other trees.

8.7 Tree Hollows

As trees age they provide a range of food resources, nest sites and shelter not available in younger trees [C24]. For example tree hollows are a prerequisite for survival of one third of Victorian mammals and one third of land birds. [C25]. The hollows only begin to form in trees which are more than 300mm in diameter and only become common in trees more than 700mm across. Such trees (more than 700mm across) are usually at least 100 years old and many take a further 100 years before they develop hollows large enough to provide nest sites for larger mammals such as, possums and or birds such as owls and cockatoos or specialist roost sites for some species of bats.

Many birds living in the area totally rely on nesting hollows. [C31]. These include bird such as Cockatoo, Galah, Lorikeet, Parrot and Rosella, as well as possums and bats. It is pleasing to see the WCC response to saving hollows in the Blackburn Creeklands. [C37]. However, a recent case study points to the overall need for WCC to improve its response to saving these hollows in SLO areas. At 21 Laurel Grove North many trees and the understory, including one with hollows as shown in Section 9.7, were removed under a verbal WCC approval process without an arborist assessment as to the state and value of the trees. Consequently, the site has been overtaken by Noisy miners.

8.8 Management of Planning Applications

As outlined in Sections 8.3 to 8.6, there is a need to consider a wider range of issues in a heavily treed environment that has a significant wild life habitat, such a SLO1 and SLO2, than a standard area.

The following should be carried out to establish the impact and form part of the Planning Application

- An ecological report with the required action be prepared as part assessing the Landscape Character Objectives to be achieved.
- An Arboricultural Impact Assessment be prepared once the final layout is complete, with contents as defined by AS 4970-2009.
- A concept for any significant excavation that is based on geological data, position of the water table, likely drainage from inside and outside of the basement, likely hydrological and moisture levels before and after the excavation and impact on existing and proposed trees within and outside the development.
- With the use of construction data obtained above a draft management plan for road traffic involved in the major exaction.

  These issues affect neighbours, who should be able to object and comment if not satisfactory a part of the Planning Application Process rather than be resolved in a non transparent way in the Building Application Process.

8.8 Protection and regeneration of the National Trust Streets Arching Landscape

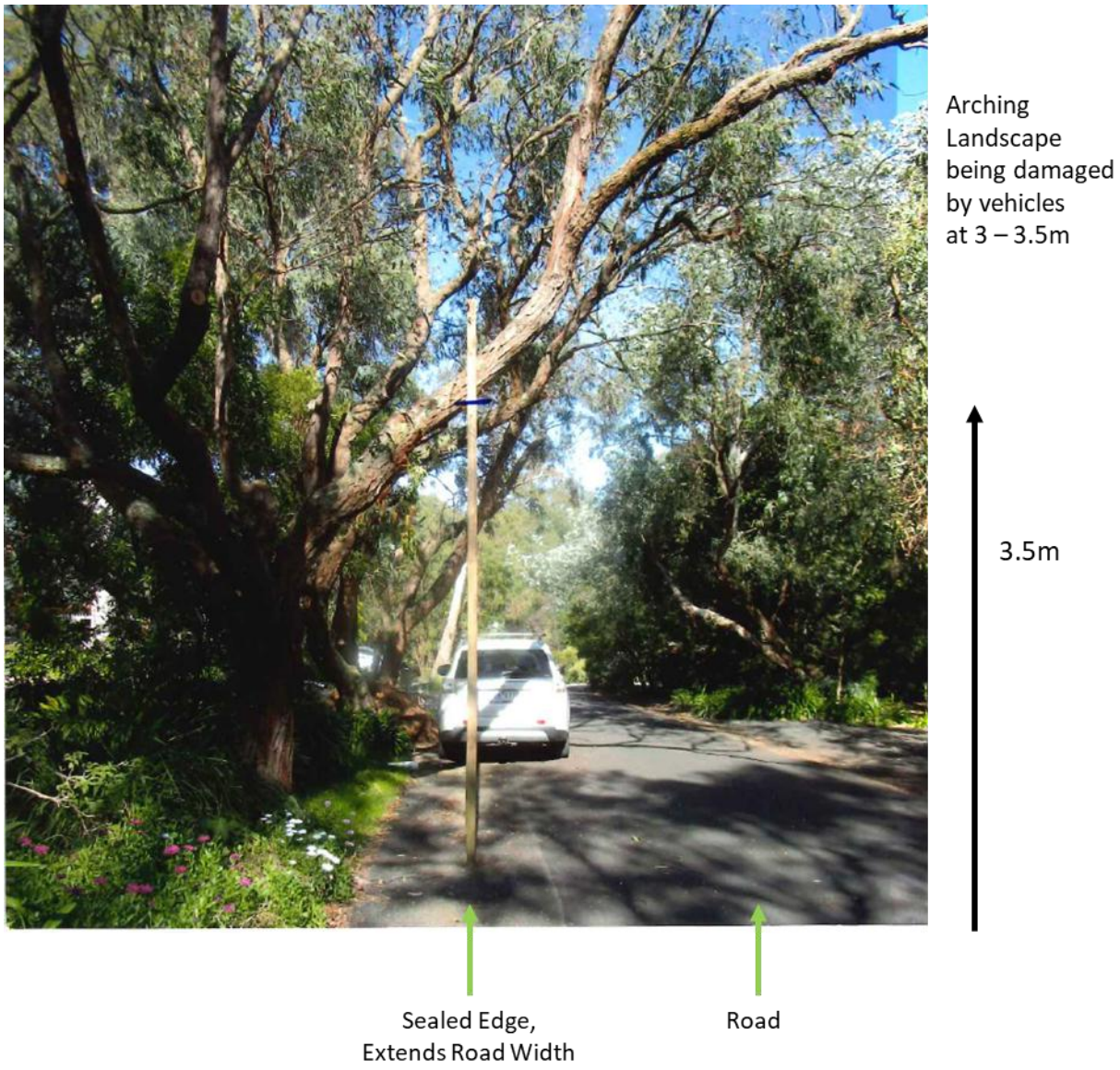
The recent work by WCC on Linum St, Laurel Grove North and Boongary Road to take over from residents and maintain the roads under a Special Charge Scheme has been a disappointment to many

residents. One particular issue was the unilateral decision by WCC to seal the spoon drains, widen the road in parts and to “trim” the streets landscape.

This has had the side effect providing a greater width for trucks, putting in danger the arching trees and encouraging a higher speed in the streets. Present damage could be limited by separating the spoon drain from the road by insertion of a series of humps along the interface.

Also there appears to be no long term WCC Management Plan.

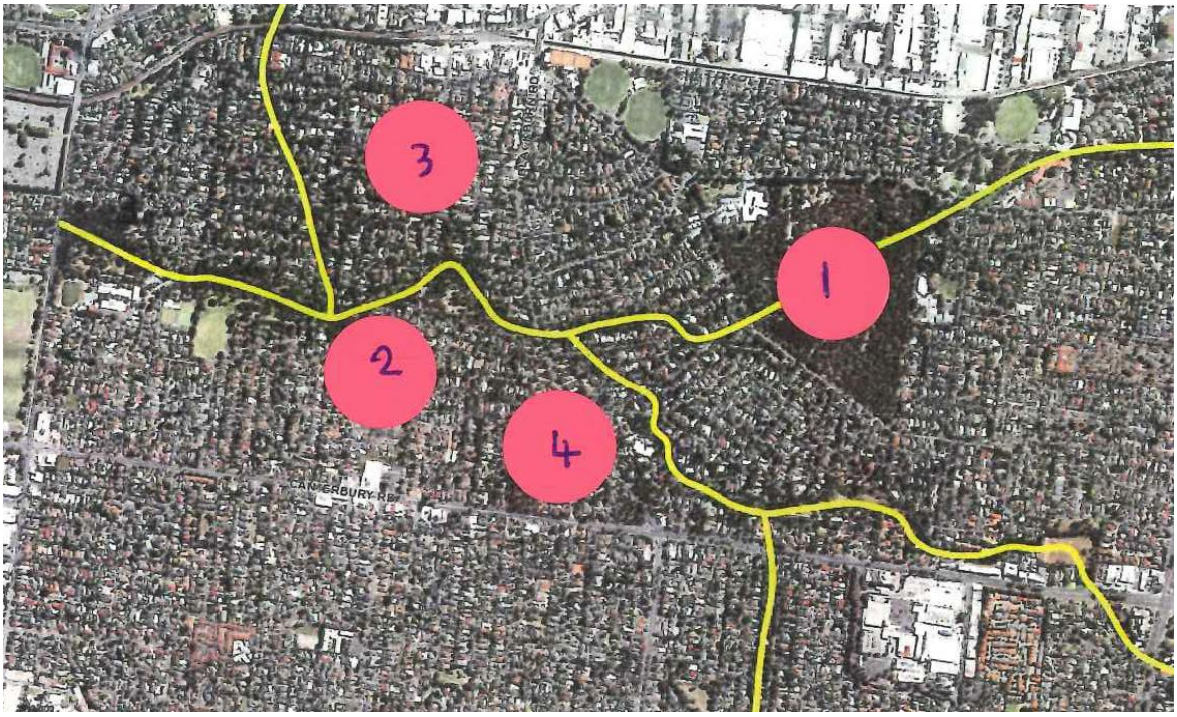
This approach does little to support residents who have “Been passionate about trees.”



As a start the management plan could include a ParksWide trimming and planting philosophy consistent with maintaining the arching landscape over the next twenty years. This could build on the Homewood study of 2013 to identify all tree conditions, bird hollows and locations, and a strategy for maintenance and replacement of the arching based on risk assessments in a bush environment and not on dead/dying judgements.

9.0 Bird life studies within the Blackburn Bushland Corridor

9.1 A number of studies have been carried out within the corridor. The Sites are shown below, together with the routes of the main creeks in the area.



9.2 Blackburn Lake Sanctuary. Site 1

Regular surveys are made within the Blackburn Lake Sanctuary. [C6, C35, C53].

9.3 Blackburn Creeklands. Site 2

Regular surveys are made within the Blackburn Creeklands. [C14]. Another source of information is contained in *Birds of Box Hill*, [C47]. This contains lovely line drawings by Nicolas Day.

9.4 Weaving Study. Blackburn

Marion Weaving carried out a detailed study of bird life across a range of urbanization gradients (bush, urban, suburban) including in Blackburn, with particular emphasis on nocturnal birds, including the Tawny Frogmouth. [C41]. This bird is widespread and common and is a non-hollow dependant species that has adapted to an urban environment. The species was most common in suburban landscapes and urban fringe landscapes but was not recorded in forests. Male home range was 4.35ha and female 6.55ha. The Blackburn Bushland Corridor has sufficient area to accommodate these home ranges.

9.4 Detailed Tawny Frogmouth Sightings within the Blackburn Bushland Corridor . Site 2 and Site 3.

In 2018 and 2019 Ruth Ault recorded many Tawny Frogmouth sightings (including nest tree locations) along the Blackburn Bushland Corridor. [C42]. More nests were located in the urban environment of the Blackburn Bushland Corridor, than within the adjacent parklands of the Blackburn Creeklands. Nesting density in the National Trust Classified streets was typically twice that of the adjacent Blackburn Creeklands and in two areas the significant roost trees for two pairs of tawny frogmouths were very closely located (within one or two house blocks). Possibly the tree and garden landscape encouraged by the National Trust Classification increased the insectivorous food supply required by the Tawny Frogmouths in addition to providing numerous suitable nesting sites.

Within the Blackburn Bushland Corridor area sighting records by Ault have shown that,

- Tawny frogmouths typically build their nests on branches under a higher canopy, often sited at branch junctions distant from the trunk. Tawny frogmouths often reuse the same nest branch each season. Reasons for changing nesting sites appear to include increased activities nearby from predator birds such as Little Raven, Pied Currawong, Laughing Kookaburra or food competitor birds such as Australian Noisy Miner, and overgrazing of foliage by possums leading to a loss of overhead canopies and loss of nest branches.

- In the 2018/2019 nesting season a high proportion of nests failed to produce fledglings. Potential causes of the low successful fledgling rate are increased numbers of predator birds nesting nearby and the increased population of the Australian Noisy Miners. The Australian Noisy Miner not only eats many of the same insect species as the Tawny Frogmouth, but also physically harasses the nesting Tawny Frogmouths. The very low numbers of insects available due to adverse climate conditions is also considered to be a significant factor.

- If the adult Tawny Frogmouth pair survive a nesting disaster event, they usually have a second nesting attempt after nest, eggs or chicks have been lost. Second nesting attempts have been observed in the same nest, or a rebuild of the nest on the same nest branch site, or a rebuild on a previous season's nest site. Sightings have shown that when only one adult survives a disaster event early enough in the nesting season, the surviving adult will try to call in another partner and re-nest.

Ault's observations found that significantly more nests were located in the urban environment of the Blackburn Corridor, rather than within the parklands of the Blackburn Creeklands. This ties in with the observations of Weaving that sightings had a positive correlation with sealed roads and a less dense bush land. Was this really influenced by the presence of street lights, with birds nesting close by so as to be better able to see food at ground level?

Gisela Kaplan provides a detailed description of the tawny frogmouth. [C45]. She suggests that this bird may be among Australia's most effective and useful pest control bird. In order to make up sufficient biomass, large numbers of invertebrates are consumed. These include a variety of insects such as bugs, cockroaches, beetles and moths, as well as spiders, centipedes, scorpions, caterpillars, snails and slugs. Importantly, they can feed on terrestrial and aerial invertebrates. Among the vertebrates known to be eaten are frogs and mice. Maybe they nest close to lights so as to be able to feed on those insects attracted by lights?

9.5 For a particular property in Laurel Grove North. Site 3

In a 2017 detailed study Pat Bingham demonstrated that the bird species that are observed at Blackburn Lake Sanctuary are more numerous due to the significant number of water birds. However, the non-water bird species are reasonably similar at Blackburn Lake, along the Blackburn Creeklands, and at a favourable location in SLO1 at 21 Laurel Grove North. [C10].

9.6 Surrounding Wandinong Sanctuary. Site 4

Surrounding the Wandinong Sanctuary. An area bounded by Blackburn Road, Eustace Street and Windamere Road houses provide an extensive landscape cover for many bird species. Twenty eight species of birds have been sighted in Wandinong or heard in adjacent properties. The list was compiled by people familiar with Wandinong Sanctuary assisted by expert birders. [C62]. In addition there have been sightings of the rare Powerful Owl. [C63].

9.7 A comparison of bird species counts indicates

Area/Author	**Residents [C62] 2019**	**P. Bingham [C10] 2017**	**G. Deason [C40] Since 1974**	**H.E. Taylor [A10] Prior 1975**	**G.Presland [C9] 1890s**
Blackburn Lake Site 1		62 from 31 bird families. Note 1.	64 species Monthly sightings 2017	175 species	106 native species. 43 resided all year Note 1.
Blackburn Creeklands Site 2		38 from 18 bird families			
21 Laurel Grove Site 3		27 from 14 bird families			
Wandinong Sanctuary Site 4	28 bird families				

Note1. Birdlife count
Note 2.The figures quoted by Presland have been drawn from a series of bird surveys 'in the Box Hill District" carried out by Robert Hall and members of the FNCV in the 1890s.

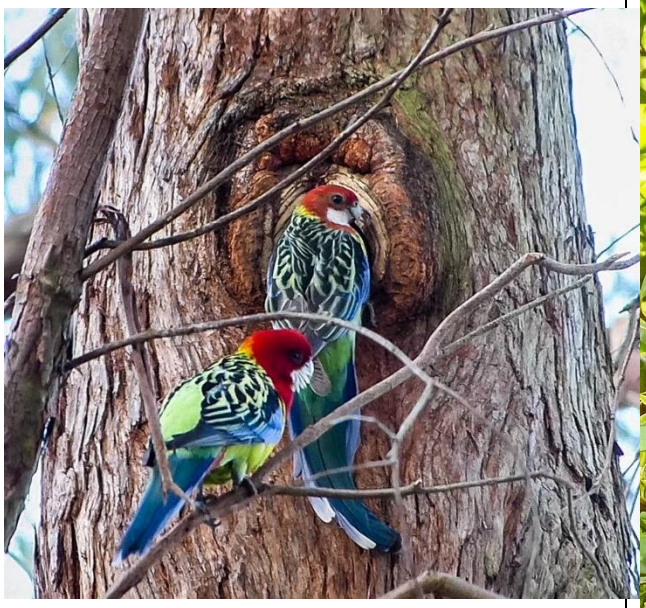
Other than the presence of many more water birds at Blackburn Lake, the remainder of the bird families were very similar in each location. This illustrates the broad nature of the Blackburn Bushland Corridor and its value as a whole and not just in small pockets.

Differences in bird counts at Blackburn Lake may be attributed to a loss of bird life over time, the transient nature of less common birds, habitat changes and differences in bird count strategies. The habitat provided in the Blackburn Creeklands, by the garden at 21 Laurel Grove North and close to Wandinong Sanctuary were ideal, consistent with that outlined in Appendix B, with a wide range of indigenous and other tall trees, mid- level trees and low to medium shrubbery.

The following are photographs of some birds that nested on or near the site.

Nesting Herons at nest, corner of Linum Street and Laurel Grove North 2017

Tawny Frogmouth on nest in roadside Eucalypt, 28 Laurel Gv Oct 2018



Eastern Rosella pair at nest hole, laneway rear of 26 Fuchsia St Sept 2014

Eastern Rosella eating seed capsules 21 Laurel Grove Feb 2015

9.8 Disappearance of Bell Miners (Bellbirds)

Another example of changing bird count is the disappearance of the famous Bell Miners from the Bell Bird area. [C13]. While there is a debate as to the value of these territorial birds in suppressing diversity, it is important to try to understand the factors which led to their disappearance. Bell Miners, commonly called Bellbirds, are Australian Honeyeaters of the family Meliphagidae. They live in colonies and their attractive, if monotonous, bell-like call notes are conspicuous and readily draw attention. They need a thick understory for nesting and roosting.

Bell Miners feed as part of a colony, remaining in the canopy at or above eight metres from the Ground. They mainly eat insects, especially psyllids and their lerps (sugary secretions used as protective shelters by tiny psyllid insects) from the foliage of eucalyptus. They also eat nectar and manna. It has been shown that Bell Miners maintain psyllid populations at a high level by protecting them from other birds and maintaining sufficiently large territories so that they do not over feed on the psyllids themselves [C43].

In the early days understory consisted of environmental weeds such as pittosporum or cotoneaster. The Bell Miners spread the seeds creating more understory. However, this understory can also be created by native acacias and bursaria. [C13].

They also require an upper story such as indigenous *E. cephalocarpa* or *E. melliodora* that is subject to an infestation of psyllid, which forms a lerp that provides a suitable food.

Birds may move for a variety of reasons. However removal of the upper and understory will result in deterioration of living conditions, and the possible takeover of the area by Australian Noisy Miners. This has occurred in a number of areas in Nunawading since the early 1990s.

9.9 Australian Noisy Miners

Tim Low's comments summarize some effects of Noisy Miner activities as follows:

> *"Regents and Swift parrots are "rich patch nomads" that roam until they find sugar hot spots. Able to carry pollen immense distances, they have almost stopped doing so, having become two of Australia's three most endangered pollinators. The Australian noisy miners contributing to their demise are probably Australia's least mobile pollinators: their female-range activity ranges near Brisbane measures 52-95m across, with male core home ranges averaging 129m across. Bees are far more mobile than that!*
>
> *In climate change reports to governments I have warned that noisy miners will handicap eucalyptus by reducing the mobility of their pollen. To produce seedlings with a future, trees will need pollen from drier and hotter places, not pollen from the next tree. Droughts that thin forests, will aid miners. Lorikeets, red wattlebirds and flying foxes will assume more importance in the future since they spread pollen widely, little deterred by miners."*
>
> *"One proposal is that corridors be made wide enough-at least 600m-to include a core without miners. (This is a good reason for strengthening the Blackburn Corridor and to avoid wholesale clearing of blocks). Another proposal is to cull as 'the most humane, practical, cost effective method' of easing the noisy miner impact."* [C44].

10.0 Future Management of Wildlife Corridors

10.1 Future Residential and Commercial Development Outlook

The area between Blackburn Lake, beside the Creeklands and down to Middleborough Road is now generally settled. Like the rest of the municipality, future development will mostly come from selected infill and replacement of existing houses, particularly along residential growth corridors, which may suffer considerable landscape loss. [A27].

Houses will generally be larger, occupy more of the lot and together with impermeable surfaces will limit available garden area. In many cases the existing balance between character objectives of the SLO and house footprint will be tested to the limit by developers and home owners.

In spite of improved rail and bus services, there will be more cars per lot. Requirements for parking around transport hubs will encroach into SLO values and National Trust streets. The WCC is not equipped with a parking strategy, finance or assessment tools to manage these changes in a seamless manner.

The Blackburn Lake - Creeklands area now has sufficient landscape and diversity, with wide enough width, to enable birds and other fauna to exist in a critical mass.
With the land gifts and acquisitions providing a link along Gardiners Creek and the SLO1 and SLO2 Overlay providing a substantial regional Bushland Corridor from Blackburn Lake west towards Blacks Walk, the corridor fits the description of a Regional Corridor. [C18]. A landscape has been created that provides at least twice the average home range of species in the area. These types of corridors are critical for the maintenance of ecological processes including the free movement of animals and birds and sustaining viable populations.

It is now apparent that a description of the extent, characteristics and value of the Blackburn Corridor would be worthwhile as part of a strategic plan to manage the area. It may be possible to link this with studies by groups such as Latrobe University Research Centre for Future Landscapes or Environmental Faculty at Deakin University Bennetswood (Burwood) campus, together with habitat arborists.

Some interesting results are likely to come from a study by Jacinta Humphrey, from LaTrobe University. She has recently started a PhD to test the relative influence of housing density and tree cover on bird communities.

Wildlife corridors are connections across the landscape that link up areas of habitat. They support natural processes that occur in a healthy environment, including the movement of species to find resources such as food.

Corridors can contribute to the resilience in a changing climate and help to reduce future greenhouse gas emissions by storing carbon and native vegetation.

Wild life corridors can range in size – from small corridors created by local communities to large corridors that stretch across different landscapes. [C18 to C22].

In an urban strategic landscape management plan alignment with bird habits and habitat is fundamental.

10.2 Present WCC Management of Blackburn Bushland Corridor

The WCC management, protection and improvement for the area is not presently meeting community expectations. While a few in the community want development at any cost, most who have moved to the SLO area or are long term residents want minimal change. Most support the Neighbourhood Character Study which states that "Vegetation character is generally the most significant determinant of neighbourhood character" in Whitehorse. [A27].

In a recent VCAT decision, P2428/2017, on a proposed development at 199 Canterbury Road, the panel stressed the importance of achieving the objectives of SLO2. VCAT also supported the importance of landscape objectives in another recent decision, P2212/2018, in Eustace Street located in SLO2.

In another recent test case a development of two five bed room houses (each with two stories) was proposed in SLO1. Over 100 close residents objected, representing 60% of the residents in SLO1. Objections were based on changes to Landscape Overlay, and effect on National Trust streets, bird life and parking. The application to WCC was rejected. The Developer's appeal to VCAT was later withdrawn, after upsetting many residents with their actions.

There is currently insufficient replacement of older trees within the SLO. In the National Trust streets generally the replanting is not sufficient, apart from in Jeffery Street which has a well-developed and organised community involvement with WCC.

10.3 Planning based on satisfying a particular Landscape and Fauna Objective

Currently arboriculture assessments are usually based on a single tree health assessment. This approach centres on achieving a pleasant visual look, as described in Figure 2.

Often only the large canopy trees in good condition, as well as neighbourhood trees that might be affected in their Tree Root Protection Zone, are recommended to be retained. There is not always a requirement for full replacement with new trees for those that are agreed to be removed, and there is limited follow up.

All too often the approach taken by developers is to "moonscape" the allotment and concrete large areas, with a consequence loss of soil permeability and a very slow rehabilitation of the allotment. Sometimes this is occurring before start of construction, using a permit system that is not transparent.

Landscape plans are often separately developed. Usually the changes in fauna habitat are not considered, even though this is an objective of the particular Significant Overlay.

On the other end of the spectrum are ways to integrate impacts of landscape and fauna change in a current Bush Environment area.

The requirements to encourage bird life are described by Birdlife Australia in Appendix B.

The ideal landscape for birds is varied and has a good balance between mature, indigenous trees that provide the hollows and other nesting sites, night roosts, flow of nectar, insects on leaves, under bark and buzzing around the flowers. There needs to be a thick understory of ferns, grasses and shrubs from about ground level to give security to small birds.

This approach is similar to that of the Gardens for Wildlife program encouraged by WCC, but not yet integrated into the planning scheme. They also similar to those developed by Boroondara Council. [C57].

It is also similar to that outlined in Appendix E. [50]. However, it is quite different to the approach outlined in the proposed WCC Urban Forest Strategy [C51] and Nature Strip Guidelines. [C54]. These differences need to be reconciled by WCC.

In situations where landscape removal could have significant impact of fauna, it would be appropriate to use habitat and horticultural arborists for the design of the intended landscape outcome, so as to maintain a bush environment in part or all of the garden as shown in Figure 3 or Figure 4, below. In many cases this will require some selective removal and replacement of the various stories over a number of years.

It is useful to examine the different landscape conditions possible, [C19, C33], and how these are influenced by the approach taken by arborists and fauna specialists prior to further development.

Possible landscape outcomes are shown in

Figure 2 (open areas with no understory),

Figure 3 (Bush areas with a thick understory) and

Figure 4 (dense upper story).

Figure 2

Figure 3

Figure 4

University of Melbourne

Respondents liked the look of the upper picture but weren't so keen on the other environments, though the latter may indeed provide equally (or more) valuable habitat for other species.

10.4 Adoption of a Science of Bushland Management

To some degree the science of bushland management articulated by WCC [Appendix E], when applied to specific allotments, appears to be disregarded.

These concepts are based on:

- Retaining any remnant vegetation and protecting the site upon which it is found as the first priority in vegetation management
- Revegetation of totally or almost totally degraded areas is the least preferable option in bushland management, and
- It is more efficient to rehabilitate than to start revegetating a totally degraded area.

This is the approach which is required to sustain and encourage a suitable landscape and the present active bird life in the corridor from the Blackburn Lake, along the Blackburn Creeklands and down to Middleborough Road.

The current practices which allow "moonscaping" of vegetated properties during development and not followed up with major landscape plantings, are diametrically opposed to this bushland management science and undermines what is desirable for best habitat.

Practices to identify if any portions of an allotment had a rich tree environment of indigenous and native trees where bird life could be preserved and encouraged. This requires a canopy design with a predominance of indigenous trees of tall, medium and low level, together with natural leaf litter /mulch and an adequate supply of water. [C30 and Appendix B]. This is not well covered by existing WCC processes and systems.

In a meeting with WCC on 4 September 2018 the Bellbird Residents' Advocacy Group (BRAG) outlined the significance of the Bellbird area of Blackburn and residents' concerns. [C55].

In addition, a response by BRAG to the current Whitehorse Planning Scheme Review is included in Appendix D. To date this response has not been considered by WCC.

It is now apparent that a broad strategic plan, together with strengthened Government planning recognition, WCC administrative programs and more tree replacements is needed to link existing strategic plans for Blackburn Lake Sanctuary and the Blackburn Creeklands with the SLO1 and SLO2 areas to manage the Blackburn Bushland Corridor as a strategic asset of Whitehorse. This plan also needs to consider how to manage voluntary community organisation involvement.

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Appendix A - National Trust Citation

National Trust Citation

National Trust of Australia (Victoria)
Landscape Submission

Name:	Blackburn Lake and Bell Bird Streets.
Listing Status:	*Regional Classification:* A Regional Classification refers to a large area or region which contains a number of component Classifications individually listed. *Classification* means: " . . those parts of the physical environment, both natural and man-made, which in the Trust's view are essential to the heritage of Australia and which must be preserved." *Recorded* means: " . . those parts of the physical environment, both natural and man-made, which contribute to the heritage of Australia and which should be recorded and whose preservation is encouraged."
Inventory No.:	L 382.
Location:	City of Nunawading.
Boundaries:	See Map. *Classified:* Road reserve and front gardens of the following streets: Jeffery Street Hill Street Boongarry Avenue Linum Street Laurel Grove (between Fuchsia Street and Creek) Acacia Avenue Blackburn Lake and land to east of Lake Reserve fronting on to Lake Road. *Recorded:* Furniss Park and land to north of Lake Reserve fronting on to Central Road.
Ownership:	Private, Nunawading City Council and M.M.B.W.

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Citation:

The area is an oasis in the suburbia in which it is now engulfed. The lake and its environs remain largely in their natural condition, providing a haven for over 165 bird species. The area is renowned for its Bell Miners; for a breeding colony of Regent Honey-Eaters (which breed normally in northern Victoria); as a resting place for certain migratory bird species (rufous fantail and satin fly-catcher, etc.), and for large numbers of water fowl, many breeding. The second Victorian recording of the Koel (a cuckoo) in 1976 was in the Lake Reserve.

The streets extending outwards from the Lake are an integral part of the ecology of the Lake area, being corridors of movement, particularly for birds. These private streets have resisted the pressures of normal streetmaking requirements and retain a quiet, almost rural character unique in Melbourne. They demonstrate an excellent integration between the natural and man-made environments. The natural vegetation, bird life and informal roads and gardens combine to provide a rare example of rus in urbe. The importance of the environmental values provides a major link between residents and has led to greater social cohesiveness.

Threats:

Road construction; increased traffic flow; inappropriate "suburban" housing and gardening styles; heavy and inappropriate usage of Lake Reserve.

Description:

The streets referred to vary greatly both in their general appearance and in particular detail. Jeffery and Linum Streets are the most consistent and visually unified streets whilst the others vary in quality from very good to poor. The poorer areas are generally the result of several of the following factors: — tree canopy does not extend over road; too much variation in colour of vegetation; deep gutters on either side of road; presence of front fences; fussy garden details; dominance of a building over the landscape; absence of tall, native vegetation

on road verge. Despite these faults, the area nevertheless has a sense of unity overall — "a sense of place" which sets it apart from the surrounding areas.

The lake area also varies in quality. At its worst there are large areas where sheet erosion has resulted from intensive use around barbeque areas. At its best there are tranquil winding tracks passing through dense indigenous forest. Regeneration is being successfully undertaken by sensitive management systems operated by local residents.

Jeffery Street runs across a small valley, winding across a bridge at its lowest point in the middle. This bridge and its associated footbridge are rural in character and complement the general environment of the street. They are in fact the focal points of the entire street and help both visually and socially to tie it together. The bridges, vegetation and general rural character of the street give it a character almost unique for a suburban street.

The two Recorded areas do not have high aesthetic value. However, they both have potential for sensitive development, compatible with the general character of the Classified areas. Furness Park is an important visual and ecological link between the streets to the west of Main Street and the Classified areas to the east. The Recorded area to the north of the Lake Reserve has the potential to almost double the area of the Lake Reserve.

Recommendations: *Lake Area*

(a) The area owned by Camberwell Grammar be purchased and incorporated in the Lake Reserve.

(b) That a comprehensive land-use and management study be undertaken to ensure the preservation of the environment, and determine activities and management policies compatible with this aim. This study should include the Recorded area to the north of the Lake Reserve.

Streets

(a) A varied planting of indigenous trees and taller shrubs be encouraged along road verges. This will: —

(i) visually unify the streets by concealing various architectural and gardening styles.

(ii) assist in visually blocking out poles and overhead wires.

(iii) create a canopy over the road itself and give the streets a more intimate character.

(iv) give the street an even greater "sense of place".

(b) The species selected for road verges be kept to a minimum (approx. 10) in order to achieve (i) and (iv) above.

(c) Additional planting on private property should be encouraged using predominantly indigenous material.

(d) Front fences be removed where possible.

(e) A properly formed road drainage system be constructed to prevent erosion of natural drainage lines. This could take the form of a simple grass swale which could be mown or an unobtrusive bitumen roll kerb. Neither solution need give the streets a hard edge appearance if sensitively handled.

(f) Traffic volumes to be kept to present levels by whatever means are available.

(g) Rationalize and reduce overhead wires in streets. Ideally the power lines should be underground.

(h) Buildings in the area should be sympathetic to the streetscape in terms of form, colour, siting, scale and materials.

(i) Inappropriate landscape elements such as rockeries and some planting and fences, etc. should be removed.

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Spotlight on the Register

Tony Kjar, Bellbird Residents' Advocacy Group

The National Trust Register is the most comprehensive single heritage register in Victoria, covering all types of cultural and natural heritage, including buildings, trees, landscapes, gardens, public art and pipe organs.

Blackburn Lake and Bell Bird Streets became part of an early significant landscape classification for the National Trust of Australia (Victoria). The streets extend outwards from the Lake to Middleborough Road through a rich tapestry of bushland, serving as corridors for birds as well as residents and visitors.

The classification of seven streets in Blackburn in 1976 provided the foundation on which landscape values were assessed. These private streets have resisted the pressures of normal street-making requirements and retain a quiet, almost rural character now quite unique in Melbourne. The National Trust recognition initially provided external credibility and focus for local conservation groups endeavouring to preserve the area, and later became a framework for further efforts to extend the corridors.

The National Trust citation clearly expresses the importance of the area and states in part "the area is an oasis in suburbia ... the lake and its environs remain largely in their natural condition, providing a haven for many bird species. The streets retain a quiet, almost rural character, unique in Melbourne. The canopy trees growing over the street, called a tunnel effect, and the unity of the streets due to the natural screening of the houses by native trees and shrubs along the street are

Following the National Trust classification the area was subject to a number of development pressures to the detriment of the landscape. A number of community interest groups formed around preserving and extending the "Lake, Creeklands and Streets". These included street maintenance associations in the National Trust classified streets, groups promoting understanding of flora and fauna, groups growing indigenous trees, groups maintaining and extending flora plantings, and a group devoted to town planning. A major achievement came in 1982, with the application of significant landscape overlays to protect the area in the local planning scheme.

These community groups provided the basis for land acquisition to form continuous wide corridors, particularly along the Blackburn creeklands. Their efforts were rewarded with significant Council acquisitions, which were complemented by other government reservations, greatly expanding the corridors, which are critical for the free movement of animals and birds and the containment of viable populations. Having achieved these aims, local community groups are now focused on defending against inappropriate development.

All of the organisations involved are still active. Each has their own website and regular newsletter. They have moved on from the creation phase, through the improvement and enjoyment phase, to now one of defense against inappropriate development. The Blackburn area is valued not only by locals, who welcome those living in Box Hill and beyond. They

Appendix B - Attracting Birds to your Garden

Attracting Birds to your Garden

What makes a good bird garden?

Presence of tall trees

Mature, indigenous trees provide hollows and other nesting sites, night-roosts, flowers for nectar, insects on leaves, under bark and buzzing around the flowers. Acacias (wattles), eucalypts, casuarinas, banksias or palms may be appropriate.

Presence of middle and ground level shrubs

A thick understorey layer of ferns, tall grasses, and shrubs from about ground level to two metres gives security to small birds such as thornbills, robins, scrubwrens and fairy-wrens.

Grey fantail © A. Carew

Permanent water supply

Although the birdbath does not need to be fancy it needs to be kept filled, as birds will come to rely upon it. Each bath or pond must be carefully sited to allow small birds to dive quickly into nearby cover.

Suburban proximity to a patch of natural bushland, within 3km

The nearby bushland can help provide elements your garden cannot therefore increasing the diversity of habitat for birds in your area.

A garden for the birds

Below are a few examples of plants that attract birds to your garden: some provide shelter, some food, others both. Try to have a balance—too many of a particular type of plant will attract a limited range of birds. For example large, showy grevilleas tend to attract the more aggressive nectar-feeders like Red Wattlebird and Noisy Miner, reducing the opportunities for smaller birds. Please check the indigenous plants of your own area before making a selection.

Shelter for small birds (scrubwrens, fairy-wrens, thornbills)

Prickly dense shrubs – hakea, acacia, sweet bursaria, burgan, leptospermum.

Shelter for bigger birds (magpies, owls, Tawny Frogmouths, parrots)
Tall trees – eucalypts, casuarina, banksia, acacia.

Insect hosts for robins, wrens, treecreepers

Acacia, bursaria, correa, hardenbergia, melaleuca

birds are in our nature

birdlife

Nectar for honeyeaters, lorikeets

Eucalypts, correas, epacris, grevillea, mistletoe, xanthorrhoea

Seeds for cockatoos, finches, pigeons

Acacia, casuarina, native grasses – poa, sedges

Multi-purpose

Acacia, banksia, eucalypts, grevillea, hakea, leptospermum, melaleuca

New Holland Honeyeater © John Barkla

Frequently Asked Questions

Should I feed the birds?

A constant supply of 'artificial' food can be unhealthy for birds. Feeding birds can attract large numbers of one species at the expense of diversity. Seeds in some wild seed mixes are potential weeds. Groups of birds at a feeding station become easy targets for birds of prey, cats and foxes.

It is better to create a bird habitat through planting and providing water.

Should I be careful with snail bait and other garden poisons?

Avoiding the use of poisons in your garden can increase the number of insects available to birds.

How can I keep birds away from my fruit tree?

Try hanging a hawk shape above the tree, nets, and the more permanent solution of building a cage around the tree.

What should I do with sick or baby birds I find?

Baby birds are best left where found. Parents will often continue to feed them. Registered animal welfare agents can be contacted to care for sick birds. Your locall vet will be able to give you a contact.

How can I stop birds flying into windows?

Stick on hawk shapes may help to deter birds flying directly into large windows.

Spotted Pardalote © John Barkla

Variegated Fairywren (female) © Trevor Quested

Further information

Birds in Your Garden. Revised Edition by Ellen McCulloch

Hyland House Publishing Pty Ltd. 2000

The Australian Bird-Garden: Creating Havens for Native Birds by Graham Pizzey. Harper Collins Publishers Pty Ltd. 2000

Birdwatching in Australia and New Zealand by Ken Simpson and Zoë Wilson, Reed New Holland. 1998

www.birdsinbackyards.net

www.backyards4wildlife.com.au

www.florafaunna.com.au

Crested Pigeon © John Barkla

Appendix C - Blackburn Lake Sanctuary

In 1889 the Freehold Investment and Banking Company, one of the most active land and finance companies of the time, bought up more than 30 small blocks of land in the Nunawading area. Among the land they bought was on both sides of the rail line including Central road and Canterbury Road and the Lake sanctuary. A model village was planned.

- The company is credited with having built the Lake for the purposes of enhancing land values and to provide a reservoir for local orchardists. There was considerable excavation within the lake confines, preparation for an antimony mine as well as extraction of fill and the development of a brickworks outside the lake area.

- The company built a refreshment room and jetty at water's edge. Rowing boats were available for hire. Picnic excursions were organised from Melbourne.

- However land sales were limited during the land boom in the 1890s and the company failed.

In 1880 Blackburn Lake was created to provide water for orchards in the district.

In 1906 the Council purchased land from the bankrupt Freehold Investment and Banking Company to establish a recreational and community facilities. This eventually led to two large ovals, tennis courts., a library, child care facilities.

In 1909 the Adult Deaf Society purchased a 30.4ha block, which included the Lake. The Society built a substantial home, established a men's and women's wing, cleared land and cultivated a flower farm, growing flowers for the Victoria Market.

In 1927 the Herald "Learn to Swim Drive" was started at the lake. Since the lake was owned by the Society, its immediate surrounds were protected from development for many years after the Society ceased to use the property for a flower farm.

In 1938 residents feared the loss of this environment. The Blackburn Progress association was keen to acquire the Lake and surrounding land for development as a public reserve.

In 1954 the MMBW zoned the area as public space, but it was still owned by the Society. During the 1960s the high intensity and often incompatible uses of the lake, including speed boats, water skiing, illegal rubbish dumps, canoeing, yachting, fishing and open BBQ began to trash the fragile environment. Sensitive vegetation along the lake fringe, which provides important habitat for wild life, was destroyed in many parts.

In 1962 the MMBW deepened the Lake to form a holding pond basin to stop flash flooding. This led to community concern and two respected landscape designers, Edna Walling and Ellis Stones were engaged to provide advice. Both ranked the Blackburn Lake area as being as valuable as the Melbourne Botanical Gardens. An alternative plan to build a retaining wall and outlet as the next stage was developed and implemented.

In 1964 The Society sold 13.4 ha , including the lake and some surrounding bush to MMBW, and Camberwell Grammar school purchased 6.5 ha of land to the east of the Lake.

Appendix D

Bellbird Residents' Advocacy Group – WPS Review Submission 22.04.18

Submission to Whitehorse Planning Scheme Review - April 2018

Preamble:

Bellbird Residents' Advocacy Group was formed in early 2017 due to concerns that current provisions in the Whitehorse Planning Scheme do not provide sufficient protections to the National Trust listed streets of Blackburn. These streets were classified by the National Trust in 1976 because "The area is an oasis in the suburbia in which it is now engulfed", "the (streets) retain a quiet almost rural character unique in Melbourne" and they "demonstrate an excellent integration between the natural and man-made environments. The natural vegetation, bird life, and informal roads and gardens combine to provide a rare example of *rus in urbe*. The importance of the environmental values provides a major link between residents and has led to greater social cohesiveness." In 1985 the Cain government acted to provide a special planning scheme, the first of its kind in Victoria, and extended that protection in 1988 to include the area under a Significant Landscape Overlay (SLO1) and the surrounding area under SLO2.

The Victorian Government's Planning Policy Framework still provides for protection of Significant Environments and Landscapes. The objective is to protect landscapes and significant open spaces that contribute to character, identity and sustainable environments. The State Government relies on local government planning schemes to achieve and manage this. In Whitehorse this objective is outlined as the "Landscape Character Objective" and is defined in Section 2 of Schedule 1 to the Significant Landscape Overlay.

Submission:

We submit that SLO Schedule 1 needs to be reviewed and modified as follows:

1. Explicitly quote the National Trust citation in section 1.0 "Statement of nature and key elements in landscape" (rather than just reference it). Ensure that the landscape heritage values identified in this citation are recognised and valued, including recognising the importance of more than just canopy trees.
2. Provide an explicit link between Section 4 Decision Guidelines and Section 2 Objectives. This should include specific actions and activities, that outline how the objectives will be achieved. At present the two sections are disconnected and in places inconsistent. Objectives must direct everything else. In particular, there needs to be better aligned

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linkage between Section 3 Permit Requirements and Section 2 Objectives. The extent of any landscape alteration should be limited and better compliance and penalty provisions should be incorporated to ensure the objectives of the SLOs are managed as intended and that post-development enforcement is more aggressively pursued.

3. The clause relating to permit exemptions for dead, dying and dangerous trees should be modified so that no verbal approvals are allowed, except for an immediately dangerous tree. "Dying and dangerous" need to be explicitly defined. It would also be helpful if the wording from Clause 3 of the SLO itself were repeated in the Schedule to state that only that section of the tree which represents an immediate risk can be removed or destroyed, as this does not appear to have been the view taken by enforcement officers.

The following issues related to SLO1 should be addressed in the appropriate place in the Planning Scheme:

4. Redress the "notice to neighbours" requirement so that neighbours are informed of any developments and in particular any tree felling/lopping that impacts their property and neighbourhood amenity neighbourhood amenity. Advice re permits issued should be advertised on the site boundary at least 2 days prior to tree removal.
5. The on-line register of planning applications should include all requests, reports, Council inspections and approvals regarding vegetation removal.
6. Make provision for a panel of formally certified arborists to make determinations on applications to remove or lop trees. There is a need for application by arborists of a recognised standard of assessment for trees and vegetation. For instance, there is an Australian standard that Whitehorse could require all arborists to assess against: AS 4970-2009 - *Protection of trees on development sites*. This provides objective measures against which vegetation is assessed. An additional requirement should also include the need to provide a Worthiness of Retention assessment that rates the tree on 7 criteria. Experience in Whitehorse shows that there is a wide range of approaches by arborists to assessment. Many have little understanding of habitat value and the objectives of SLOs in Blackburn. Instead they view a development site in isolation as a clean slate. If an applicant wishes to rely on a non-certified arborist, a payment of an additional fee should be included to cover a detailed review by the WCC arborist.

7. Whitehorse Council needs to develop and incorporate a set of appropriate activities for both its strategic & annual delivery plans, for the area which is now coved by SLOs, that outlines how it intends to deliver on its landscape protection, amenity and environmental objectives. Particular attention needs to focus on the SLO1 and parts of SLO2 which now cover 2 sq km from Blackburn Lake to Middleborough Road. This area includes a number of reserves, the Blackburn Creeklands, and National Trust streets and is a valuable flora, fauna and historical contiguous area. Currently only Blackburn Lake is mentioned in Whitehorse's Strategic Plan for 2017-2021 in relation to environmental and landscape management activities.

Appendix E

Extract from City of Whitehorse Bushland Community Handbook

6 MANAGING BUSHLAND IN WHITEHORSE

To some, bushland management is a science. To others it is more of an art. However, there is no doubt that applying patience, an attention to detail, and a sense of wonder will be well rewarded.

Part 1: History

THE HISTORY of bushland management tells us what works and what doesn't. But we're still learning!

ACTIVE MANAGEMENT can enhance the quality and diversity of indigenous vegetation and has been occurring for several thousand years.

KOORIES ACTIVELY MANAGED BUSHLAND before the arrival of Europeans. Apart from a small amount of trade with neighbouring clans, the *Wurundjeri balluk* were totally dependent upon their local area to supply all the things they needed. The Koories employed management techniques that enhanced the productivity of the land. Gary Presland's book *Aboriginal Melbourne; the Lost Land of the Kulin People* details these further:

- Fire was used by Koorie men during the day as an aid to hunting. Old and woody vegetation was also cleared as a result of this, allowing freer movement through the area.
- Cultivation was carried out in some areas by Koorie women. The growth of the murnong daisy *Microseris lanceolata* was deliberately fostered by regularly turning mounds of soil in which it grew. It was a staple of the Wurundjeri diet (Presland, 1985).

SINCE 1780 EUROPEAN SETTLEMENT has seen the land subject to many different styles of management. These have ranged from running cattle at low intensities to wholesale land clearing. Land managers now recognise the benefit of preserving local biodiversity and how Koorie techniques, such as controlled burning, helped to maintain diversity. This is why active management today may employ such techniques. In intensively visited public parks, landscaping, pruning and other tree work will also be done.

THERE ARE NATURAL PROCESSES at work in bushland that help to create and maintain biodiversity. Ecologists know about these and use them to maintain the health of the bushland in Whitehorse. For example, by allowing the accumulation of some leaf litter, the development of swales along drainage lines and by allowing older trees to develop holes that can be used for nesting, managers and residents can take a more passive, but none the less important, role in bushland management.

Part 2: Science

THE SCIENCE of bushland management helps us work within the ecological systems.

The priorities for local land and vegetation management in Whitehorse can be easily remembered by observing the 3 R's:
Retain, Rehabilitate and Revegetate.

RETAINING any remnant vegetation and protecting the site upon which it is found is the first priority in vegetation management. This is because the diversity in an area of good quality remnant bush will be significantly greater than in either a degraded area, or in an area that is totally replanted. The natural floral diversity of an area will be made up of a large number of species. Once an area is cleared of vegetation, it is extremely difficult to restore its diversity. About 50% of the original species of an area may be either very difficult to propagate and handle, have seed which is no longer viable, or be reliant on symbiotic fungus or bacteria in the soil, which is rare and expensive to reinstate. This is why most revegetation projects are only able to use about 50% of the original species, and why patches of good quality remnant vegetation are so valuable. The potential seedbank of remnant areas can be used to help restore other, more degraded areas. Retaining and protecting a larger area may involve fencing to prevent vehicles, walkers and dogs from entering the area.

REHABILITATING a degraded area is the second priority in vegetation management. For similar reasons as those described before, it is more efficient to rehabilitate than to start revegetating a totally degraded area. Rehabilitating usually involves extensive weed removal, coupled with some replanting. As an example, look at a parkland that has a few scattered indigenous trees and some sparsely spaced ground storey plants of two or three species with many weeds interspersed. In this case rehabilitation may take the form of creating a shrubby parkland feature by 'consolidating' an area that contains a few trees that are reasonably close together, have good habitat value (mature, perhaps with nesting hollows) but may be vulnerable to dropping limbs. This would involve removing weeds around the trees, planting other robust ground storey plants and a few shrubs amongst the existing indigenous ones, and finally fencing the area. Often the store of seed in the soil will also begin to germinate. Vivien Freshwater's article, "Regeneration of a House Block" in *Flora of Melbourne* (Australian Plants Society Melbourne, 2001) expands this further.

Appendix F - Chronology of the Development of Blackburn

(R.Weiss)

Date Event

1882	Rail line built between Camberwell and Lilydale , stopping at what was called Blackburn Creek
1882-9	Blackburn Lake formed over clay pit by the Freehold Investment and Banking Company (FIBC). [A3].
1889	FIBC started a Model Village concept. FIBC built refreshment rooms at Lake. [A3].
1906	Mary Ann Jeffrey purchased 10 acres from FIBC. [D1].
1907	FIBC offered 140 acres, including lake, offered to Shire, but they refused. [A3].
1908	Adult Deaf Society purchased 70 acres including lake and built complex. [A3].
1910	Mary Ann Jeffery purchased 7 acres to form Seven Oaks Park. [D1].
1914	Frankcomb's Paddock subdivision. 40 lots Main St to Laurel Grove. [ARKjar]
1915	Refreshment room at lake no longer operated by Adult Deaf Society. [A3].
1915-1964	Department of Education commenced operation of the " Open Air School" in Gardenia Street. The school provided twelve months periods of respite for sickly children from the industrialized inner suburbs of Collingwood, Richmond and Fitzroy.
1926	Picnic parties at lake banned by Deaf Society. [A3].
1931	Blackburn Swimming Club disbanded due to vandalism of club house. [A3].
1940-44	Or 1921? Linum St extended by linking west to View St. Owned by Shire.[ARKjar].
1943	Mary Ann Jeffery died and home passed to her son Cyril. [D1].
1949	Sevenoaks Park first subdivision into 10 blocks. [D1].
1950's	Increased development threatened lake as subdivisions occurred. [A3].
1950 mid	Laurel Grove residents formed group to maintain gutters. [D2].
1958	Jeffery St Nativity Play first performance.
1960 ish	Linum St Residents group formed to persuade Nunawading Council to not make formed roads. [D2].
1962	MMBW constructed flood control retaining wall and outlet at Blackburn Lake. [A3].
1964	Nunawading Council purchased 31 acres land and Blackburn Lake. [A3].
1965	Blackburn Lake declared a Sanctuary and Committee of Management formed. [A3].
1965	Linum , Laurel, Boongary Road association formed. Road sealed. [D2].
1967	Jeffrey St sealed. [D1].
1972	Adult Deaf Society replaced existing buildings with a new home. Surplus land for sale. [A3].
1975	Nunawading City Council purchased 14 acres with assistance from State and Fed Government. [A3].
1976	National Trust awarded landscape Classification to Blackburn Lake and 6 streets. [A3].
1980,s	Special Residential Zone 5 Area of Special Significance declared by Council. [D2].
1986	Special Residential Zone (SRZ5) created on Local Government scheme. [D2].
1988	Linum Boongary Intersection reconstructed to limit trucks. [D2].
1995	SRZ5 reviewed and tighter controls implemented in June 1988. [D2].
1999	New Planning Scheme (State and Council) replaced SRZ5 by SLO1 and SLO2.
2001	Linum Laurel Boongary power lines put underground under Special Charge Scheme.

Appendix G
AS 3970 Protection of Trees on Development Sites

Extracts

" Provides guidance on the principles for protecting trees on land subject to development…"
The standard provides guidance on how to decide which trees are appropriate for retention, and on the means of protecting those trees during construction."

"The standard does not apply to the establishment of new trees."

" Landscape design is an improvement of most developments. Established trees of appropriate species and sound structure are beneficial components of the built environment and a potential asset to any development site. Trees may be retained because of their

a. Aesthetic qualities
b. Heritage values
c. Ecosystem benefits, including
   i Storm water management
   ii Shade and heat reduction qualities
   iii Wild life habitat and biodiversity
   iv Carbon dioxide absorption
   v Particulate pollution capture
   vi Salt wind protection, and
   vii Social and psychological values."

The Standard outlines in indicative Stages of Development and the Tree Management Process. This includes

Process	**Matters for consideration**	**Action and Certification**
Preliminary Tree Assessment	Hazards/risks Tree retention value	Evaluate suitable trees for retention and mark on a Plan. Provide preliminary arboriculture report and indicate TPZ to guide the development team. Note 1
Arboricultural Impact Assessment will be prepared once the final layout is complete.	The report will identify trees to be removed , retained or transplanted. The report will identify the possible impacts on trees to be retained. The report will explain design and construction methods proposed to minimize the impacts on trees where there is encroachment into the calculated TPZ.	It will recommend measures to protect trees throughout the demolition and construction stages..
Determining the Protection Zones of		

selected trees		
Tree Protection methods	These sections focus solely on TPZ. It is a restricted area usually delineated by protective fencing.	

Note 1. Each tree assessment should give
a to f Tree characteristics
g Heritage or cultural value
h Ecological and habitat matters (Input from other specialist may be required).
i Location relative to existing site features
j Other matters relevant to the site , eg surface roots
k Retention value."

" Section 4.6.2
Soil moisture levels should be regularly monitored by the project arborist. Temporary irrigation or watering may be required within the TPZ. An above irrigation system should be installed and maintained by a competent individual"

Note. The Standard does not cover the maintenance of trees after completion of construction, or the establishment of new trees. It does not consider soil data , changes in drainage during construction, hydrological and soil moisture level changes due to construction, etc that could impact on moisture level s within the TPZ at ground level or below grade that might affect tap roots. It does not consider the effect of major excavations on moisture levels or the water table.

Appendix H
AS 4373-2007 Pruning of Amenity Trees

Extracts

“ The object of this standard is to provide arborists , tree workers, government departments, property owners, and contractors with a guide defining uniform tree pruning procedures and practices in order to minimize adverse or negative impacts of pruning on trees.

The intention of this standard is to encourage pruning practices and procedures that reduce the risk of hazard development, branch failure, pathogen infection and premature tree death.”

“ Considerations before Pruning

Trees with hollows or other likely habitat may need further assessment by an ecologist or wild life specialist.”

Appendix I - Timeline