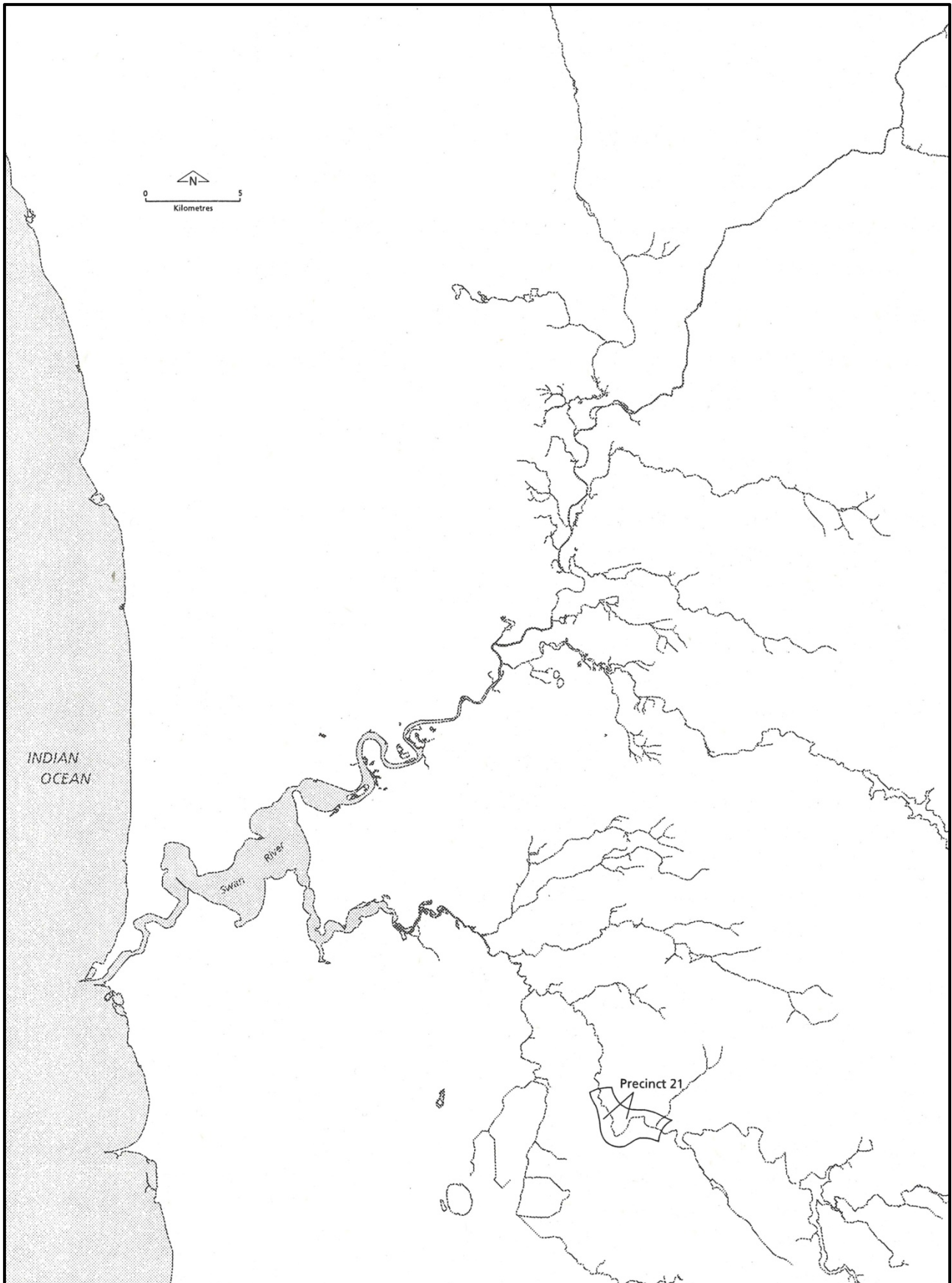


Precinct 21

Canning River - Turner/Brookside Footbridge to Stony Brook Confluence



Summary

Canning River – Turner/Brookside Footbridge to Stony Brook Confluence

The Canning River irregularly meanders throughout the precinct. Upstream of Brookside crossing the river width becomes increasingly restricted by the surrounding bedrock. At most points along the river, the embankments are almost vertical before rounding off to a flat flood plain. The Darling Range provides a steep and dramatic backdrop to the riparian form, and is attractive for its steeply undulating topography and the sense of depth it evokes in the landscape.

Due to the narrowness of the river channel and embankment, the canopies of the trees often join over the waterform creating an enclosed river section. The riverine vegetation is dominated by flooded gum and paperbark. The understorey is made up of mainly weeds which in many places are so prolific that there is hardly any indigenous understorey species.

Several bridges within the area provide both vehicle and pedestrian river crossings. Most are low forms which are in line with the river valley embankments. The most unattractive crossing is the Bernard Street Footbridge which is covered in graffiti and surrounded by an abundance of weeds, including several bamboo stands. At Martin Road, there is an informal crossing constructed with two wooden logs. This is rather attractive due to its weathered form and the surrounding riparian vegetation which forms a canopy over the waterform.

The precinct is becoming increasingly residential as many rural properties are being redeveloped as suburban blocks. The remaining attractive small orchards and grazing paddocks give the river landscape a rural identity. There are several historical features along the river foreshore in the area including St Mary in the Valley Cemetery. Newer landscape features are the Kelmscott Shopping precinct and the local primary schools.

Biophysical Processes

Geological Processes

The dominant geological formation at the downstream section of the precinct is the Guildford Formation. The formation was formed in the Quaternary and is identified as being of predominantly fluvial origin and consisting of sandy clays to clayey sands as well as including other alluvium and colluvium. The Yoganup Formation is the second Quaternary formation in the area. It is characterised as being pockets of conglomerate overlain by a unit of sand containing beds of clay. It occurs along ancient shorelines at the foot of the present Darling Scarp and is made of up sands and some heavy minerals.

The Proterozoic dated Cardup Group occurs sporadically south of Maddington and is present at Kelmscott. It is weakly metamorphosed and consists of conglomerate sandstone, siltstone and shale which were laid down in a continental shelf environment.

Archaean migmatites are present in the upstream section of this precinct. The geological unit consists of mixed rocks comprising an earlier gneissic or metasedimentary portion and the later granite component. In this section, the migmatite consists mainly of amphibolite streaks. The Darling Fault line cuts through the area in a north south direction.

The Swan Association soils occur on the downstream section of the scarp. They consist of red podsolc soils and undifferentiated alluvial soils. Part of the Darling Scarp shallow red and yellow earths and rock outcrop occur at Kelmscott and upstream. On either side of the Canning River banks, the soil is identified as being the Forrestfield Association which is the gravelly and sandy soils of the Ridge Hill Shelf.

Topography

The precinct is part of the Helena Valley geomorphic unit. It is characterised by deeply incised valleys with rocky steep slopes. East of the river, the topography increases quickly to the Roleystone hills and is identified as being the Ridge Hill Shelf geomorphic unit. The Ridge Hill Shelf is a narrow strip along the foothills of the Darling Scarp and its western line lies near the Darling Fault. It slopes gently westward and is dissected by the Canning River and tributary streams and forms a shallow river valley.

Hydrological Processes

Water features

The Canning River takes a relatively straight channel pattern as it cuts through the areas of low topography from Roleystone to Kelmscott. Downstream of Kelmscott, the river takes the form of irregular meanders and the channel width becomes increasingly irregular due to the lower gradient of the river channel. The river is located in a shallow channel and the flood plain is relatively narrow. The embankments are moderate to steep sloped and in parts the channel braids. Downstream of Bernard Street, an island has formed in the river due to the deposition of fine alluvial sediments. There are several shallow tributary creeks which drain from the surrounding land and confluence with the Canning River. The largest in the area is Stony Brook.

Bathymetry

The channel is on average less than one metre with an embankment of up to 2 metres. In most parts there is a flat flood plain before the topography increases in gradient.

Flooding

Seasonal inundation of the flood plain occurs during periods of high water, however the area is well drained and the land is rarely waterlogged for long periods. The floodway is quite narrow upstream, however from Brookton Highway to Orlando Street it broadens markedly, often to approximately 100 metres.

Erosion and Accretion

There are some points of minor bank erosion on the meander bends and as the river cuts around higher land. An example is the exposed roots of the exotic elm trees at Sereagio Park.

Vegetation Communities

Native

Darling Scarp Complex

The indigenous flora of this precinct is classified as being as part of the Darling Scarp Complex (DCE, 1980). The vegetation ranges from open woodland to lichens according to the depth of the soils. Woodland flora includes wandoo (*Eucalyptus wandoo*) with Darling Range ghost gum (*Eucalyptus laelia*) and marri (*Eucalyptus calophylla*). The various communities which make up this complex are described below.

***Eucalyptus-Melaleuca* Community**

All the riverine vegetation is of the flooded gum (*Eucalyptus rudis*) and swamp paperbark (*Melaleuca rhaphiophylla*) low forest and occupies the entire floodway. The understorey mainly consists of weeds although some relic natives persist such as variable leafed grevillea (*Grevillea diversifolia*). The exotic shrub (*Astartea fascicularis*) and the native coojong (*Acacia saligna*) which is not indigenous to the area are scattered throughout the area. As the river meanders near Roberts Road, the flooded gum- paperbark complex continues with *Astartea fascicularis* understorey.

***Eucalyptus* Community**

On the higher banks, marri (*Eucalyptus calophylla*) is present in the complex with the occasional moonah (*Melaleuca priessiana*). In the marri areas, the understorey includes prickly moses (*Acacia pullcella*) and blackboy (*Xanthorrhoea preissii*). Upstream of Bernard St to Brookton Highway, native understorey species are quite common, however east of Brookton Highway, weeds are particularly prolific. Between the crossing of Brookton Highway and Stony Brook, jarrah (*Eucalyptus marginata*) and marri (*Eucalyptus calophylla*) cover the hillsides. The understorey is less disturbed compared with the river complex and there is an abundance of blackboy (*Xanthorrhoea preissii*) and buttercup (*Hibbertia* sp). Wandoo (*Eucalyptus wandoo*) and the Darling Range ghost gum (*Eucalyptus laeliae*) are found on the shallower gravelly soils.

Exotic

Exotic species include the giant reed (**Arundo donax*), castor oil bush (**Ricinus communis*), edible fig (**Ficus carica*), blackberry (**Rubus* sp), blue periwinkle (**Vinca major*), Japanese honeysuckle (**Lonicera japonica*), bridal creeper (**Myrsiphyllum asparagoides*) and fountain grass (**Pennisetum setaceum*). Also willow tree (**Salix* sp), pampas grass (**Cortaderia selloana*), cape lilac (**Melia azedarach*), morning glory creeper (**Ipomea indica*), poplar trees (**Populus* sp), veldt grass (**Ehrharta calycina*), bamboo (**Bambusa* sp) and coral tree (**Erythrina caffra*) are present.

Blackberry (**Rubus* sp) is a serious problem and in places almost covers the entire river channel such as upstream of Brookton Highway crossing. Several trees such as jacaranda (**Jacaranda minosifolia*) and sugar gum (**Eucalyptus cadocalyx*) have been planted.

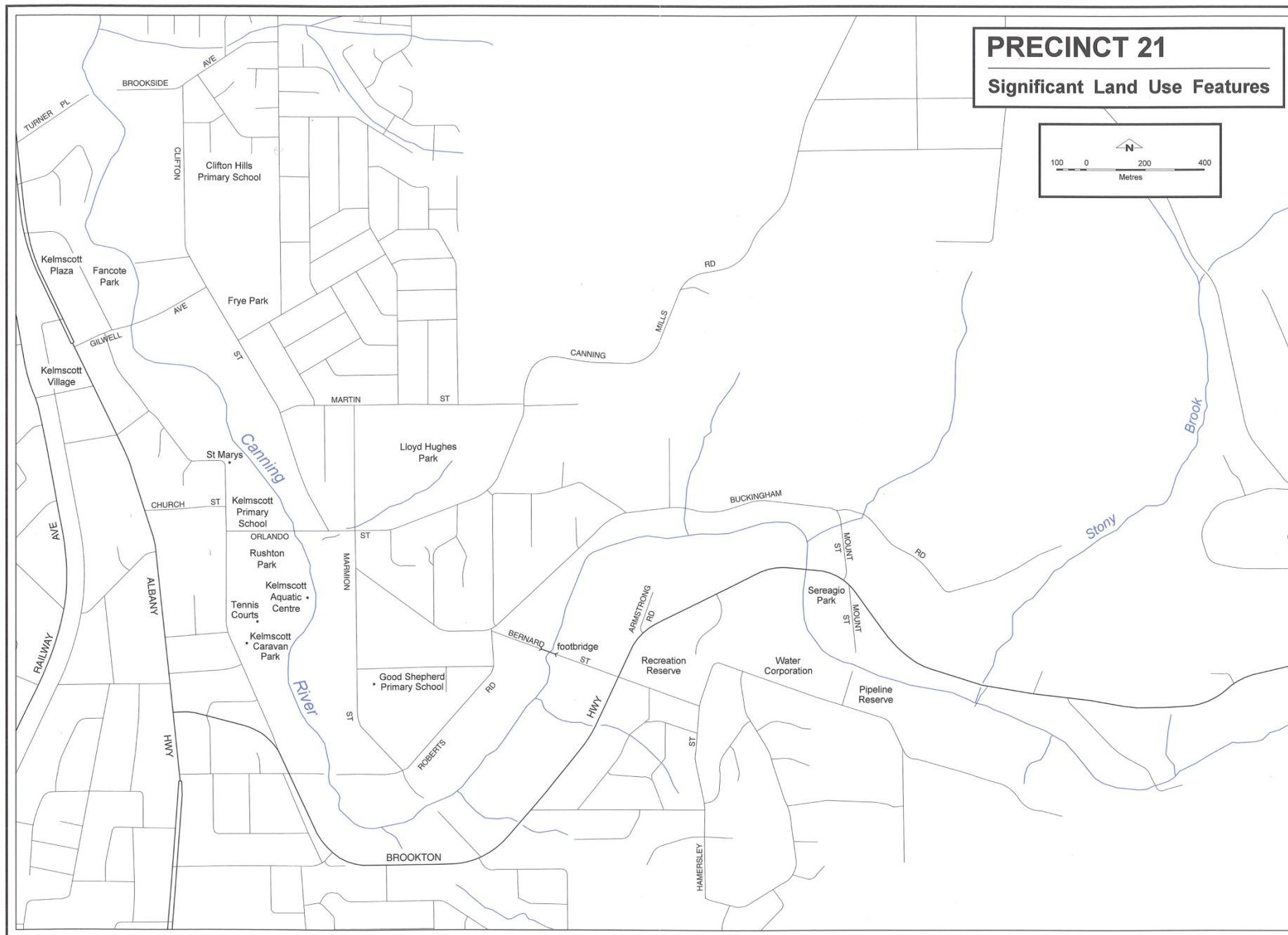
Historical Land use and Resulting Environmental Changes

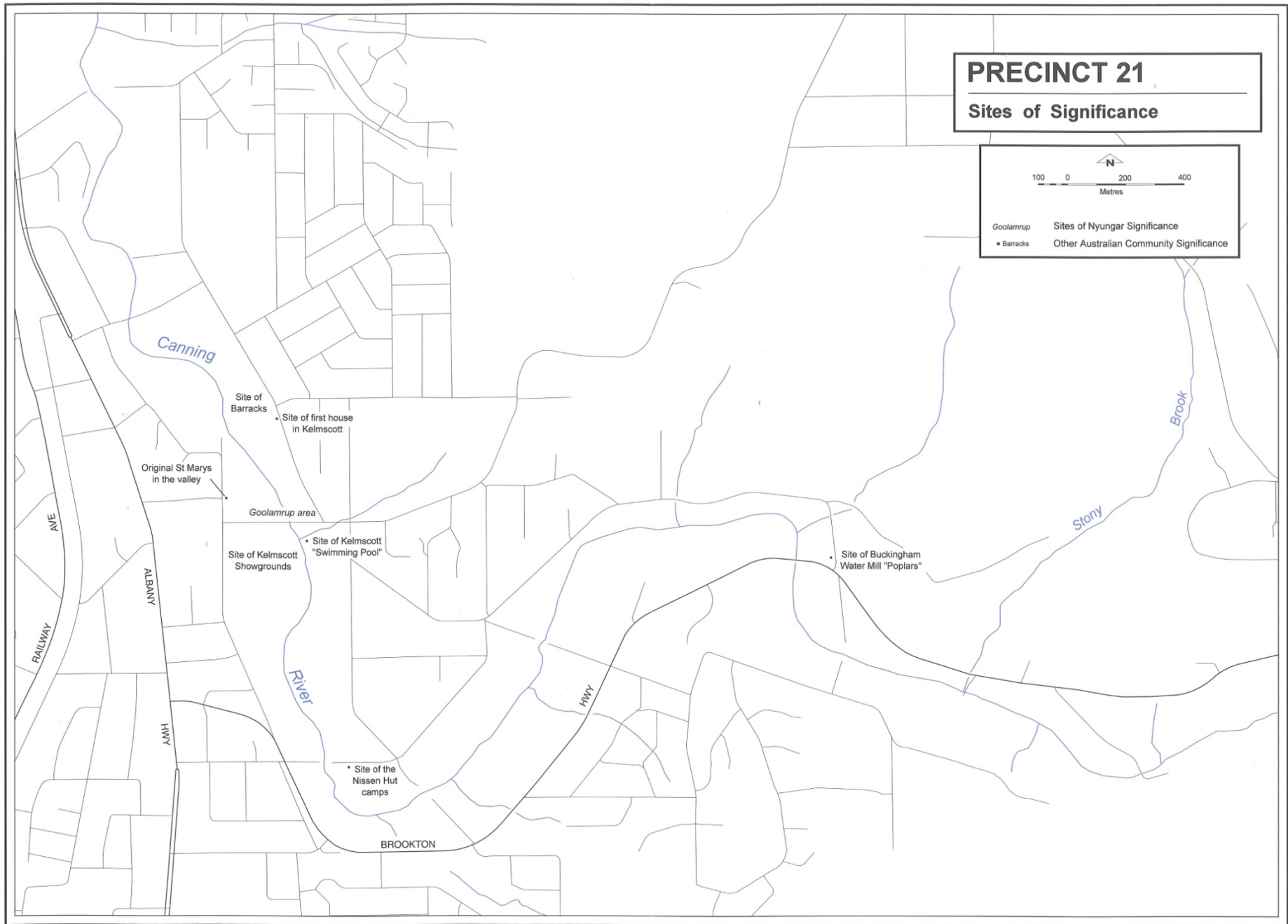
The town site of Kelmscott was chosen by a party lead by Governor Sir James Stirling in November 1829 and on the 6 July 1829 the new town was proclaimed by the Governor. Kelmscott was built as a barracks for the 63rd Regiment and the first building was their wattle and daub barracks on the eastern bank of the river (Fletcher, 1994). The regiment was established in the town to allay the fears of the settlers of being attacked by the local Aboriginal people. The settlers along the Canning River had been attacked on several occasions by the Nyungar who were defending their traditional lands. The officer in charge was Captain Theophilus Ellis who later died in the Battle of Pinjarra. The town site was on the road, or sandy track, which leads to the town of Albany. The first road passed through the town of Roleystone; however in 1836 a new road was surveyed from Kelmscott past Neerigen Brook and is now the path of Albany Highway (Fletcher, 1994).

By 1893 the railway line from Perth to Bunbury had been officially opened which encouraged the growth of the area. The products of the region such as fruit and timber were easily exported from the area. The Armadale town site quickly overtook Kelmscott as the regional centre due to the rapid development of residential, commercial and civic buildings around the Armadale town centre and the Fremantle and Armadale railway junction.

Early settlers in the area included Thomas Buckingham who established a farm adjacent to Stony Brook in the 1860s (McDonald and Cooper, 1988). Buckingham established a timber mill on the property in the 1890s and timber was cleared from the surrounding areas to meet the high demand for timber during this boom construction period.

Many areas of Kelmscott were cleared for orchards after the 1840s. The rich soil and unlimited availability of water from the Canning River made this location attractive for growers. Since the construction of the Canning Dam water supplies have been reduced in this area. Roleystone was opened up by Peet and Co in 1904 and was promoted as a fertile valley, ideal for horticulture and market gardens (Fletcher, 1994). Fruits and vegetables produced were of high quality and these were exhibited at the Kelmscott Showgrounds which is now known as Rushton Park. During and after World War II, thousands of immigrants arrived in Australia. Along the Canning River on River Road and Marmion Street two Nissen hut camps were constructed to house people from mainly middle and Eastern Europe. In addition, from 1948 a large number of Dutch migrants settled in the area (Fletcher, 1994).





Present Land Use and Social Patterns

The land along the main highways has become increasingly residential particularly from the mid 1960s onwards. Subdivision of rural properties for small residential blocks has dramatically changed the landscape, however there are several properties particularly in the Buckingham Road area which are quite large and used for grazing while smaller rural properties occur downstream. The subdivisions from the 1970s include the Kingsley, Westfield Park and Clifton Hills estates.

Kelmscott Primary School is located on the river foreshore adjacent to the Orlando Street crossing. The school faces onto the river and the oval at Rushton Park is an attractive recreation area.

The St Mary in the Valley church and cemetery were established in 1871. The original church was demolished in the early 1960s; however the new church and the pioneer grave site are important features on the river banks, giving the area local identity and a link with its history.

There is a ribbon of commercial premises along Albany Highway and the main complexes are the Kelmscott Village Shopping Centre opened in 1969 and the newer Kelmscott Plaza Shopping Centre. Sereagio Park Reception Centre is a notable feature on the Canning River. Adjacent to the park, is the WAWA pipeline reserve which has a silver water pipe crossing the river at this point.

Recreation nodes

Fancote Park is located behind Kelmscott Plaza and a notable feature of the park is a small castle/folly which has been constructed out of red rocks and cement. There is also other play equipment in the park and there has been a scattering of trees planted on the flat lawn area.

Rushton Park was originally the Kelmscott Showground. The park is mainly used as an oval by the local primary schools. A wooden hall was built in 1892 to cater for the local agricultural society meetings; however this was demolished in the mid 1960s and replaced with a larger hall which is present today. Adjoining Rushton Park is Kelmscott Reserve which is a picnic spot on the river banks and it is located in front of the Kelmscott Pool. The reserve has several barbecues. The Kelmscott Pool was constructed in 1957. The one-third size Olympic pool was the first to be constructed by a metropolitan municipal authority.

Adjacent to the parkland is the Kelmscott Caravan Park which has mainly permanent residents. Frye Park has basketball courts

and other formal sport facilities and is adjacent to the Clifton Hills Primary School. The Bernard St Reserve has a footbridge and a fringe of riparian vegetation.

Public access

The Canning River can be crossed at Brookside Avenue Footbridge, Gilwell Avenue, Orlando Street, Brookton Highway and Agostino Road. There are two pedestrian crossings which are the Brookside Avenue Footbridge and the Bernard St Footbridge.

Sites of Nyungar & Wider Australian Community Significance

Nyungar significance

The area of Kelmscott was known to Nyungars as *Goolamrup*. The Canning River is a significant element in the landscape for Nyungar, although there are no specific sites of significance identified within this area (O'Conner, 1986).

Other significance

The name 'Kelmscott' was chosen by Stirling as a tribute to the birth place in England of Archdeacon Thomas Scott. Scott was an Anglican cleric who having been delayed for some months at Fremantle while his ship was being repaired spent his time establishing the Anglican Church in the Swan River Settlement (Fletcher, 1994).

There is a historic marker to indicate the site of the first house in Kelmscott (1830) occupied by Henry Martin. An old wooden bridge near Martin Road takes the form of two logs which have been weathered to smooth forms by the river constantly running over the wood.

Saint Mary's Church and graveyard 1871 is on River Road on the western bank of the river. The original St Mary in the Valley Anglican Church was built by Thomas Buckingham (Jnr) in 1871 and he was the first to be married in the church and is also buried in the graveyard.

On the corner of Clifton and Martin Streets the 63rd Regimental Barracks was established in 1831 on the eastern bank of the Canning River.

On Orlando Street, Kelmscott, there stood a turn of the century old gaol building which was demolished in 1977.

The Rushton Reserve was the original Kelmscott Showgrounds. The Canning River was originally deep enough at this section to be used as the local pool and was referred to as the 'Kelmscott Pool'.

The original Kelmscott School was opened in 1891 and the original building was demolished in the 1960s.

In the 1950s Nissen huts were located on River Road (now Brookton Highway, Kelmscott) for migrants. The huts were often home to north and middle European migrants for up to five years. The power saw mill established by Thomas Buckingham in 1886 was located on the corner of the Brookton Highway and Mount Street. The mill was on the 'Poplars' property owned by Buckingham and a historic marker is present.

A contour channel was constructed between Kelmscott and Gosnells. The aqueduct carried water from the Canning Dam to the metropolitan area from the 1930s and continued to be used for about thirty years.

Conservation Areas

System 6

M75 Upper Canning and Southern Rivers

The recommended area comprises the Canning River and its fringes from Nicholson Road to the boundary of the State Forest, together with those parts of the Southern and Wungong Rivers within the City of Gosnells. Much of the area is reserved for Parks and Recreation under the Metropolitan Region Scheme. The river is well fringed with flooded gums and paperbark although the ground flora has been almost eliminated by grazing and clearing. The area is significant for its open space of regional significance and its proximity to Perth's residential areas. The recommendations include encouraging the growth and regeneration of flora and fauna and preventing vehicular access while allowing low impact access to the river.

Landscape Description

Precinct Description

Waterform and natural riparian zone

The Canning River irregularly meanders throughout the precinct. Upstream of Brookside crossing the river width becomes increasingly restricted by the surrounding bedrock. From Brookside Avenue to Orlando Street the embankments are quite vertical before rounding off to a flat flood plain and narrow river channel. The flood plain in places is quite wide and covered with riparian vegetation. Upstream of Orlando Street, the river takes a relatively straight channel pattern as it cuts through the areas of relatively low topography from Kelmscott to Roleystone. At this section, the embankments are moderate to steep sloped and the channel width is restricted by the surrounding geology. Downstream of Bernard Street, the river channel has braided forming a central island which is vegetated. Upstream near Stony Brook the river channel is relatively narrow and often blocked by weed species, such as pampas grass and bamboo. There are several tributaries that drain the surrounding landscape and one of the larger channels is Stony Brook. The brook is intermittent and is a shallow gully.

Due to the narrowness of the river channel, the canopies of the fringing trees meet over the river enclosing the channel. The understorey is mainly weeds and often the creepers smother the tree branches and river banks. From most sections of this precinct, the waterform viewscape is quite broad, due to the valley shaped topography and the limited fringing vegetation.

Landform

The downstream section of the precinct is relatively flat and gently undulating compared to the deeply incised valleys with rocky steep slopes of the upstream section of the river course. The Ridge Hill Shelf slopes westward and is dissected by the Canning River and tributary streams which form a shallow river valley. The landform is particularly attractive around Armstrong Road, where the Darling Scarp forms a high undulating hillside with the river valley at the base of the hills. The height and size of the hillsides give a sense of depth and provide an interesting complex form to the river landscape.

Vegetation

Flooded gum and paperbark low forest fringes the floodway of the Canning River. The understorey mainly consists of weeds although some relic natives persist. In areas, such as Orlando Street Bridge, the river is full of weeds and exotic trees such as jacaranda and giant reed. The river channel is often blocked by emergent weeds, such as bamboo.

In several places, the floodway has been mowed to create a lawn for riverside parklands. The land around the river has mostly been cleared over time and some trees have been retained for aesthetic purposes around houses, while others remain in pasture land, such as along Roberts Road. On the topographically higher land marri and jarrah woodland remains uncleared. This provides a deep grey green background to the river valley. The pastured land and undulating hills are particularly reminiscent of a European landscape.

Riparian land use

Adjacent to Gilwell Avenue is Fancote Park, which acts as a barrier of open space between the river and the back of Kelmscott Plaza. The parkland is mainly cleared of its natural vegetation; however a few planted trees and a remnant fringing vegetation community make the flat parkland more aesthetically pleasing. One of the most attractive features of the park is the Darling Ranges which act as a backdrop to the park and provide an interesting landform against the flat lawned park.

There are two wooden logs across the river at Martin Street, which have become weathered by the water. They provide an informal crossing walkers and mountain bikers. They are a rather attractive feature as they cause ripples in the water and provide a visual link between the two banks.

Rushton Park and the adjoining Kelmscott Reserve are important public foreshore access spots within the town of Kelmscott. They provide pleasant recreational locations due to the remnant fringing vegetation and the valley form of the river flood plains. The park has several buildings including a pale brick simply designed hall, several sheds pool and change rooms. There are several old orchards within the park lawn. The river reserve is within the river valley. The reserve has several barbecue facilities beneath the shade of the flooded gums.

The Orlando Street Bridge is a low form bridge which is in line with the edge of the river valley embankments. It has metal balustrades and a narrow superstructure. Adjacent to the bridge is a silver water pipeline which has a mixture of wooden and cement struts and the structure has been graffitied. The bridge and pipeline give the river reserve an enclave effect by severing the river from downstream and emphasising the height of the river valley embankments.

The Bernard Street Footbridge is adjacent to a reserve of uncleared wandoo and marri open woodland. There are several native understorey species on the higher topographic ground, while adjacent to the river weeds flourish. The bridge is made of several steel plates and has a pipeline adjacent to the structure.

The bridge and pipeline covered with graffiti and with the abundance of bamboo, the area is aesthetically unattractive.

Stony Brook Bridge allows Brookton Highway to cross the stream. It has a concrete superstructure with a white painted traffic barrier and vertical concrete abutments. The bridge allows access to private properties and is hidden by surrounding vegetation.

Land use

The precinct is becoming increasingly urban residential land. An example of the increase in urban development is the Riverside Villas which have been constructed by a single developer for individual purchase. The houses are uniform in design and are constructed in pale limestone coloured brick. Along Clifton and Marmion Streets, the houses range from small single residential blocks to orchard properties. The homes are built mainly in the 1970s styles although several are older properties. South of Orlando Street, there are several very attractive orchards, due to their location on an undulating landform and abundance of fruit trees. They have several old weathered sheds and older style residential properties which give the landscape a rural and historical identity.

Kelmscott Village has a large car park and the box shaped complex is painted red and white on the outside. The building is rather unattractive and there are several graffitied walls.

Kelmscott Primary School is in an attractive location with the play equipment adjacent to the river embankment. The school itself is constructed of red brick and has had several additions over the years resulting in different building styles. Further upstream there are a mixture of old and new houses. The recently constructed Good Shepherd Primary School is located on a hill at Marmion Street and is built in a 'Federation' style.

The properties become large along Roberts Road. Many front onto the river which makes pedestrian access difficult. Many properties have a few sheep or horses grazing within paddocks while others have small orchards. There is a plant nursery on Roberts Road.

Sereagio Park is an attractive two storey building which is a combination of the Victorian, Georgian and Regency styles. The garden is entirely transformist with the whole ground transformed into an English country estate by planting exotic flora in geometric patterns. The section of river which runs adjacent to the homestead has been converted to an English stream, with elm trees planted in two rows on the banks of the river. A wooden bridge crosses the river and has a creeper growing over the hand

rails. The result is a picture scene straight from England. Surrounding the estate is a citrus orchard which is one of the few remaining orchards in the area. The orchard is an attractive rural land use which gives the area an attractive landscape identity.

Dominant Landscape Character

The dominant landscape character along the downstream section of this precinct is suburban. The suburban area is made up a mixture of housing styles and ages. Increasingly, subdivisions are occurring and there are several single storey duplexes adjacent to the river. In addition many of the older houses are being replaced with more modern houses. In general, the house designs are modest and the gardens are eclectic. The Kelmscott retail area has a large car park and the ribbon style shopping complex run parallel to Albany Highway. They are not particularly attractive elements in the suburban landscape due to conspicuous advertising and signs.

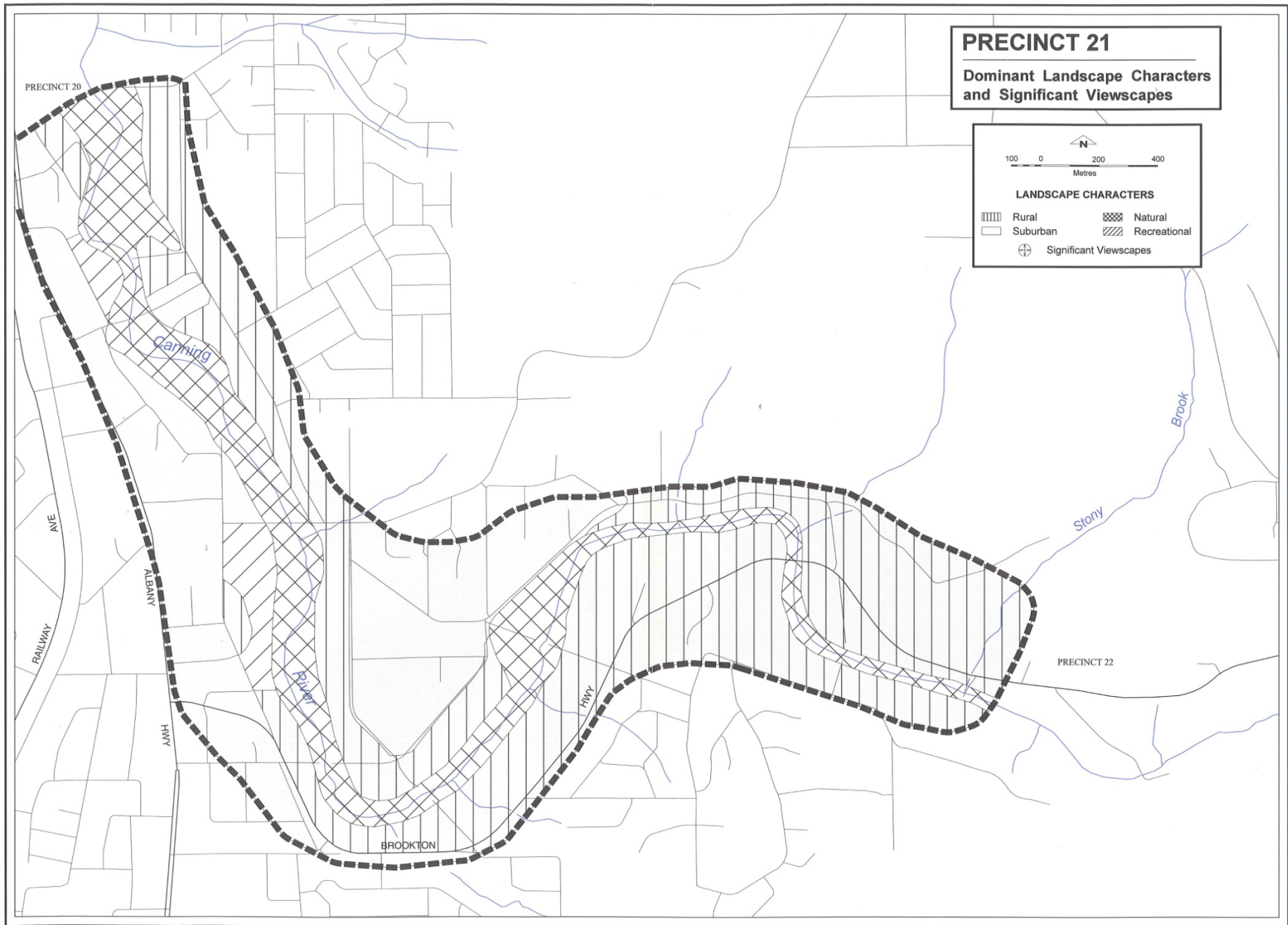
Along this section of the Canning River, there is a narrow but almost continuous ribbon of riparian vegetation. Soft weedy plants have invaded much of the understorey, however melaleucas and flooded gums form an attractive line of trees.

There are two pockets of recreational landscapes along this section of the river. These play an important part in linking the fringing riparian vegetation to the surrounding urban areas. They act as a section of open space which minimises the contrast between the two landscape elements.

For much of the upper section of the precinct, the landscape is predominantly rural. Remnant orchards and market gardens are mixed in with hobby farms and horse agistments. The rural properties are relatively small scale and they appear not to be supporting significant rural activities. The undulating landform, pastures and ribbon of natural vegetation, is indicative of an English rural landscape and what is considered attractive according to European landscape values.

Significant Viewscapes

From many locations of the upper section of this precinct there are several attractive viewscapes of the undulating hills and the Canning River running through the valleys. The indigenous vegetation has been restricted to a ribbon of riparian vegetation along the stream line. The rest of the land has been cleared for pasture and orchards, and residential buildings dot the landscape. The result is an attractive rural landscape on a complex landform.



Conforming and Non Conforming Elements in the Landscape

The orchards are a particularly attractive landscape feature as they are quite prominent in the rural landscape, due to their linear plantings and pruned forms. The wide open pastures are also attractive on the undulating landform.

The many abundant weeds dominate the understorey of the remnant riparian vegetation and detract from the naturalness of the vegetation corridor. Several bamboo stands block the river channel at the Upper section of the precinct.

Several bridges and water pipes are graffitied which are localised detracting elements in the environment.

Recommendations for Maintenance and Enhancement of the Present Landscape Character

- There is the opportunity to remove weeds from remnant riparian vegetation which detract from the natural landscape character. Several areas are overrun with weeds and replanting could enhance the environmental value and aesthetics.
- Opportunity to consider the rural landscape value and ensure that the elements such as large block sizes and open fields are retained.
- It is also important that those developments built on the steep slopes take into consideration the landform and are appropriately designed to have minimal impact on the landscape.

Precinct Specific References

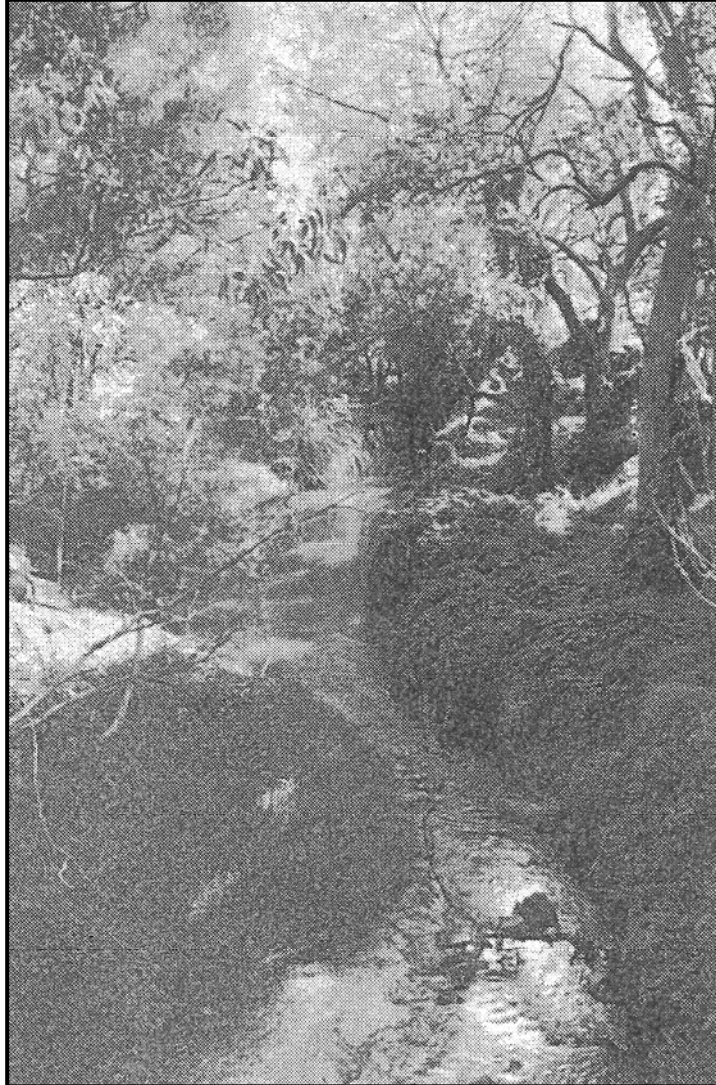
Fletcher, K. 1994. **Spanning the Years 1894-1994. Celebrating 100 years of Local Government in Armadale-Kelmscott.**



View from River Road, Kelmscott, 1930.
Swan River Trust.



View from Mount Street Footbridge, Kelmscott, 1997.
Swan River Trust.



Canning River from Orlando Street Bridge, Kelmscott, 1997.
Swan River Trust.