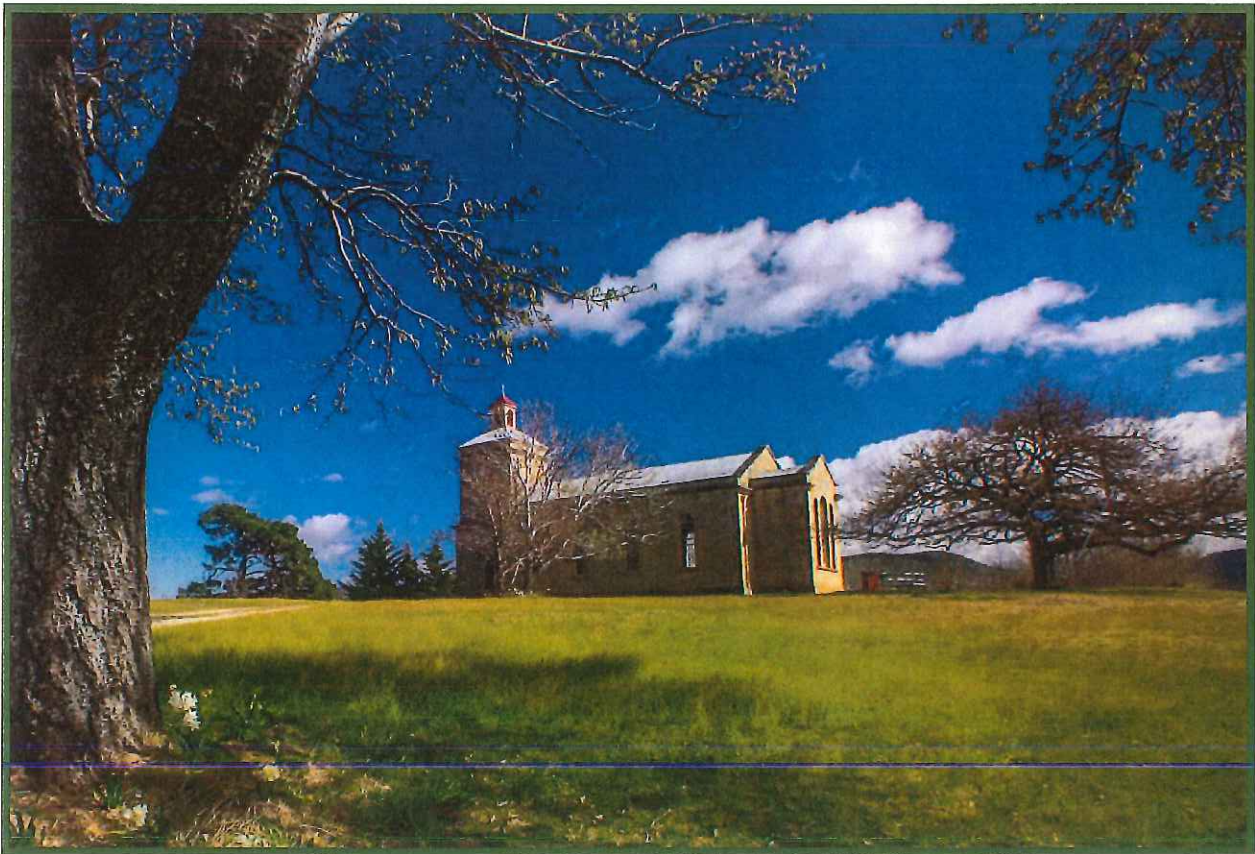




NORTHERN
MIDLANDS
COUNCIL

Avoca

Main Street – Tree Planting Report



*Prepared by: Wayne Chellis
November 2017*

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1 INTRODUCTION & BACKGROUND

A Council report was presented to the Council Meeting on 23 January 2017, at which time it was the decision of Council to engage a suitably qualified person to undertake a survey and provide a report on future tree plantings in the Main Streets of Northern Midlands townships.

The author, who has been responsible for the planning and planting of street trees for a number of years, was appointed to undertake this project. Mr Leon Lange of Lange Design, Landscape Architects, has also been engaged to work with the author to achieve the best outcomes.

The report criteria included identification of existing infrastructure and services which may restrict the future planting of trees and available space to plant additional trees in accordance with the tree planting strategy.

2 TREE PLANTING STRATEGY, TREE SELECTION AND SERVICES

A tree planting strategy was identified in the 23 January 2017 report to Council.

Trees are considered to be a valued part of our streetscape, adding value to properties as well as breaking up the line of the built environment, helping it blend with the surrounding landscape.

There is not a perfect or ideal street tree; however, the writer has selected the most suitable tree to be planted in each location.

There has been a change in attitude since the 1970's where Council Officers selected trees that were guaranteed to grow once planted in the ground, this often resulted in problems developing at a later day and, on occasion, in litigation due to problems with buildings and Council's infrastructure.

A number of factors have to be taken into consideration when planting trees in the Northern Midlands, including the following:

2.1 TREE GRATES & GUARDS

In 2010, under the direction of Council officers, designs and castings were constructed for the planting of street trees in sealed road verges and footpaths, prior to that time Tasmanian Councils sourced their tree grates and guards from mainland Australia.

The concrete surrounds have been designed to fit on the top of a cast in-situ concrete root barrier which is installed to increase the visual amenity, protect the trees from vehicle damage and support the tree guard, with steel formwork fabricated to bolt onto the concrete surround to hold the tree guard in place.

The concrete surrounds are predominately used in sealed parking areas and wide grass verges mowed with Council's ride-on mower.

Grates are installed within the footpath e.g. Longford CBD, in areas of increased pedestrian usage.

2.2 WATERING OF TREES IN THE CBD

New trees planted are watered by hand at least once per week in peak summer period for the first three years and the time period lengthens as the trees become established.

2.3 MAINTENANCE

Trees are an asset that requires regular and ongoing maintenance and with an enormous amount of work involved in the maintenance which is necessary for the health of the trees and safety of the public. It is therefore crucial that the right tree is chosen in relation to its location to minimise the amount of labour required.

Large trees need to be pruned every two years at a cost of in excess of \$1,000 per tree. Pruning consists of selective crown work, deadwood removal and lower branches need to be pruned to allow pedestrian access, cars to park and provide an uninterrupted sight line.

In accordance with tree planting guidelines Council's insurers require root barriers to be installed to ensure root growth does not cause damage (tripping points) in footpaths which may result in a future public liability claim.

The purpose of installing root barriers is to direct the roots downwards instead of outwards. Unfortunately, this directs the roots into the clay which sometimes prevents growth if the barriers are installed too deep and may even cause the tree to die as the trees become established.

Street trees e.g. Dutch Elm trees (at Ross), which were previously planted under power lines required hard pruning which was necessary on a regular basis. On these old pollards decayed sections develop and promotes new growth, both of foliage and roots. Growth of the roots often results in damage to Council's infrastructure, including footpaths, kerb & gutter and roadways, as well as neighbouring property damage.

2.4 CLEARANCE ZONES

In addition to the three-metre clearance zones, trees planted in narrow nature strips need to be clear stemmed up to a height of 1.8 metres to provide adequate site distance for property owners to access the road from their driveways.

2.4.1 TAS NETWORKS

On one side of the street in most Northern Midlands Towns four uninsulated high-voltage wires are located at a height of approximately seven to eight metres, an additional four uninsulated low-voltage wires are located on a wide crossbar at a height of 5 metres or lower and separate single uninsulated street light service lines are also present.

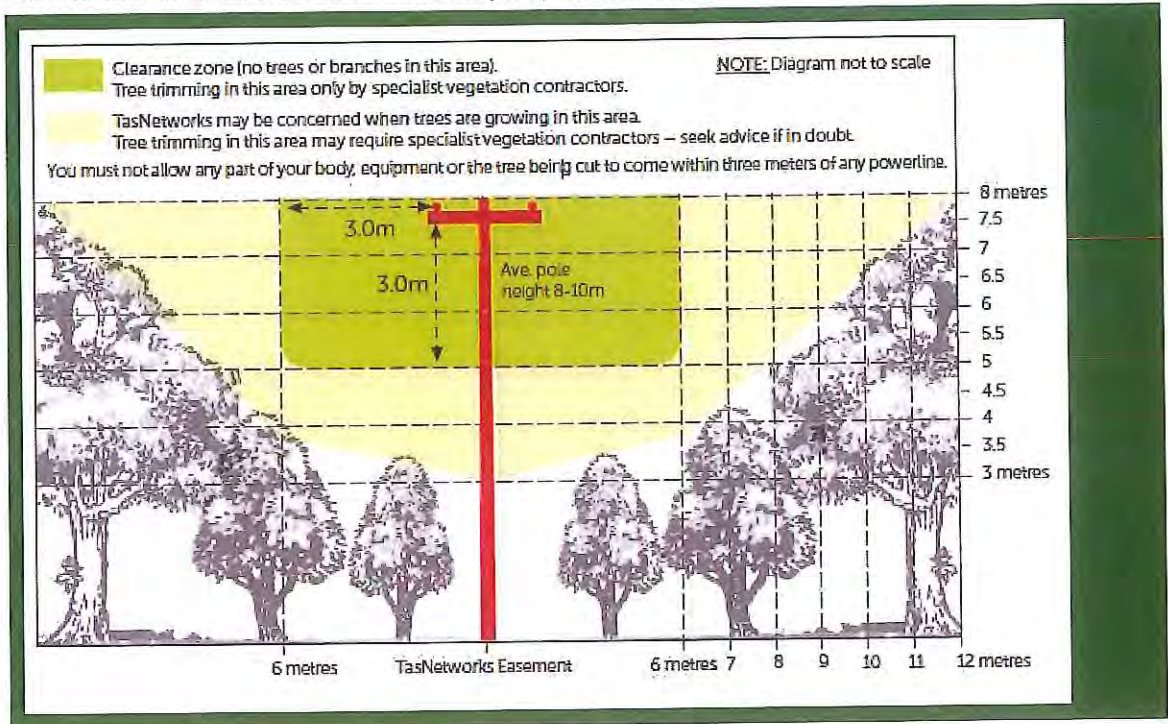
Bundling Cables

It should be noted that in many situations where uninsulated (bare wires) exist, bundled cables may need to be installed in the future at Council's cost.

Tas Networks will replace the four lower low voltage cables with an insulated bundled cable and relocated to a height of approximately seven metres in which case a one metre clearance is required; however, it should be noted that a three-metre clearance is still required from the high-voltage wires installed at a height of eight to ten metres.

Without bundling the cables prior to planting of trees or having a plan to bundle the cables within say two years, trees should not be planted under low-voltage wires unless there is a plan in place to maintain the trees to a satisfactory height.

The following illustration of clearance zones is provided on Tas Networks' website, unfortunately the diagram provided is not to scale and does not accurately reflect the height and number of wires that exist on the majority of the poles.



2.4.2 UNDERGROUND SERVICES

Underground power has only been installed in the Main Street of Ross and in new subdivisions; however, the following is noted in this regard: underground power has a cable exclusion zone, being one-metre either side, plus an additional one metre hazard zone.

Water, sewer, stormwater and Telstra services are also located in these narrow nature strips.

If guidelines and recommended distances from services are adhered to it is almost impossible to plant trees in many of the narrower nature strips (including new subdivisions) which are often not of sufficient width.

2.5 ENVIRONMENTAL CONDITIONS

In addition to factors such as maintenance and clearance zones, trees planted in the Northern Midlands area are subject to the following identified environmental conditions.

- Ground conditions become compacted preventing water flowing to the roots.
- Generally, particularly to the south of the municipal area, weather conditions in the Midlands can be extreme ranging from below zero degrees in winter to 35 degrees in summer. During the summer period low levels of rainfall occurs across the Northern Midlands and trees that do not have a watering system suffer and sometimes die. Council's workforce hand water trees that are planted in main streets for two to three years after planting.

- Trees need to be non-toxic, non-allergenic and should not have fruit that may be hazardous to persons accessing infrastructure.

3 EXISTING TREE PLANTINGS

Several trees were planted in the Avoca Main Street prior to amalgamation; however, only a very small number have survived.

4 FUTURE PLANTING OF TREES

4.1 TREE GRATES & GUARDS

Tree guards should be installed at each tree for protection and to support the trees during windy days.

Concrete surrounds may be considered to protect the trees in the wide section on the northern side at the frontage of the Town Hall and possibly from Gray Street to Churchill Street. Concrete surrounds will generally not be required in other locations as the trees will be protected from vehicles by the kerb and, in addition, there is insufficient space to place concrete surrounds.

4.2 WATERING OF TREES IN THE CBD

Prior to planting trees consideration needs to be given to the method of watering the trees on a weekly basis in the summer period as it would not be considered cost effective to travel from Campbell Town or Longford with a small truck and tanker to water the trees.

4.3 UNDERGROUND SERVICES - MAKING PROVISION FOR FUTURE SEWERAGE PIPE INSTALLATION

Future tree planting will be undertaken within the grass naturestrip between the footpath and kerb & gutter which ranges from 2 metres wide to 2.5 metres in width, with the exception of the two end sections where no kerb and gutter exists on the northern side where the naturestrip is wider.

Consideration has been given to the installation of future sewerage pipes within the naturestrip between St Paul's Place and Gray Street.

It is therefore proposed that the trees be planted closer to the kerb to allow sufficient space for the sewer to be installed, approximately 350 mm from the footpath behind the HEC poles.

Sewerage pipes should be installed in the gravel verge on the southern side from Gray Street to Churchill Street and in the grass verge (if required) on the northern side from Gray Street to Churchill Street

5 SUGGESTED FUTURE TREE PLANTING

5.1 ST PAUL'S PLACE TO BLENHEIM STREET (NORTHERN SIDE)



For the purpose of describing the location of each tree chainage 0.0 is HEC pole number 526200 which is in close proximity to Story's Creek Road.

It is proposed that *Pyrus Capital* (Ornamental Pear) trees be planted at a distance of 3.9 metres from the edge of the sealed road at chainage 0.008, 0.018, 0.028, 0.038 and 0.048.

5.2 BLENHEIM STREET TO ARTHUR STREET (NORTHERN SIDE)



For the purpose of describing the location of each tree chainage 0.0 is the pram crossing on the corner of Falmouth and Blenheim streets.

It is proposed that *Pyrus Capital* (Ornamental Pear) trees be planted at a distance of 1 metre from the back of the kerb and gutter at chainage 0.037, 0.057, 0.072, 0.087.5 and 0.104.

5.3 ARTHUR STREET TO GRAY STREET (NORTHERN SIDE)



For the purpose of describing the location of each tree chainage 0.0 is survey marker 10222 on the corner of Arthur and Falmouth streets.

It is proposed that *Pyrus Capital* (Ornamental Pear) trees be planted at a distance of 1 metre from the edge of the kerb and gutter at chainage 0.017, 0.039, 0.059, 0.083, 0.101.

5.4 GRAY STREET TO CHURCHILL STREET (NORTHERN SIDE)



For the purpose of describing the location of each tree chainage 0.0 is HEC pole number 203107, eastern side of *The Cow Shed's* asphalt driveway.

It is proposed that *Pyrus Capital* (Ornamental Pear) trees be planted at a distance of approximately 3.7 metres from the edge of the sealed road, to be in line with the trees planted between Arthur and Gray streets at chainage 0.010, 0.030, 0.050, 0.070, 0.090, 0.110 and 0.130.

5.5 BLENHEIM STREET TO ARTHUR STREET (SOUTHERN SIDE)



For the purpose of describing the location of each tree chainage 0.0 is HEC pole number 203074 on the corner of Falmouth and Blenheim streets.

It is proposed that *Prunus Oakville Crimson Spire* (Ornamental Plum) trees be planted at a distance of 1 metre from the back of the kerb and gutter at chainage 0.032, 0.059 and 0.093.

5.6 ARTHUR STREET TO GRAY STREET (SOUTHERN SIDE)



For the purpose of describing the location of each tree chainage 0.0 is the pram crossing on the corner of Arthur and Falmouth streets.

It is proposed that *Prunus Oakville Crimson Spire* (Ornamental Plum) trees be planted at a distance of 1 metre from the edge of the kerb and gutter at chainage 0.016, 0.039, 0.064, 0.082 and 0.126.

5.7 GRAY STREET TO CHURCHILL STREET (SOUTHERN SIDE)



For the purpose of describing the location of each tree chainage 0.0 is the Water Main Valve in the road on the corner of Gray and Falmouth streets.

It is proposed that *Prunus Oakville Crimson Spire* (Ornamental Plum) trees be planted at a distance of 1 metre from the edge of the kerb and gutter at chainage 0.014, 0.034, 0.064, 0.079, 0.101 and 0.119.

6 TREE GENUS & SPECIES

Wherever possible it is preferred that the same genus and species of tree is planted on both sides of the street.

Hydro wires on the southern side of the street will restrict the trees to a smaller genus and species; however, a taller/narrow tree is recommended for the northern side which has no height restrictions.



Prunus cerasifera 'Oakville Crimson Spire'
(Ornamental Plum)

Pyrus calleryana 'Capital' (Ornamental Pear)

7 COMMUNITY CONSULTATION

7.1 REQUESTS FROM COMMITTEES

From time to time, Local District Committees and communities request that Council consider the planting of street trees. Consideration is given to these requests with trees being planted as deemed appropriate. A number of factors are taken into account when considering such requests, which include verge width, presence of underground / overhead services. Once a location and tree type is identified as being appropriate, the owners of neighbouring properties are consulted.

7.2 PROPOSED CONSULTATION STRATEGY

In general residents in the Northern Midlands take responsibility for the maintenance of the nature strip at the frontage of their property and should therefore be given consideration in relation to the future maintenance expectations. Experience has shown that trees planted at the frontage of properties where the owners do not support the planting is unsuccessful.

Generally, where consideration is being given to planting trees in grass nature strips, they are only planted if property owners agree to water them.

The frontage of some of the land on Falmouth Street is vacant; therefore consideration should only be given to the planting of trees at the frontage of properties where occupiers have undertaken to water trees.

Consultation should also be undertaken with the Local District Committee.

8 LOCATION & COST

The cost of purchase and planting trees and fabrication and installation of tree guards including concrete surrounds in 2 sections is \$84,000.

Priority	Location	Inclusions	Cost
1	St Paul's Place to Blenheim Street (northern side) – plant 5 trees as mentioned in items 5.1	includes tree guards and concrete surrounds	\$15,000
2	Blenheim Street to Arthur Street (northern side) – plant 5 trees as mentioned in item 5.2	includes tree guards, and root barriers	\$10,000
3	Arthur Street to Gray Street (northern side) – plant 5 trees as mentioned in item 5.3	includes tree guards, and root barriers	\$10,000
4	Gray Street to Churchill Street (northern side) – plant 7 trees as mentioned in item 5.4	includes tree guards and concrete surrounds	\$21,000
5	Blenheim Street to Arthur Street (southern side) – plant 3 trees as mentioned in item 5.5	includes tree guards, and root barriers	\$6,000
6	Arthur Street to Gray Street southern side) – plant 5 trees as mentioned in item 5.6	includes tree guards, and root barriers	\$10,000
7	Gray Street to Churchill Street (southern side) – plant 6 trees as mentioned in item 5.7	includes tree guards, and root barriers	\$12,000
		Total Cost	\$84,000

RECOMMENDATION

It is recommended that the trees, as suggested in this report, be planted in the order of priority as listed.



NORTHERN
MIDLANDS
COUNCIL

Campbell Town

Main Street – Tree Planting Report



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November 2017

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A number of factors have to be taken into consideration when planting trees in the Northern Midlands, including the following:

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The concrete surrounds have been designed to fit on the top of a cast in-situ concrete root barrier which is installed to increase the visual amenity, protect the trees from vehicle damage and support the tree guard, with steel formwork fabricated to bolt onto the concrete surround to hold the tree guard in place.

The concrete surrounds are predominately used in sealed parking areas and wide grass verges mowed with Council's ride-on mower.

Grates are installed within the footpath e.g. Longford CBD, in areas of increased pedestrian usage.

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New trees planted are watered by hand at least once per week in peak summer period for the first three years and the time period lengthens as the trees become established.

2.3 MAINTENANCE

Trees are an asset that requires regular and ongoing maintenance and with an enormous amount of work involved in the maintenance which is necessary for the health of the trees and safety of the public. It is therefore crucial that the right tree is chosen in relation to its location to minimise the amount of labour required.

Large trees need to be pruned every two years at a cost of in excess of \$1,000 per tree. Pruning consists of selective crown work, deadwood removal and lower branches need to be pruned to allow pedestrian access, cars to park and provide an uninterrupted sight line.

In accordance with tree planting guidelines Council's insurers require root barriers to be installed to ensure root growth does not cause damage (tripping points) in footpaths which may result in a future public liability claim.

The purpose of installing root barriers is to direct the roots downwards instead of outwards. Unfortunately, this directs the roots into the clay which sometimes prevents growth if the barriers are installed too deep and may even cause the tree to die as the trees become established.

Street trees e.g. Dutch Elm trees (at Ross), which were previously planted under power lines required hard pruning which was necessary on a regular basis. On these old pollards decayed sections develop and promotes new growth, both of foliage and roots. Growth of the roots often results in damage to Council's infrastructure, including footpaths, kerb & gutter and roadways, as well as neighbouring property damage.

2.4 CLEARANCE ZONES

In addition to the three-metre clearance zones, trees planted in narrow nature strips need to be clear stemmed up to a height of 1.8 metres to provide adequate site distance for property owners to access the road from their driveways.

2.4.1 TAS NETWORKS

On one side of the street in most Northern Midlands Towns four uninsulated high-voltage wires are located at a height of approximately seven to eight metres, an additional four uninsulated low-voltage wires are located on a wide crossbar at a height of 5 metres or lower and separate single uninsulated street light service lines are also present.

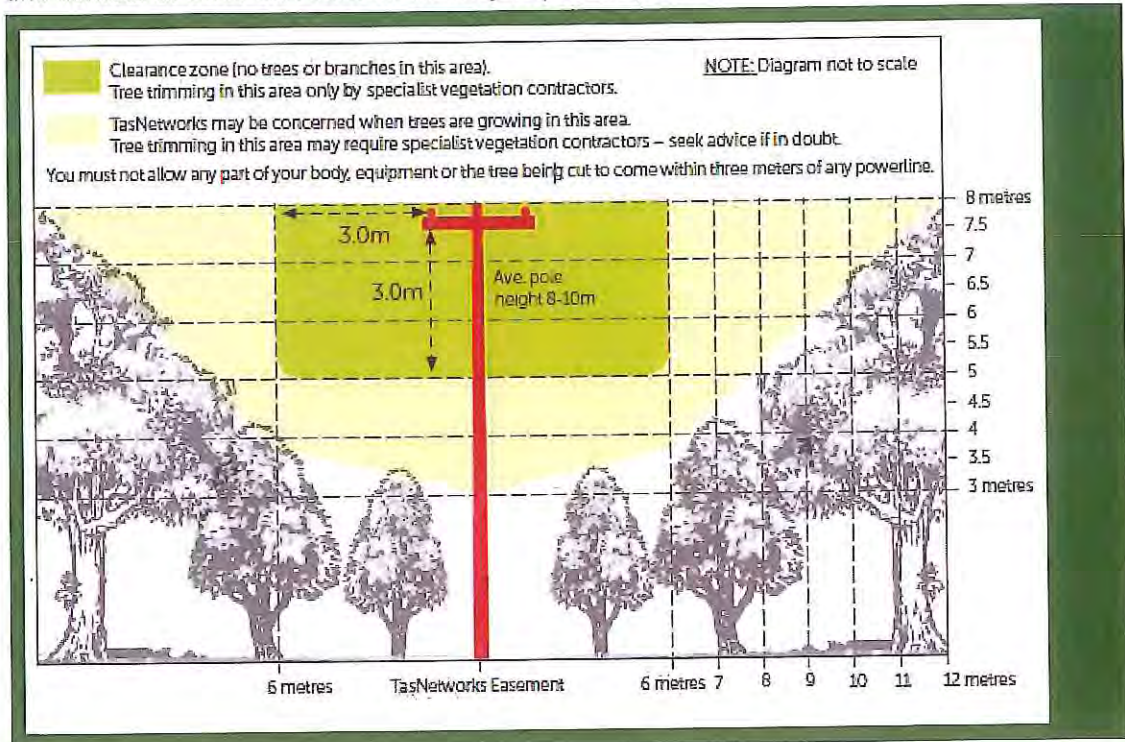
Bundling Cables

It should be noted that in many situations where uninsulated (bare wires) exist, bundled cables may need to be installed in the future at Council's cost.

Tas Networks will replace the four lower low voltage cables with an insulated bundled cable and relocated to a height of approximately seven metres in which case a one metre clearance is required; however, it should be noted that a three-metre clearance is still required from the high-voltage wires installed at a height of eight to ten metres.

Without bundling the cables prior to planting of trees or having a plan to bundle the cables within say two years, trees should not be planted under low-voltage wires unless there is a plan in place to maintain the trees to a satisfactory height.

The following illustration of clearance zones is provided on Tas Networks' website, unfortunately the diagram provided is not to scale and does not accurately reflect the height and number of wires that exist on the majority of the poles.



2.4.2 UNDERGROUND SERVICES

Underground power has only been installed in the Main Street of Ross and in new subdivisions; however, the following is noted in this regard: underground power has a cable exclusion zone, being one-metre either side, plus an additional one metre hazard zone.

Water, sewer, stormwater and Telstra services are also located in these narrow nature strips.

If guidelines and recommended distances from services are adhered to it is almost impossible to plant trees in many of the narrower nature strips (including new subdivisions) which are often not of sufficient width.

2.5 ENVIRONMENTAL CONDITIONS

In addition to factors such as maintenance and clearance zones, trees planted in the Northern Midlands area are subject to the following identified environmental conditions.

- Ground conditions become compacted preventing water flowing to the roots.
- Generally, particularly to the south of the municipal area, weather conditions in the Midlands can be extreme ranging from below zero degrees in winter to 35 degrees in summer. During the summer period low levels of rainfall occurs across the Northern Midlands and trees that do not have a watering system suffer and sometimes die. Council's workforce hand water trees that are planted in main streets for two to three years after planting.

- Trees need to be non-toxic, non-allergenic and should not have fruit that may be hazardous to persons accessing infrastructure.

3 EXISTING TREE PLANTINGS

3.1 BOND TO GRANT STREET

In 2003 twenty eight *Pyrus Chanticleer* (Ornamental Pear) trees were planted in the wide nature strip between the footpath and property boundaries on the eastern side of the street following the construction of a new kerb and gutter and parking area (verge). These trees grew quickly due to the landscaping of the grassed area which was watered by the property owners prior to the user pays cost of water was introduced.

In addition, ten of the same species of trees were planted on the western side of the street.

3.2 KING STREET TO ESPLANADE

In 2008 five *Nyssa Silvatica* trees were planted on the eastern side of the street and one *Pyrus Capital* replaced a *Prunus* tree on the western side. These trees were planted in the wide sealed road verge in a location that would not reduce the parking. Concrete surrounds and tree guards were placed on a concrete lintel around the trees to protect them from traffic.

3.3 RED BRIDGE TO FOSTER STREET

In late 1990 *Prunus Serrulata* (Japanese Flowering Cherry) trees were planted on the steep bank on the western side and on the eastern side south of the red bridge. Most of these particular trees have not grown well due to the dry location where watering is difficult without parking the water tank on the highway stopping the traffic.

3.4 MONTAGUE STREET TO SOUTH

Driveway, drainage improvements and landscaping of the grass verge at the frontage of the properties on the eastern side, immediately south of Montague Street, were carried out in 2013. At this time *Pyrus Capital* trees were planted within concrete surrounds and tree guards to enhance the entrance to Campbell Town.

4 PLANTING, CARE & MAINTENANCE OF TREES TO BE PLANTED

4.1 INSTALLATION OF CONCRETE SURROUNDS & TREE GUARDS

With the exception of the trees in front of the Fox Hunter's Return, the proposed tree plantings will be carried out in wide grass nature strips that vehicles access at the frontage of properties; therefore, precast concrete surrounds should be placed directly on the excavated ledge of the hole prepared during the planting of each tree, this will protect the tree from vehicle damage. The concrete surround also raises the soil around the tree above the level of the drain in wetter locations.

Reduced height tree guards are to be fabricated (lower height than those previously fabricated) to allow the branches to form at a lower height.

4.2 TREE HEIGHT

Grass nature strips in High Street are generally wider than in other towns situated within the Northern Midlands; however, the height of the powerlines on the western side (including when cables are bundled) eliminates the option to plant larger, taller species of trees. In this instance trees that grow up to seven metres in ten years should be planted and maintained at a satisfactory height.

4.3 PRUNING TREES

Trees will need to be crown pruned after say three years to ensure they are maintained to a height of no less than three metres below the hydro wires.

4.4 WATERING TREES

The installation of a water connection to be teed off in the centre of each run, a 25mm polythene pipe and jet sprays is a simple process (given there are no concrete driveways or footpaths to bore under) which will be of great benefit to the trees.

If Council hand waters these trees, with the limited resources available, Council will struggle to ensure the trees receive sufficient water to survive through the summer period.

At this time, the cost of connection, ongoing rates and charges has not been determined as TasWater are currently in the process of reviewing their charges

5 SUGGESTED FUTURE TREE PLANTING

5.1 CHURCH STREET TO BRIDGE STREET (WESTERN SIDE)



Low wires exist at this location therefore Council will need to have a plan in place to bundle the cables within say two or three years of planting. Council may also consider planting low shrubs; however, should recognise that this would not significantly enhance the entrance to the CBD.

For the purpose of describing the location of each tree chainage 0.0 is the centre of the large 2.7 metre wide concrete manhole top on the corner of Church and High streets.

It is proposed that *Acer Platanoides Crimson Sentry* or *Prunus Oakville Crimson Spire* (Ornamental Plum) trees be planted approximately 3.1 metres from the edge of the sealed road at chainages 0.023, 0.033, 0.043, 0.055, 0.066, 0.077, 0.092, 0.102, 0.112 and 0.122.

5.2 BRIDGE STREET TO PEDDER STREET (WESTERN SIDE)



Low overhead wires are installed to HEC pole number 347083, it is therefore suggested that the wires in this section be bundled in conjunction with the section from Church to Bridge streets.

For the purpose of describing the location of each tree, the grated stormwater pit near HEC pole number 347084 Street is Chainage 0.0.

It is proposed that the preferred alignment for planting (subject to water main location) *Acer Platanoides Crimson Sentry* or *Oakville Crimson Spire* trees is 3.5 metres from the edge of the sealed road at chainage 0.018, 0.034, 0.050, 0.066, 0.079, 0.092, 0.105, 0.118, 0.145, 0.158, 0.171 and 0.194.

5.3 PEDDER STREET TO 41 HIGH STREET (WESTERN SIDE)



For the purpose of describing the location of each tree, chainage 0.0 is the start of the concrete footpath at Pedder Street.

It is proposed that *Acer Platanoides Crimson Sentry* trees be planted at a distance of 4.1 metres from the edge of the sealed road at chainage 0.020, 0.042, 0.060, 0.080, 0.100, 0.119 and 0.140.

5.4 41 HIGH STREET TO GRANT STREET (WESTERN SIDE)



Hydro wires are in place; however, they are in excess of 7 metres high and further away from the boundary, there is therefore sufficient space to plant tall narrow formed trees.

For the purpose of describing the location of each tree chainage 0.0 is number 41, Appslawn's mailbox.

It is proposed that *Pyrus Capital* trees be planted two metres from the property boundary at chainage 0.011, 0.030, 0.048, 0.066 and 0.084. In the event that some Hawthorn trees are removed from the boundary line, additional trees could be planted at chainage 0.020, 0.039, 0.057 and 0.075.

It should also be noted that the planting of trees at this location is considered low priority.

5.5 GRANT STREET TO PEDDER STREET (EASTERN SIDE)



For the purpose of describing the location of each tree chainage 0.0 is the southern edge of the concrete footpath in Grant Street.

Trees should be planted above the invert of the open drain to ensure the roots do not become water logged during the winter.

It is proposed that *Acer Scarlet Sentinel* trees be planted 3.3 metres from the concrete footpath or approximately 4 metres from the edge of the sealed road at chainage 0.040, 0.084, 0.138, 0.174.

5.6 *ESPLANADE TO KING STREET (WESTERN SIDE)*

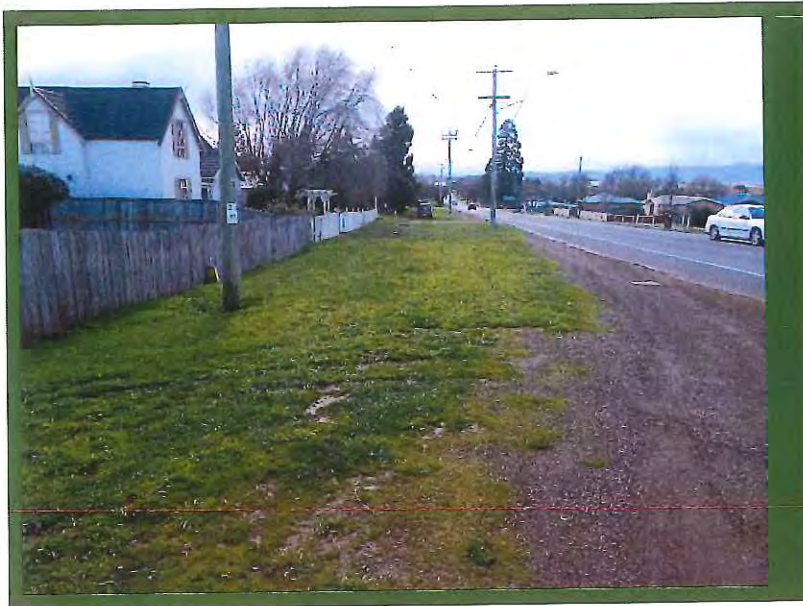


For the purpose of describing the location of each tree, the precast concrete kerb in Esplanade Street is chainage 0.0.

Plant *Pyrus Capital* trees in the asphalt road verge on the same alignment within concrete surrounds and tree guards at chainage 0.018, 0.037, 0.053, as well as replacing two of the three existing trees which are towards the end of their useful life.

5.7 *MONTAGUE STREET TO SOUTH TO PROPERTY 164 (WESTERN SIDE)*





For the purpose of describing the location of each tree chainage 0.0 is the most southern concrete gate post at the frontage of 156 High Street.

It is proposed that *Pyrus Capital* (Ornamental Pear) trees be planted 5.5 metres from the edge of the sealed road at chainage 0.006, 0.016, 0.026, 0.047, 0.069, 0.095.

5.8 MONTAGUE STREET TO SOUTH, UNITING CHURCH CEMETERY TO CORNER (EASTERN SIDE)





For the purpose of describing the location of each tree chainage 0.0 is the most northern boundary of the Uniting Church cemetery.

It is proposed that *Acer Fairview Flame* trees be planted at chainages 0.018, 0.038, 0.058, 0.078, 0.108, 0.126 and 0.144.

Tree alignment to range from 5.5 metres from the boundary at chainage 0.018 to 4 metres from the boundary at chainage 0.144.

6 TREE GENUS & SPECIES



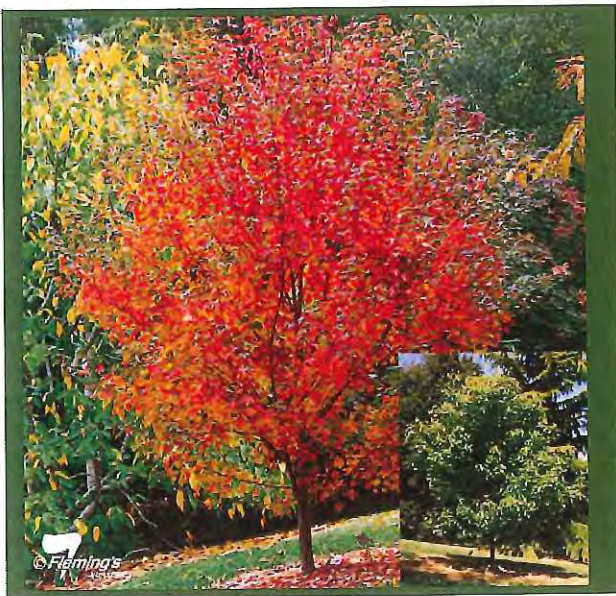
Acer Platanoides *Crimson Sentry*

Prunus cerasifera 'Oakville Crimson Spire'
(Ornamental Plum)



Pyrus calleryana 'Capital' (Ornamental Pear)

Acer x freemanii 'Scarsen'- Scarlet Sentinel



Acer Rubrum (Fairview Flame)

7 CONSULTATION

Planting of trees in Perth Main Street should have no negative effect on the property owners, therefore, consultation should be by way of advising prior to planting to ensure the trees do not substantially reduce the site distance of property owners entering Main Street.

8 LOCATION & COST

Tree planting is listed in order of priority with the locations not requiring cables to be bundled considered to be higher priority.

Priority	Location	Inclusions	Cost
1	Esplanade to King Street (western side)	includes tree guards, concrete surrounds and concrete lintel	\$12,000
2	Grant Street to Pedder Street (eastern side)	includes tree guards and concrete surrounds	\$12,000
3	Montague Street to South (western side)	tree guards and concrete surrounds	\$18,000
4	Montague Street (Uniting Church Cemetery) to south (corner) (eastern side)	tree guards and concrete surrounds	\$22,400
5	Pedder Street to 41 High Street (western side)	tree guards and concrete surrounds	\$21,000
6	41 High Street to Grant Street (western side)	tree guards and concrete surrounds	\$16,000
7	Bridge Street to Pedder Street (western side)	tree guards and concrete surrounds. <i>Note, the cost of bundling of a section of cables is not included</i>	\$38,400
8	Church Street to Bridge Street (western side)	tree guards and concrete surrounds Note: the cost of bundling of a section of cables is not included	\$32,000

RECOMMENDATION

It is recommended that

- a) the trees, as suggested in this report, be planted in the order of priority as listed; and
- b) the installation of a single 20 mm water connection, 25mm polythene pipe and spray jets be installed to the trees planted at each location with the exception of Esplanade to King streets, where water is available and easily accessed; and
- c) the bundling and raising of lower hydro wires at the two locations listed be undertaken within two years of the trees being planted, if required.



NORTHERN
MIDLANDS
COUNCIL

Cressy

Main Street – Tree Planting Report



*Prepared by: Wayne Chellis
November 2017*

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1 INTRODUCTION & BACKGROUND

A Council report was presented to the Council Meeting on 23 January 2017, at which time it was the decision of Council to engage a suitably qualified person to undertake a survey and provide a report on future tree plantings in the Main Streets of Northern Midlands townships.

The author, who has been responsible for the planning and planting of street trees for a number of years, was appointed to undertake this project. Mr Leon Lange of Lange Design, Landscape Architects, has also been engaged to work with the author to achieve the best outcomes.

The report criteria included identification of existing infrastructure and services which may restrict the future planting of trees and available space to plant additional trees in accordance with the tree planting strategy.

Cressy Main Street has been selected as the first priority, in regard to providing a report due to it being the most difficult street to plant trees in and the reasons will be addressed in this report.

2 TREE PLANTING STRATEGY, TREE SELECTION AND SERVICES

A tree planting strategy was identified in the 23 January 2017 report to Council.

Trees are considered to be a valued part of our streetscape, adding value to properties as well as breaking up the line of the built environment, helping it blend with the surrounding landscape.

There is not a perfect or ideal street tree; however, the writer has selected the most suitable tree to be planted in each location.

There has been a change in attitude since the 1970's where Council Officers selected trees that were guaranteed to grow once planted in the ground, this often resulted in problems developing at a later day and, on occasion, in litigation due to problems with buildings and Council's infrastructure.

A number of factors have to be taken into consideration when planting trees in the Northern Midlands, including the following:

2.1 TREE GRATES & GUARDS

In 2010, under the direction of Council officers, designs and castings were constructed for the planting of street trees in sealed road verges and footpaths, prior to that time Tasmanian Councils sourced their tree grates and guards from mainland Australia.

The concrete surrounds have been designed to fit on the top of a cast in-situ concrete root barrier which is installed to increase the visual amenity, protect the trees from vehicle damage and support the tree guard, with steel formwork fabricated to bolt onto the concrete surround to hold the tree guard in place.

The concrete surrounds are predominately used in sealed parking areas and wide grass verges mowed with Council's ride-on mower.

Grates are installed within the footpath e.g. Longford CBD, in areas of increased pedestrian usage.

2.2 WATERING OF TREES IN THE CBD

New trees planted are watered by hand at least once per week in peak summer period for the first three years and the time period lengthens as the trees become established.

2.3 MAINTENANCE

Trees are an asset that requires regular and ongoing maintenance and with an enormous amount of work involved in the maintenance which is necessary for the health of the trees and safety of the public. It is therefore crucial that the right tree is chosen in relation to its location to minimise the amount of labour required.

Large trees need to be pruned every two years at a cost of in excess of \$1,000 per tree. Pruning consists of selective crown work, deadwood removal and lower branches need to be pruned to allow pedestrian access, cars to park and provide an uninterrupted sight line.

In accordance with tree planting guidelines Council's insurers require root barriers to be installed to ensure root growth does not cause damage (tripping points) in footpaths which may result in a future public liability claim.

The purpose of installing root barriers is to direct the roots downwards instead of outwards.

Unfortunately, this directs the roots into the clay which sometimes prevents growth if the barriers are installed too deep and may even cause the tree to die as the trees become established.

Street trees e.g. Dutch Elm trees (at Ross), which were previously planted under power lines require hard pruning which is necessary on a regular basis. On these old pollards, decayed sections develop and promote new growth, both of foliage and roots. Growth of the roots often results in damage to Council's infrastructure, including footpaths, kerb & gutter and roadways, as well as neighbouring property damage.

2.4 CLEARANCE ZONES

In addition to the three-metre clearance zones, trees planted in narrow nature strips need to be clear stemmed up to a height of 1.8 metres to provide adequate site distance for property owners to access the road from their driveways.

2.4.1 TAS NETWORKS

On one side of the street in most Northern Midlands Towns four uninsulated high-voltage wires are located at a height of approximately seven to eight metres, an additional four uninsulated low-voltage wires are located on a wide crossbar at a height of 5 metres or lower and separate single uninsulated street light service lines are also present.

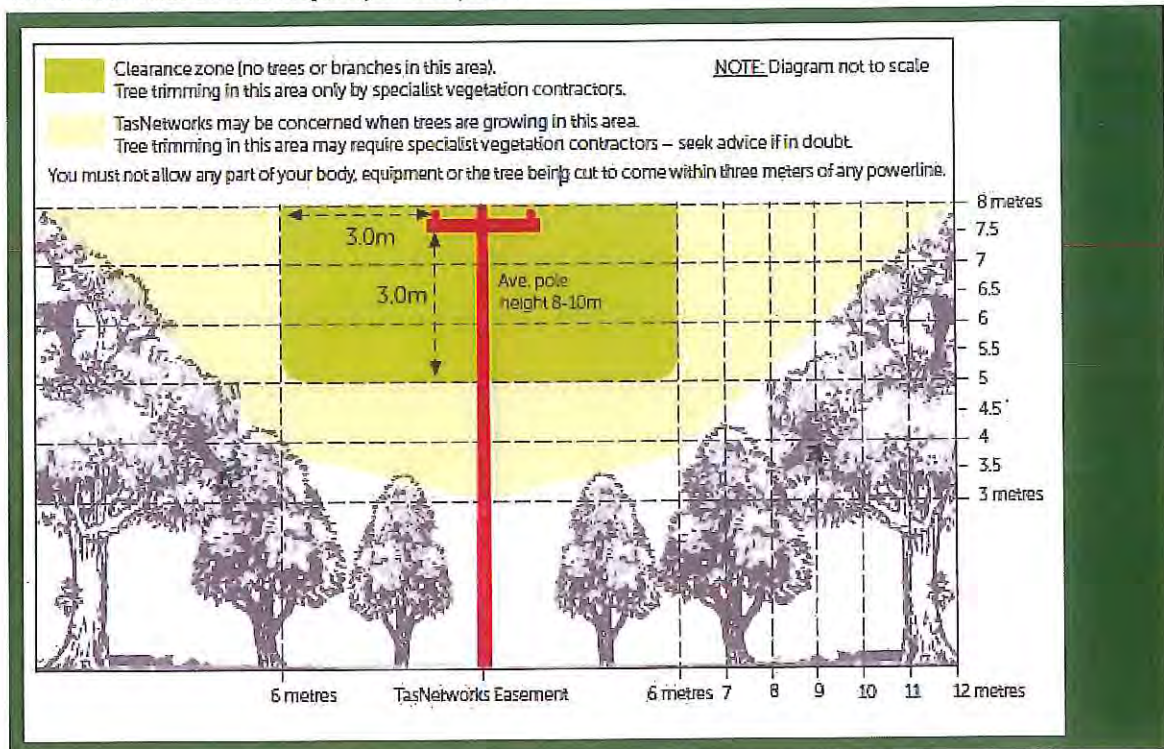
Bundling Cables

It should be noted that in many situations where uninsulated (bare wires) exist, bundled cables may need to be installed in the future at Council's cost.

Tas Networks will replace the four lower low voltage cables with an insulated bundled cable and relocated to a height of approximately seven metres in which case a one metre clearance is required; however, it should be noted that a three-metre clearance is still required from the high-voltage wires installed at a height of eight to ten metres.

Without bundling the cables prior to planting of trees or having a plan to bundle the cables within say two years, trees should not be planted under low-voltage wires unless there is a plan in place to maintain the trees to a satisfactory height.

The following illustration of clearance zones is provided on Tas Networks' website, unfortunately the diagram provided is not to scale and does not accurately reflect the height and number of wires that exist on the majority of the poles.



2.4.2 UNDERGROUND SERVICES

Underground power has only been installed in the Main Street of Ross and in new subdivisions; however, the following is noted in this regard: underground power has a cable exclusion zone, being one-metre either side, plus an additional one metre hazard zone.

Water, sewer, stormwater and Telstra services are also located in these narrow nature strips.

If guidelines and recommended distances from services are adhered to it is almost impossible to plant trees in many of the narrower nature strips (including new subdivisions) which are often not of sufficient width.

2.5 ENVIRONMENTAL CONDITIONS

In addition to factors such as maintenance and clearance zones, trees planted in the Northern Midlands area are subject to the following identified environmental conditions.

- Ground conditions become compacted preventing water flowing to the roots.
- Generally, particularly to the south of the municipal area, weather conditions in the Midlands can be extreme ranging from below zero degrees in winter to 35 degrees in summer. During the summer period low levels of rainfall occurs across the Northern Midlands and trees that do not have a watering system suffer and sometimes die. Council's workforce hand water trees that are planted in main streets for two to three years after planting.

- Trees need to be non-toxic, non-allergenic and should not have fruit that may be hazardous to persons accessing infrastructure.

3 TREE PLANTINGS

3.1 EARLY AND EXISTING TREE PLANTINGS

Large Plane trees were removed from the verge of Cressy Main Street in 1981. Replacement of those trees was carried out by the Cressy Tree Planting Committee in 1984, 1985 and 1986.

During which time, approximately 14 different Genus and Species of trees which would grow in this climate were planted the entire length of the street.

3.2 NUMBER OF TREES REMAINING

According to Council's tree plans and records 56 street trees planted in the mid-1980's still remain planted in the street.

3.3 SUITABILITY OF EXISTING TREES

Unfortunately, very few of these trees are considered to be ideal street trees to be planted in narrow spaces where a narrow form of upright tree is recommended.

3.4 CONDITION OF EXISTING TREES

Many existing trees are in poor condition as a result of being cut back periodically by property owners who consider that the trees restrict site distance on exiting driveways.

Council has cut-back trees following receipt of complaints and some overhanging the kerb have been hit by trucks parking on the verge.

In addition, the space available, planting methods and dry summer periods have taken their toll on many of the existing 30 year old trees.

3.5 TREE REMOVALS

Pittosporum Eugenioides trees which are generally planted in hedge rows were removed by Council from the eastern verge immediately north of Macquarie Street to improve site distance restrictions.

Trees have been removed following tripping and potential insurance claims from residents after roots lifted the asphalt footpath.

Blackwood and Wattle trees which were in poor condition and hanging over the footpath were removed from the verge near the Cressy High School tennis courts after they damaged the footpaths.

Several Crab apple trees were removed by Council from the western side of the Cressy main street after being severely cut back by the property owners to improve the site distance and provide space to park.

4 SURVEY OF SERVICES (CRESSY)

4.1 LOCATION

During the installation of services, no consideration was given to ensuring the services were installed parallel to or at a set distance from the boundaries or kerb and gutter, therefore the narrow space available between the footpath and kerb is further limited by services.

When services were first installed, Telstra and other providers often proceeded with the easiest, less-costly option being instalment of services in adhoc manner on both sides of the street, without giving due consideration to the planting of trees and future service requirements.

4.2 RESTRICTIONS

Hydro wires and poles are installed above and within the narrow space available on the western side of the street at various heights above 5 metres. The power wires at that height restrict the planting of some of the more suitable trees available for planting in narrow spaces, with narrow formed trees generally growing to a height of between 6 to 12 metres.

4.3 TREE PRUNING IN THE VICINITY OF HYDRO WIRES

Legislation allows for service providers such as Aurora and Telstra; as well as the Department of State Growth to undertake maintenance/pruning of trees which are considered a threat to their infrastructure. Unfortunately, their employees are not trained to prune the trees to the standard required by Council.

5 ALIGNMENT OF FUTURE TREE PLANTINGS

5.1 CONSIDERATION TO TREE PLANTING IN PARKING AREA (ROAD VERGE)

In the first instance, consideration was given to the planting of trees similar to those in Wellington Street Longford (between Union and Archer Street) in the parking areas; however, the road and parking area width has been determined to be too narrow, with water and stormwater mains located in some sections of the street parking areas. In addition, existing trees are planted between the kerb and footpath.

5.2 AVAILABLE SPACE TO PLANT TREES

The available area between the footpath and kerb is approximately 1.2 metres in width. Telstra cables have been installed in this corridor for most of the length of the main street, and water mains have also been installed in some sections.

Most trees will therefore need to be planted on an alignment of 600mm from the kerb and gutter.



6 FUTURE TREE PLANTING DETAILS

6.1 TYPE OF TREE

Due to the close proximity to the footpath and parking area, tree selection will be confined to a designer standard grown with a clear stem up to a height of approximately 2.3 metres.

This height will allow for pedestrians to use the footpath and light vehicles to park on the verge; however, will restrict heavy vehicles and large trucks from parking in locations directly where these trees are planted.

6.2 PROPOSED GENUS & SPECIES OF TREE TO BE CONSIDERED

Three tree genus and species that are considered to be suitable are *Evergreen Standard Magnolia Exmouth Grandiflora*, *Prunus Oakville Crimson Spire* and standard *Malus loensis* (Crab Apple); however, these trees would need to be pruned to a height to allow cars to park close to the kerb.



6.3 AVAILABILITY OF TREES

It is unlikely that Standard Evergreen *Magnolia Exmouth* or Standard *Malus loensis* trees will be readily available, therefore they will need to be grown by a specialist tree nursery.

In the event they are not available *Prunus Oakville Crimson Spire* is the most suitable tree to be planted in a narrow space as it only grows two metres wide in ten years

6.4 NUMBER AND LOCATION OF TREES PROPOSED TO BE PLANTED

It is proposed that Council consult with approximately 18 property owners in the main street of Cressy with a view to planting one tree at the frontage of properties, as follows:

- 2, 4, 71, 77, 80, 82, 83, 84, ,86, 90, north of 101, 105 ,122, 126, 128, 129, 132 and 134.

Council will need to water the trees as it is unlikely that any of the property owners would agree to watering them.

Given the narrow space and difficulty in sourcing and maintaining these proposed trees it is recommend that trees not be planted at the frontage if the property owner objects. Council should also consider replacing a number of the existing trees once the above trees are established.

7 TRAFFIC: HEAVY PLANT & MACHINERY

7.1 CHANGE IN FARMING OPERATIONS

Due to the downturn in the wool industry, local farmers with large acreage have had to diversify their operations to include cropping. Irrigation schemes, including dams were constructed and the introduction of pivot irrigators played a large role in change-over from sheep farming to cropping.



Plant on Cressy Road south of Brumbys Creek

After flexible guide posts had been run over & destroyed

Plant turning into Cressy main street from Saundridge Road

Plant turning into Cressy main street from Saundridge Road

7.2 REASON FOR LARGE PLANT & MACHINERY USAGE

Large plant and machinery, many of which are owned by contractors, is required to plant and harvest the large acreage of crops on all sides of the Cressy township. Contractors generally drive this large machinery from one property to another during the preparation, planting and harvesting crops.

7.2.1 DELIVERY USING HEAVY VEHICLES

Mini-B-Doubles and larger trucks are used to transport fertiliser and seed to grow crops, as well as harvested produce.

Cressy has seen a substantial increase in the transit of large plant and machinery through the township since trees were planted in the mid-1980's. It is therefore imperative that trees should not be planted in a manner that would reduce the safety of road users.

8 RISK ISSUES

Risk issues identified include:

- Trees planted on verges which are too narrow to allow for the safe use of footpaths and overhang the road pavement.
- Trees which hinder line of sight of road users and residents exiting their driveways.
- Trees dying when they are young due to insufficient water and space.
- Parking issues created by inappropriate plantings.
- Destruction of assets.

9 COMMUNITY CONSULTATION

9.1 REQUESTS FROM COMMITTEES

From time to time, Local District Committees and communities request that Council consider the planting of street trees. Consideration is given to these requests with trees being planted as deemed appropriate. A number of factors are taken into account when considering such requests, which include verge width, presence of underground / overhead services. Once a location and tree type is identified as being appropriate, the owners of neighbouring properties are consulted.

9.2 STRATEGIES USED FOR CONSULTATION

Letters are sent to those property owners who may be affected, with the following strategies having been used more recently:

- Where there is a wide verge (e.g. Perth Main Street northern entrance), property owners are advised that Council will be planting trees at the frontage of the property and Council will water and maintain the trees.
- New subdivisions (e.g. Perth and East Cambock Lane) were advised that Council were considering planting trees which would be maintained by Council, on the proviso that property owners agree to water them:
 - Perth: approximately 80% of the property owners agreed, trees were planted and they were watered by the property owners.

- o East Cambock Lane: many property owners did not water the trees as had been agreed and they had to be hand watered from a tanker during the summer period by Council employees, at some considerable cost.

9.3 STRATEGY SUGGESTED FOR CONSULTATION WITH CRESSY PROPERTY OWNERS

Due to the narrow space and concerns with previous tree planting, trees should not be planted unless the property owners agree.

In general residents in the Northern Midlands take responsibility for the maintenance of the **nature** strip at the frontage of their property and should therefore be given consideration in relation to the future maintenance expectations. Experience has shown that trees planted at the frontage of properties where the owners do not support the planting is unsuccessful.

10 LOCATION & COST

The cost of purchasing the standard trees, fabricating tree guards and planting is estimated to be in excess of \$2,000 per tree.

Priority	Location	Inclusions	Cost
1	Northern end to Jetson Court. Plant one tree at property frontages 2 and 4.	includes tree guards	\$4,000
2	King Street to Church Street – plant one tree at property frontages 71, 77, 80, 82, 83, 84, 86 and 90.	includes tree guards	\$16,000
3	Saundridge Road to Stock Route - plant one tree at property frontages 122, 126, 128, 129, 132 and 134.	includes tree guards	\$12,000
		TOTAL COST	\$32,000

11 COMMENTS/CONCLUSION

Where root barriers are required to prevent damage to council's infrastructure, Council generally plants trees with a width allowance of 900mm to 1200 mm. However, in this instance, the width of the holes will be limited by Telstra and other services.

In addition to these restrictions, it is likely that the roots will be located in reactive clay.

Council should be aware planting conditions are not ideal and some of the trees may not survive in this environment.

RECOMMENDATION

It is recommended that

- a) Council consult with the property owners in close proximity to the locations Council is considering planting trees, prior to planting; and
- b) following satisfactory consultation, trees be planted in the order of priority as listed in Item 10.



**NORTHERN
MIDLANDS
COUNCIL**

Evandale

Main Street – Tree Planting Report



*Prepared by: Wayne Chellis
January 2018*

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Unfortunately, this directs the roots into the clay which sometimes prevents growth if the barriers are installed too deep and may even cause the tree to die as the trees become established.

Street trees e.g. Dutch Elm trees (at Ross), which were previously planted under power lines require hard pruning which is necessary on a regular basis. On these old pollards, decayed sections develop and promote new growth, both of foliage and roots. Growth of the roots often results in damage to Council's infrastructure, including footpaths, kerb & gutter and roadways, as well as neighbouring property damage.

2.4 CLEARANCE ZONES

In addition to the three-metre clearance zones, trees planted in narrow nature strips need to be clear stemmed up to a height of 1.8 metres to provide adequate site distance for property owners to access the road from their driveways.

2.4.1 TAS NETWORKS

On one side of the street in most Northern Midlands Towns four uninsulated high-voltage wires are located at a height of approximately seven to eight metres, an additional four uninsulated low-voltage wires are located on a wide crossbar at a height of 5 metres or lower and separate single uninsulated street light service lines are also present.

Bundling Cables

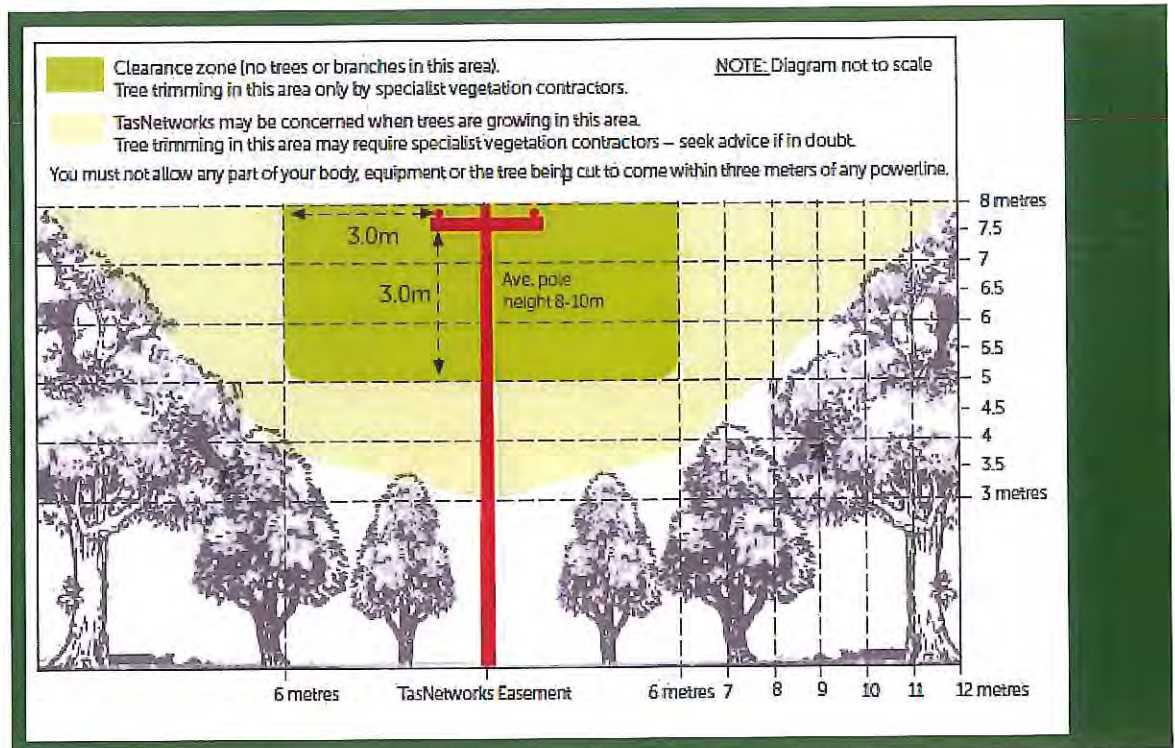
It should be noted that in many situations where uninsulated (bare wires) exist, bundled cables may need to be installed in the future at Council's cost.

Tas Networks will replace the four lower low voltage cables with an insulated bundled cable and relocated to a height of approximately seven metres in which case a one metre clearance

is required; however, it should be noted that a three-metre clearance is still required from the high-voltage wires installed at a height of eight to ten metres.

Without bundling the cables prior to planting of trees or having a plan to bundle the cables within say two years, trees should not be planted under low-voltage wires unless there is a plan in place to maintain the trees to a satisfactory height.

The following illustration of clearance zones is provided on Tas Networks' website, unfortunately the diagram provided is not to scale and does not accurately reflect the height and number of wires that exist on the majority of the poles.



2.4.2 UNDERGROUND SERVICES

Underground power has only been installed in the Main Street of Ross and in new subdivisions; however, the following is noted in this regard: underground power has a cable exclusion zone, being one-metre either side, plus an additional one metre hazard zone.

Water, sewer, stormwater and Telstra services are also located in these narrow nature strips.

If guidelines and recommended distances from services are adhered to it is almost impossible to plant trees in many of the narrower nature strips (including new subdivisions) which are often not of sufficient width.

2.5 ENVIRONMENTAL CONDITIONS

In addition to factors such as maintenance and clearance zones, trees planted in the Northern Midlands area are subject to the following identified environmental conditions.

- Ground conditions become compacted preventing water flowing to the roots.
- Generally, particularly to the south of the municipal area, weather conditions in the Midlands can be extreme ranging from below zero degrees in winter to 35 degrees in summer. During the summer period low levels of rainfall occurs across the Northern

Midlands and trees that do not have a watering system suffer and sometimes die. Council's workforce hand water trees that are planted in main streets for two to three years after planting.

- Trees need to be non-toxic, non-allergenic and should not have fruit that may be hazardous to persons accessing infrastructure.

3 AESTHETICS

3.1 HIGH STREET

Evandale today is described as a National Trust classified Georgian village popular with tourists for its unspoiled heritage buildings notably:

- St Andrews Church;
- Uniting Church with its classical bell tower and Doric columns; and
- Blenheim (1832) in High Street.

3.2 RUSSELL STREET

Russell Street's older buildings consists of The Royal Oak (1840) and adjoining stables (now Evandale Antiques), Clarendon Arms Hotel (1847) and Fallgrove (1826). In addition, Solomon House (1836) and the Saddler's Shop (1840) are located at the intersection of Russell and High Streets.

4 HIGH STREET EXISTING TREE PLANTING & INFRASTRUCTURE

4.1 HIGH STREET: CAMBOCK LANE WEST TO RUSSELL STREET (EASTERN SIDE VERGE)



Blue Stone Entrance & Formal Hedges

Exposed Aggregate Footpath & Timber Fence

Several old styles fences are constructed of timber, in particular a longer fence and entrance is constructed with split bluestone rock pillars. Trees overhang the exposed aggregate footpath recently constructed by Council.

Shale is placed in the narrow verge between the kerb and footpath and low power wires overhang the only space available to plant trees.

4.2 HIGH STREET: CAMBOCK LANE WEST TO RUSSELL STREET (WESTERN SIDE VERGE)



Formal Hedge & Ironstone Footpath

Elm Trees Overhanging Footpath

On the western side, the wider footpath is constructed of ironstone gravel from Cambock Lane West to Russell Street. Elm trees, various other tree species and formal hedges overhang the ironstone footpath

5 RUSSELL STREET WIDTH ,EXISTING TREE PLANTINGS& INFRASTRUCTURE

5.1 RUSSELL STREET WIDTH

Russell Street is a narrow street which becomes very congested during busy periods, in particular on Sundays during the hours of operation of the Evandale Market. Footpaths are narrow, with the exception of one section between High Street to Scone Street.

5.2 RUSSELL STREET HIGH STREET TO SCONE STREET (NORTHERN SIDE)

Eight Mop Top Robinias are planted within the Russell Street footpath on the northern side, between High Street and Scone Street.



Photo From Western End Of Section

Photo From Eastern End Of Section

5.3 *RUSSELL STREET HIGH STREET TO SCONE STREET (SOUTHERN SIDE)*

Eight Mop Top Robinias are planted within the Russell Street footpath on the southern side, between High Street and Scone Street.

5.4 *SCONE STREET TO MACQUARIE STREET (NORTHERN SIDE)*

Trees have not been planted in this section of footpath as it is considered to be too narrow to accommodate the planting of trees.



5.5 *SCONE STREET TO MACQUARIE STREET (SOUTHERN SIDE)*

Three Mop Top Robinias are planted on the western end of this section of street; however, the footpath narrows further to the east and does not provide sufficient width for the planting of trees.



Trees Planted On Western End

Footpath Narrows Further To East

5.6 MACQUARIE STREET TO HUXTABLES LANE (NORTHERN SIDE)

Four *Quercus Robur* (Oak) trees and one *Pinus Radiata* (Monterey Pine) tree are planted in the small picnic reserve between the short section of Rodgers Lane and Russell Street.

The *Pinus Radiata* (Monterey Pine) tree was planted in memory of the ANZAC's in approximately 1920. It appears that the Oak trees may have been planted within the same time period.

All trees are listed in the National Trust's *Register of Significant Trees of Tasmania*.



5.7 *MACQUARIE STREET TO HUXTABLES LANE (ROAD & FOOTPATHS)*

Tree planting is not recommended in this section of the street as it becomes very congested with traffic and pedestrians when the Evandale Market is operating.



RECOMMENDATION

It is recommended that

- a) Due to the aesthetics and limited space available additional tree planting should not be undertaken in High Street and Russell Street, Evandale;
- and
- b) That Council prioritises the planting of additional trees in Pioneer Park (as per future plan).