Appendix 5: Transportation Assessment by Traffic Design Group Ltd

Traffic Design Group

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10998
10 February 2011

Anna Fenton
Parks and Gardens
Hutt City Council
PO Box 31 912
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Dear Anna

Kelso Grove Sports Ground Residential Plan Change
Transportation Assessment

Following on from your instruction to proceed, we have now completed an assessment of the potential transportation related effects arising from the proposed rezoning of part of the Kelso Grove sports ground in Kelson. In doing so we have considered the activity which is likely to occur under the proposed residential zoning and also developed an indicative design of the street network for the likely development scenario. We report as follows.

1. Introduction

Hutt City Council has identified that the Kelso Grove sports ground in Kelson is under utilised, to the extent that the general recreational area zoning is no longer appropriate for the whole site. On this basis Council has obtained the Minister of Conservation's consent to revoke the reserve status from part of the sports ground and now seeks to rezone that area to General Residential, enabling it to be subdivided and developed. This assessment has been commissioned to evaluate the potential transportation related effects arising from the proposed rezoning to assist in the determination of the appropriateness of the proposed District Plan Change.

The approach undertaken in the assessment is to consider the level of development that can be anticipated as a permitted or control activity, and which activities would require further assessment as discretionary or non-complying activities. The next step in the assessment is then to evaluate the effects of permitted or controlled activities.

2. Site Location

Figure 1 shows the area to be rezoned (the site), which comprises 1.6 hectares of land on and around the Kelso Grove sports ground. This includes the bush clad slopes on the northern and eastern sides of the sports ground and part of the flat land on the northern side of the sports ground. This land is classified as recreation reserve but is generally underutilised partly due to the poor condition of the sports surface and partly due to the relatively isolated location. The proposal to enable urban development will bring surveillance and safety to the remaining area of recreation reserve. It is proposed that the remaining area of recreation reserve be developed as a Village Green. Increased utilisation is anticipated as a result, although it is noted that the well maintained Kelson School field will remain as an attractive facility immediately to the west of the site.

3. Transport Environment

Figure 2 shows the location of the site in the context of the surrounding transport network. The site is accessed from the end of Kelso Grove, which is a 230m long cul-de-sac providing access to 24 houses. Direct access is available from Kelso Grove to the Kelson School and through there to the Kelson Kindergarten. Kelso Grove is defined in the District Plan as an Access Road.

Kelso Grove connects to Major Drive which is a Local Distributor Road. Major Drive forms part of a bus route providing services every 30 minutes throughout the day, taking passengers to Naenae, Waterloo Station, central Lower Hutt and Petone. The nearest stop to the site is just west of Waipounamu Drive, a walk of approximately 450m.

A traffic count undertaken by Council in August 2009 recorded a daily traffic flow on Major Drive of some 4,000 vehicles per day (vpd). A peak hour flow of 450 vehicles per hour (vph) was recorded between 5pm and 6pm.

Major Drive is relatively steep and climbs up from the valley floor with gradients of up to 10%. This presents a long, challenging climb for cyclists to an extent that there is relatively little uptake of cycling as a commuting option for residents of Kelson.

In a similar vein, walking destinations from the site are relatively few, with the Kelson shops having a relatively limited offer and being a 1.3km walk away. That aside, the site is almost immediately adjacent to the school and kindergarten and will have the Village Green immediately adjacent to it.

On the whole, the topography of Kelson is such that the primary travel modes are bus and private car, with the one notable exception of trips to and from the primary school and kindergarten.

4. Potential Development

Following the District Plan Change it will be necessary to obtain a subdivision consent which will be a controlled activity. Development plans prepared by Tonkin and Taylor suggest that such a subdivision is likely to involve up to around 24 lots.

The permitted activity provisions of the District Plan will then enable each lot to accommodate any of the following:

- a single dwelling;
- a home occupation with no more than two additional people working there;
- a childcare facility for up to five children; or
- a residential facility for eight to ten people.

All other more intensive traffic generating activities will require a separate assessment of transportation effects as restricted discretionary activities (comprehensive residential developments, healthcare services and accessory buildings on legal road) or discretionary activities. Even more significant developments such as retail would be a non-complying activity again requiring a separate assessment.

Based on development patterns elsewhere in Kelson, there is no reason to expect that a significant number of the anticipated lots will be used for home occupations, childcare or

residential facilities. On this basis this assessment has focused on the likely development involving 24 private dwellings. It is however noted in this regard the District Plan requires on-site parking at a rate which generally makes most activities self-sufficient, including two parking spaces for dwellings, an additional space for home occupations, one space per staff member for childcare facilities and four spaces for a residential facility. On this basis it is considered that on-street parking will generally only need to accommodate guests and visitors to the Village Green.

5. Sustainable Transport

As described above, the location of the site is such that the development will generally be reliant on public transport and private car. It does however fit into an existing residential environment and is expected to enable increased utilisation of the local sports ground. This may be to an extent that it reduces need for other residents of Kelson to travel further afield.

The walk distance of 450m to the Major Drive bus stop is in general accord with the best practice guideline of a 400m walk, such that bus travel will be popular for residents, particularly for commuting. It is noted in this regard that the bus services are timed to connect with the trains to Wellington.

On the whole, this infill location is appropriately served by public transport and can be considered preferable to other greenfields sites for residential development.

6. Traffic Effects

Given the location of the site, each dwelling is expected to generate around 8vpd. Using this rate, the anticipated development of 24 lots will result in the addition of 192vpd to Kelso Grove. By applying that same rate to the existing 24 houses on Kelso Grove, the total future traffic flow on Kelso Grove is estimated at just under 400vpd, of which 40vph can be expected during the peak hour. Increased use of the sports ground may add to this figure such that a conservative peak hour flow of 60vph has been adopted.

The industry adopted Austroads guide to Traffic Management Part 6: Intersections, Interchanges and Crossings provides a guideline for assessing the capacity of the intersection of Kelso Grove and Major Drive. Table 2.4 of the Austroads Guide provides that intersections carrying fewer than 500vph on a major road and 200vph on a minor road will have sufficient capacity without need for detailed traffic modelling. Given that Major Drive carries a peak hour flow of 450vph and that the Kelso Grove is forecast to carry only around 60vph, it can be concluded that the existing intersection will have sufficient capacity to accommodate the foreseeable traffic resulting from the proposed plan change.

Kelso Grove itself has a reasonably generous width of 9m which is sufficient for cars to park on either side while maintaining slow speed two-way movement. Occasional movement by large vehicles would however require an oncoming vehicle to pull to the side in a location where there are no parked cars (such as at a driveway) and give way. Such a scenario is however considered to be relatively rare, with the residential uses giving very little demand for on-street parking. The one exception is activity from the Discovery Christian Centre which is expected to generate on-street parking demand on Sundays.

On the whole, a residential street like Kelso Grove is generally considered capable of accommodating around 2,000vpd as recorded in the New Zealand Standard for Land Development NZS4404:2010. On this basis the projected daily traffic flow resulting from the proposed plan change will remain well within the available capacity of the street.

Safety patterns have also been investigated by searching the NZTA crash analysis system. A search covering the ten year period from 2000 to 2009 has not found any reported crashes on Kelso Grove at the intersection with Major Drive. This, in combination with a site inspection that did not find any safety issues, leads to the conclusion that the anticipated traffic can be accommodated safely.

7. Anticipated Design Standards

While design standards will be assessed at the subdivision stage, it is considered helpful for evaluation of the proposed plan change to develop and provide some indication of appropriate street design standards.

Section 14A(i)2.1 of the District Plan sets out expectations for street design which, for an Access Road serving less than 100 dwellings, include:

- a 7.2, carriageway;
- a maximum gradient of 13%;
- footpaths on both sides; and
- a 2.0m kerbside berm and a 0.9m boundary berm on each side of the road.

These sum to an expected road reserve width of around 15.5m.

However it is also relevant to consider the provisions of NZS4404 which represents the most up to date best practice for developing walkable and liveable streets that remove the dominance of the motor vehicle in environments that should more appropriately be focused on pedestrians. By considering the guidance in NZS4404, an initial recommendation for an indicative design has been prepared as shown in Figure 3.

Three categories are shown, including the extension of Kelso Grove, the lane running along the northern edge (Road A) and the two short access lanes toward the south of the site (Roads B and C).

The Kelso Grove extension is recommended to include a 5.7m wide carriageway with provision to reach a steep grade of 16% as currently exists. It is recommended that a 1.5m wide footpath be provided on the eastern side to provide access to the houses there and also facilitate turning into driveways if vehicle access is considered appropriate from the steep driveway. Given the steep, sloping nature of the site it is not considered strictly necessary for a berm on the eastern side and the need for a berm on the western side could be discussed in relation to services. Parking bays should be provided on the western side at a rate of one for every one or two lots. It would be advantageous to encourage the front doors of the houses to be located at the upper level and accessed from the Kelso Grove extension.

The flat section along the base of the northern slope (Road A) is recommended to comprise a 5.7m wide carriageway with a 1.5m footpath on the southern side. A hammerhead would be required at the eastern end to facilitate turning.

The smaller lanes (Roads B and C) should also include a 5.7m carriageway but without need for a separate footpath. Pedestrians would generally be accommodated on the carriageway in a shared environment. It is anticipated that parking for the Village Green could be incorporated by extending angle parking into the recreation reserve land as

needed. Other than that, intermittent on-street parking can be readily accommodated within the 5.7m carriageway for the low flows anticipated on roads A, B and C.

While the exact details of road layout and design will be provided at the subdivision consent stage, these guidelines are considered helpful to understanding how a subdivision might look and to gauge the associated effects.

8. Conclusion

Subject to appropriate design, it is concluded that this site at the end of Kelso Grove represents a good location for residential zoning. This assessment has found that the transportation related effects of the anticipated level of residential development will be no more than minor with the forecast levels of traffic being readily accommodated by the surrounding road network. The provisions of the District Plan provide that any more intensive land uses will be separately assessed if and when a consent application is made for them. It can therefore be concluded that the effects relating to transportation are appropriately addressed by the proposed plan change and can therefore be supported.

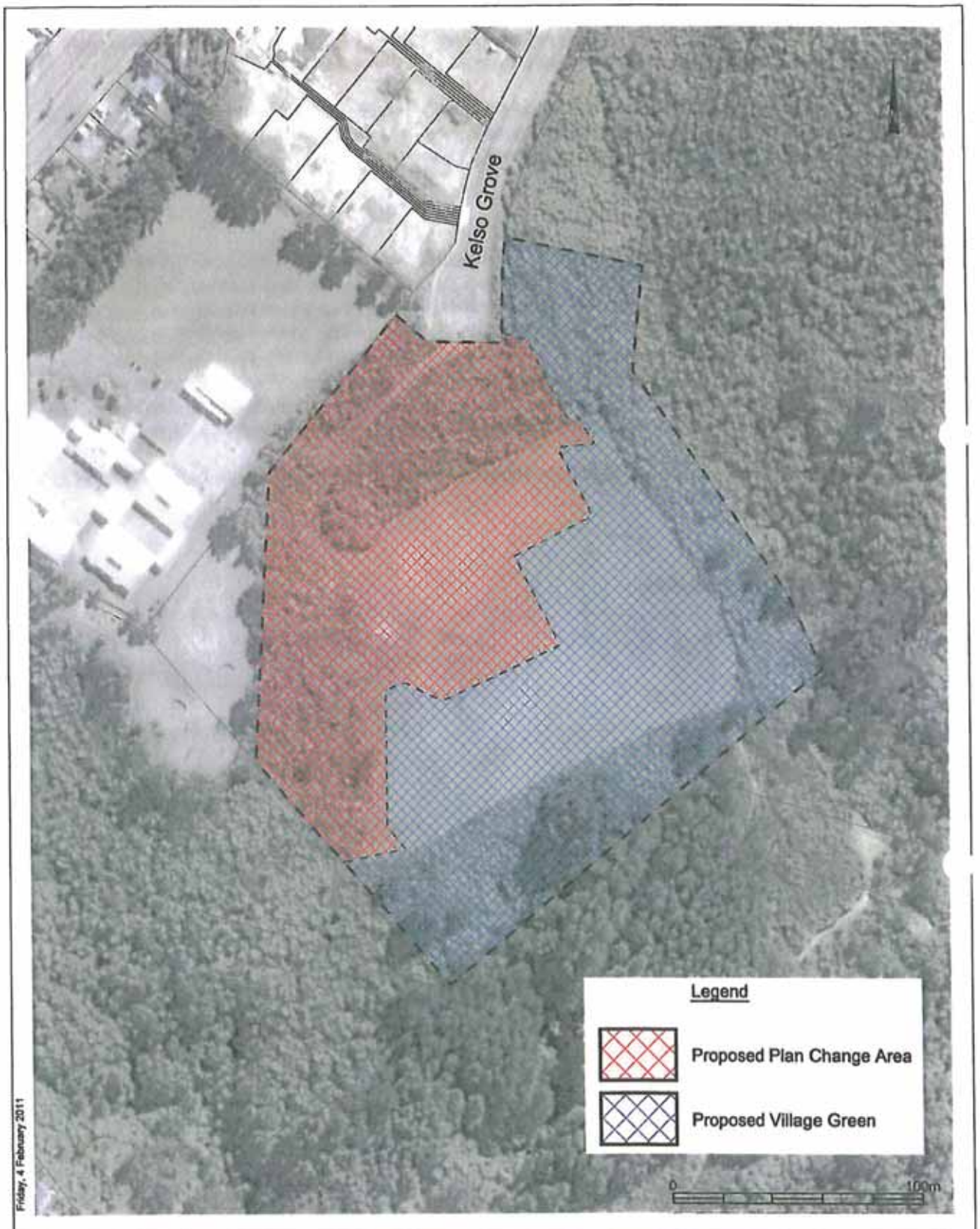
This report details the findings of our assessment and we would be glad to discuss any aspects as you may wish.

Yours faithfully
Traffic Design Group Ltd

Chris Morahan
Transportation Engineer

Richard Galloway
Principal Transportation Engineer

enc: Figures 1-3



Friday, 4 February 2011

Kelso Grove Sportsground Residential Plan Change

Proposed Area To Be Rezoned

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1

SCALE: 1:2,000

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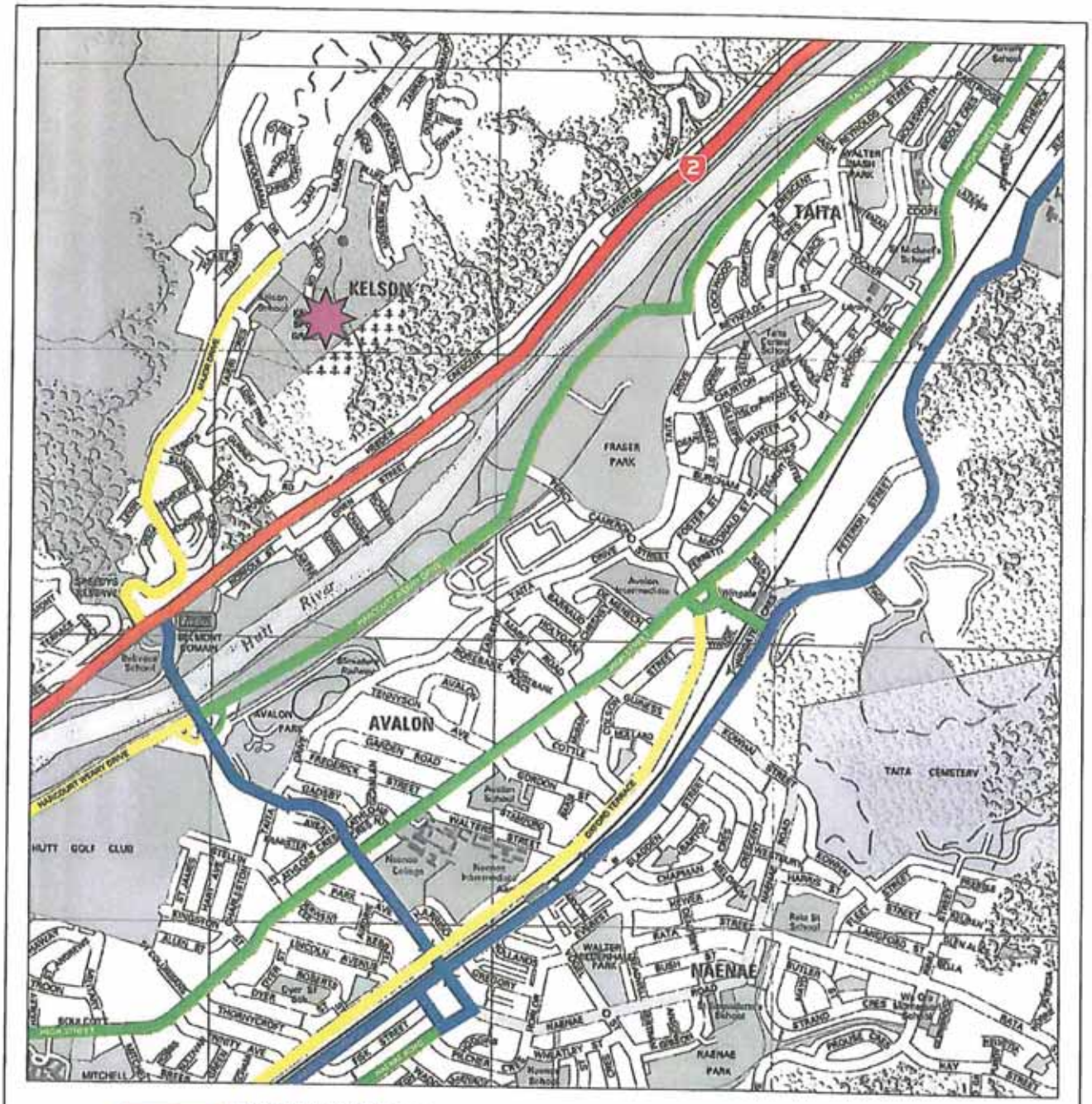

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Location In The Road Network

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2

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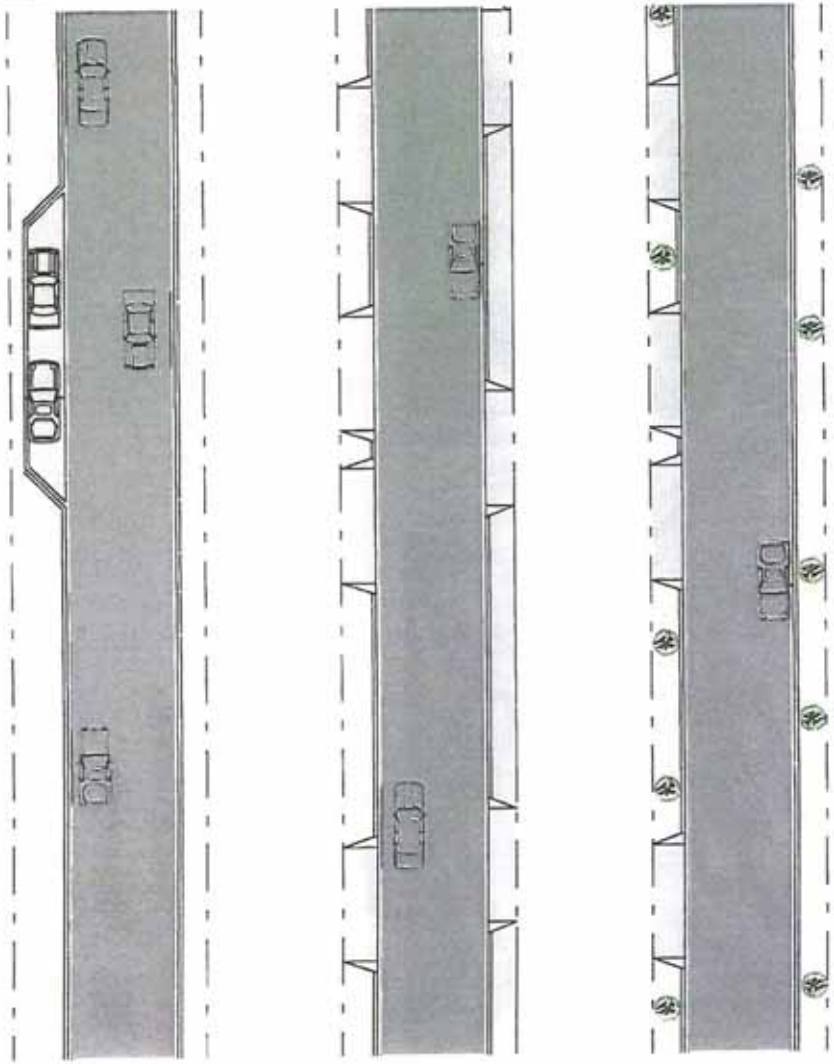

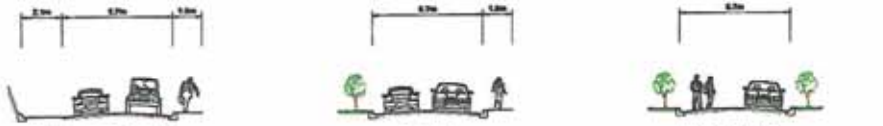

REVISION	DATE	DESCRIPTION
A	04/02/2011	Cross Sections, Roads, aerial and boundary lines.

Kelson Grove Sportsground Residential Plan Change

Indicative street Designs

DRAWN: Quentin O'Shaughnessy
DATE: 04.02.2011
SCALE: 1:250 @ A3
DWG NO:10998W1A

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