

23. LIQUIDAMBAR TREE REPLACEMENT – MIRFIELD PLACE

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Corporate Plan Output: Street Tree Maintenance and Felling Citywide	

The purpose of this report is to obtain approval to remove eight Liquidambar trees in Mirfield Place and replace them with a more suitable species. The matter has been referred to the Fendalton Waimairi Community Board for information and comment prior to coming before the City Services Committee for a decision. The Boards recommendation is included within the report.

BACKGROUND

In June 1999 the Parks Unit received a letter signed by a number of residents in Mirfield Place requesting the Council to remove the existing Liquidambar trees and replace them with a more suitable species. These particular trees were originally planted in 1969 and are now causing significant damage to the pavements and kerb and channel which is the main concern of the residents.

The tree roots are lifting the channel and disrupting the flow of water along the channel causing ponding. The ponding has seasonal variations ranging from 1 or 2 days to periods of a week or more, depending on the time of year. The Council has carried out a number of repairs to the channel and pavement areas over the years, however the trees are now at a point where it is not possible to carry out further repairs without cutting and removing major roots.

The Parks Unit is unwilling to carry out this work as it will significantly weaken the anchorage and stability of the trees, leaving them susceptible to falling over in high winds. Furthermore, major root disturbance such as this is likely to result in the death of the tree in any case.

TREE SUITABILITY

These particular trees have out grown the available berm area due mainly to the fact they were planted only 500 mm behind the kerb, and mature trees can have a girth in excess of 1 metre in diameter. In streets such as Mirfield Place where the distance between the property boundary and the kerb is relatively narrow (3.5 metres), they are no longer considered to be a suitable street tree. The current practice for this species is that they are now only planted in larger grass berms, road reserves or multi-laned median divided arterial roads where there are fewer restrictions to their height and root growth

RESIDENTS VIEWS

The Parks Unit wrote to all Mirfield Place residents after receiving the initial letter from residents suggesting that the majority of residents wanted the trees replaced because of the problems they were causing.(See copy of original letter)

The Parks Unit received a response from all 13 Mirfield Place residents indicating their preferred option, with the following results.

- 10 Favoured replacing the existing trees with a more suitable species
- 3 Favoured retaining the existing trees.

FENDALTON/WAIMAIRI COMMUNITY BOARD'S VIEW

The matter was originally considered at the 23 November 1999 meeting of the board but was deferred until the February 2000 meeting while staff were asked to come up with various options to retain the trees along with the estimated costs for the various options. The Board also visited the site as part of an inspection bus tour of its area on 9 December 1999.

The additional information as requested was reported to the February meeting of the Fendalton Waimairi Community Board. A wide ranging discussion followed which included an opportunity for residents in attendance both supporting and opposing removal of the trees to comment from their perspective.

Following consideration of the report the Board decided to recommend **Option 1 (Remove the trees and replace with a more suitable species)** to the City Services Committee as their preferred course of action.
(See following section for a list of all options)

OPTIONS

The following options are not in any order of priority.

Option 1.

Remove the existing trees and replace with a more suitable species

With this option the Parks Unit would use semi-mature trees as replacements similar to the Poynder Avenue situation so as to lessen the impact on the streetscape.

Cost	
Felling and stump removal	2,800
8 trees @ \$350 per tree	2,800
Planting and aftercare	<u>100</u>
	<u>\$5,700</u>

Option 2.

Kerb buildouts and reducing cul-de-sac radius.

This option will allow the trees to grow for potentially another twenty-five years before the roots would start to lift the kerb and channel again. To keep the costs as low as possible the kerb would only be diverted as required around each tree to be retained, and a cut-off channel would be constructed to avoid bubble up sumps, as shown on the appended plans. Parking would need to be stopped at each kerb buildout reducing parking opportunities in the street from eighteen to nine. It does not however address the effect the tree roots will have on the underground services (e.g. the 100mm asbestos watermain).

The estimated cost of this work is \$83,000 if all the existing trees are retained.

Option 3.

Narrowing full length of carriageway and reducing cul-de-sac radius

As in the previous option this will also allow the trees to grow for potentially another twenty five years before the roots would start to lift the kerb and channel again. It also offers the opportunity for all residents in Mirfield Place to have a liquidamber tree outside their property by reducing the width of the carriageway to five metres for the full length of the cul-de-sac and banning the parking on one side of the road. The number of parking opportunities in the street would be reduced from eighteen to eight. It is believed that this option would involve full reconstruction of the whole of the Mirfield Place footpaths, carriageway, and kerb and channel as shown on the appended plan.

The estimated cost of this work is \$95,000.

Option 4

Retaining the existing trees in their present location and repairing channel as required.

There are a number of implications, which limit the practicality of continuing with this option for anything other than a very short period of time.

As the existing trees grow the buttress, size of roots and their proximity to the surface increases. The channel has already been repaired/replaced on at least two previous occasions in a number of locations and more maintenance will be required in the near future.

In some cases it will not be possible to replace the channel on its existing line and grade without cutting major roots. The difficulty is that as the trees grow the roots end up being higher than the bottom of the channel. In time, this problem will apply to all the remaining trees given their current position.

Interfering and severing major roots on larger trees to restrict their root zones is not a good arboricultural practice. There are some limited situations where we undertake this practice but generally the Parks Unit is not supportive of this type of treatment for two reasons.

1. Significant root loss or root damage is one of the most common causes of death in large trees (They cannot be guaranteed to survive this treatment).
2. This type of treatment significantly reduces the structural stability of the tree leaving them susceptible to falling over or being blown over in high winds and is a major concern in terms of the tree's safety.

In taking option 4 it is important to note that at some point in the near future it will be impossible to carry out further repairs and retain the tree. The time to arrive at this point will vary between trees, some are very close to that point now.

The end result is that ponding will occur at various points along the channel where repairs are unable to be done. The ponding will have seasonal variations from one or two days in summer to possibly weeks in winter depending on the frequency of rainfall. Ponding has already been raised by some residents as an issue.

COST

It is difficult to give a definitive cost to this option as it will vary depending on the length of channel to be replaced. On average where trees are displacing the channel it usually requires about six metres of new kerb per tree (3 metres either side of the tree). There are also repairs required to the footpaths where the roots are pushing up the pavements.

City Streets have the following negotiated rates with Canroad for repairs to kerbs and pavements.

Kerb and channel	- \$90 per lineal metre
Pavements and tree roots	- \$38 per m ²

The cost for this option does not take damage to private property into account. If these trees are to remain then the Council will also be faced with claims from residents for damage to driveways and fences. The cost for these repairs has not been identified.

REPLACEMENT SPECIES

A further report recommending a suitable replacement species was also considered at the February meeting of the Fendalton Waimairi Community Board. The board **decided** that subject to the Council's decision on the future of the trees that *Styrax japonica* (Snowball Tree) was the preferred replacement species and that semi-mature ready trees be used to reduce the impact on the streetscape. The Board also requested the Parks Unit undertake further consultation with the residents regarding the replacement species.

CONCLUSION

Given the cost and practicality of the various options the Parks and City Streets Unit preferred option is to replace the existing trees with a more suitable species. Using semi-mature replacement trees will reduce the impact on the street. It will also be possible to install one or two additional trees to replace ones that have been removed in the past.

This is also the preferred option for the majority of the residents in Mirfield Place.

- Recommendation:**
1. That Option 1 to remove the existing trees and replace them with a more suitable species be approved.
 2. That semi-mature ready trees be used to reduce the impact on the streetscape.
 3. That the Parks Unit undertake further consultation with the residents as to the preferred replacement species.
 4. That all Mirfield Place residents be advised of the Council's decision.

Chairman's Recommendation: For discussion.