TOWN PLANNING
AND URBAN DESIGN

PLANNING PROPOSAL

Amendment to Orange Local Environmental Plan 2011 to permit service station and take away food and drink premises

Farrell Road and Telopea Way, Orange

Lot 11 DP 1180604

for Garfield Road Holdings Pty Ltd

April 2013

PROJECT NO: 213.049

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DOCUMENT REVIEW SHEET

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EXECUTIVE SUMMARY

Garfield Road Holdings Pty Ltd is submitting this Planning Proposal to Orange City Council seeking an amendment to Orange Local Environmental Plan 2011 (Orange LEP) to permit a service station and take away food and drink premises on the corner of Farrell Road and Telopea Way, North Orange. It has been prepared by The Planning Group NSW Pty Ltd (TPG) in accordance with the requirements of Section 55 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and associated guidelines prepared by the Department of Planning and Infrastructure (DoPI).

Amending Schedule 1 of the Orange LEP 2011 to permit additional uses on the subject site will accommodate the need and demand for service station and food catering floor space in North Orange. The future service station and take away food and drink premises will be controlled in size by limiting the maximum floor space on the sites ensuring that the premises will not be of a size or nature that could accommodate large volumes of customers, large trucks, buses or coaches but will rather complement and support the existing supermarket as well as the co-location of affordable food catering facilities to the growing population of North Orange.

Overall, the site and surrounding road network is able to cater for the proposed uses as well as the cumulative impacts of other new developments in the locality and will not have impacts on retailers in the Orange CBD.

The planning proposal has strategic planning merit and Council is requested to proceed to forward this planning proposal to the Minister or his delegate for a gateway determination under section 56 of the EP&A Act.

1. INTRODUCTION

This Planning Proposal is submitted to Orange City Council seeking an amendment to Orange Local Environmental Plan 2011 (Orange LEP) to permit development of a service station and take away food and drink premises on part of Lot 11 DP 1180604 at the corner of Farrell Road and Telopea Way, Orange. It has been prepared by TPG NSW on behalf of the proponent Garfield Road Holdings Pty Ltd.

This Planning Proposal has been prepared in accordance with the requirements of Section 55 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and the associated guidelines '*A guide to preparing local environmental plans'* and '*A guide to preparing planning proposals*' prepared by the Department of Planning and Infrastructure dated October 2012 which require the following matters to be addressed:

- Objectives or intended outcomes of the proposal;
- Explanation of provisions to be in the amendment to Orange LEP 2011;
- Justification for the proposal in terms of;
  - Need for the planning proposal;
  - Relationship to strategic planning framework;
  - Environmental, social and economic impact;
  - State and Commonwealth interests;
- Relevant maps showing the subject site, current land use zone and the proposed alternative zone; and
- Community consultation proposed to be undertaken.

Council is requested to forward this planning proposal to the Minister or his delegate for a gateway determination under Section 56 of the EP&A Act.

2. THE SITE

2.1 LOCATION AND CONTEXT

The site is located on the corner of Farrell Road and Telopea Way in North Orange adjacent to the local shopping centre and new residential estates that characterise the locality. The location of the site is shown in **Figure 1**.

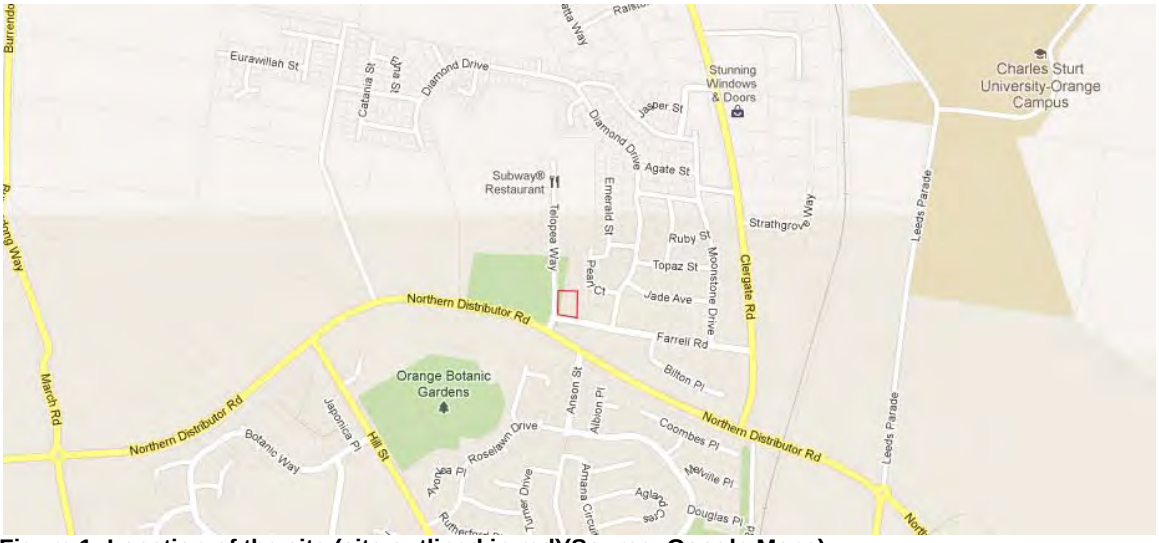


Figure 1: Location of the site (site outlined in red)(Source: Google Maps)

2.2 SITE DESCRIPTION

The site is described as part of Lot 11 DP 1180604. It has an area of 6,037m^2 with dimensions of approximately 83m along Telopea Way and 65m along Farrell Road with a splay of 2.99m at the intersection of Telopea Way and Farrell Road. The site and surrounds are shown in **Figure 2**.

Figure 2: Site and surrounding area (site outlined in red)(Source: SIX Viewer)

2.3 EXISTING DEVELOPMENT

The site has previously been used as a farm for agricultural grazing, has recently been cleared of native trees and is currently vacant.

The site is relatively flat with a gentle slope from north to south. There are no creeks or distinct drainage lines running through the site. The vegetation on the site is limited to a mix of native and exotic pastures with pine trees and shrubs around the site boundary perimeter as shown in the following photographs.

Photograph 1: Site as viewed from the corner of Telopea Way and Farrell Road

Photograph 2: Site frontage (south) along Telopea Way

Photograph 3: Corner of Telopea Way and Farrell Road with North Orange Shopping Centre in the background

2.4 SURROUNDING LAND USE AND DEVELOPMENT

To the south of the site is vacant land zoned SP3 Tourist under Orange LEP 2011. A development application for McDonald's fast-food outlet is currently being assessed by Orange City Council on Council owned land.

Photograph 4: Land to the south of the site zoned SP3 Tourist

A B2 Local Centre Zone comprising of a Woolworths shopping centre with supermarket and specialty shops, and the Waratah Sports Club are located to the west and northwest.

Photograph 5: Adjoining North Orange Shopping Centre

Development to the north and east of the site comprises of new low density housing estates in North Orange zoned R1 General Residential under Orange LEP 2011 which are currently occupied or in various stages of development.

Photograph 6: Recently completed residential dwellings located to the north of the subject site (Diamond Drive)

2.5 CURRENT ZONING UNDER ORANGE LEP 2011

The site is currently zoned *R1 General Residential* under the Orange LEP 2011 as shown in **Figure 3**.

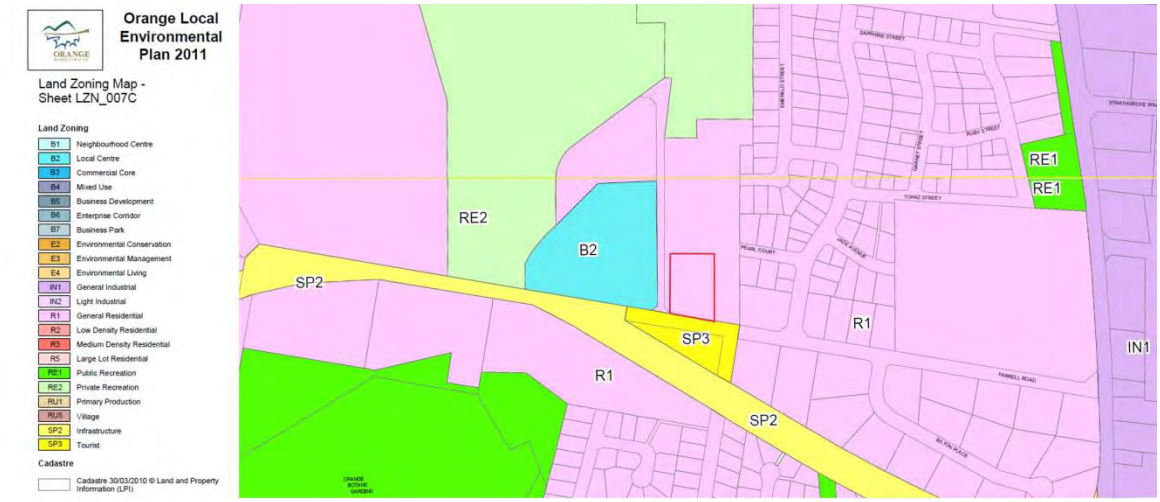


Figure 3: Current Land Zoning Map of the site under Orange LEP 2011 (site circled in red)

The objectives of the R1 Zone and permissible and prohibited uses in it are as follows:

Zone R1 General Residential

1 Objectives of zone

- *To provide for the housing needs of the community.*
- *To provide for a variety of housing types and densities.*
- *To enable other land uses that provide facilities or services to meet the day to day needs of residents.*
- *To ensure development is ordered in such a way as to maximise public transport patronage and encourage walking and cycling in close proximity to settlement.*
- *To ensure that development along the Southern Link Road has an alternative access.*

2 Permitted without consent

Environmental protection works; Home-based child care; Home occupations

3 Permitted with consent

Attached dwellings; Boarding houses; Building identification signs; Business identification signs; Camping grounds; Caravan parks; Child care centres; Community facilities; Dwelling houses; Electricity generating works; Environmental facilities; Exhibition homes; Exhibition villages; Group homes; Home businesses; Home industries; Hostels; Information and education facilities; Kiosks; Multi dwelling housing; Neighbourhood shops; Places of public worship; Recreation areas; Recreation facilities (indoor); Recreation facilities (outdoor); Residential accommodation; Residential flat buildings; Respite day care centres; Roads; Semi-detached dwellings; Seniors housing; Shop top housing; Tourist and visitor accommodation; Veterinary hospitals; Water supply systems

4 Prohibited

Farm stay accommodation; Rural workers' dwellings; Any other development not specified in item 2 or 3

Service stations and take away food and drink premises are prohibited in the current R1 Zone on the site.

2.6 NORTH ORANGE BACKGROUND

A summary of strategic studies and development in the North Orange region is summarised below:

- Orange LEP 2000 zoned the subject site and most of the surrounding land Urban *Residential 2(a)*, the adjacent (McDonald's) site and some of the adjoining land *Urban Transition 2(d)* and a section of *land 5(b) Distributor Road* to accommodate the Northern Distributor Road (NDR).
- Sustainable Settlement Strategy and Local Environmental Study prepared in 2004 identified the subject site as being located within New Urban Residential Area: Medium/Short/Long Term area (LU-1) with consideration given for a new centre in the area.
- An Environmental Impact Statement (EIS) was prepared to assess a proposal to construct and operate the NDR from Escort Way to Leeds Parade in 2004. This section of the NDR was completed in 2006.
- A Business Centre Strategy Review Study was prepared in 2005. The Study found that by 2011 a full-line supermarket (of 2,500m^2) would be viable in North Orange and when North Orange is fully developed the area could support two full-line supermarkets or increasing the existing supermarket to at least 3,500m^2.
- In 2010 Amendment No 8 to the Orange LEP 2000 was gazetted which included a Schedule 1 Additional Uses clause to permit supermarkets and specialty stores at 9 Telopea Way, Orange (Part Lot 70 DP 851029).
- Approval for a 3,200m^2 Woolworths Supermarket and 1,500m^2 of specialty shops was approved in 2010 at 9 Telopea Way, Orange.
- The Orange LEP 2011, gazetted in 2012, zoned the subject site and surrounding land *R1 General Residential*, the adjacent (McDonald's) site *SP3 Tourist Zone* and the adjoining supermarket site *B2 Local Centre*.
- Numerous residential subdivisions have been submitted and extensive infrastructure provided in recent years.
- There have been two recent approvals for childcare centres including:
    - An extension to the existing childcare centre at 52-56 Farrell Rd was approved on 21 Dec 2012, total 2000sqm.
    - An approval for a new 3000sqm childcare centre at Lot 15 on Telopea Way was approved on 21 January 2013.
- A development application was lodged in 2012 for a 411m^2 McDonald's restaurant on the triangular piece of land located on the corner of The Northern Distributor Road, Telopea Way and Farrell Road. The proposed development includes a drive-through facility seating for 98 patrons parking for 43 cars including parking for two coaches. The application is currently being assessed.

Council has completed a number of studies on a range of uses and the potential traffic impacts associate with the NDR for North Orange. This has include analysis of, intersections and road network issues in originating with the NDR EIS's, and has consistently approved development, both residential and retail, in North Orange. Where is its considered that the impacts of all the permissible uses were taken into account including health consulting rooms, childcare centres, convenience stores, educational establishments, hotels, recreation facilities, veterinary clinics, restaurant, business premises, takeaway food shops, milk bars, sandwich shops, delicatessens and shops that were permitted in the *Urban Residential 2(a)* zone under Orange LEP 2000.

3. THE PROPOSAL

3.1 OBJECTIVES OR INTENDED OUTCOMES

The objectives and intended outcomes of the planning proposal are:

- to cater for the demand for a service station and takeaway food and drink premises due to the growing population in North Orange;
- to meet community demand for take away food and drink premises in North Orange;
- to complement the adjacent local shopping centre;
- to demonstrate that there are no significant impacts on the existing road network;
- to ensure that the type and scale of land uses permitted on the site would not have an unreasonable impact on the hierarchy of existing business zones in Orange; and
- to amend the Orange LEP 2011 to permit the development of the site for the purposes of a service station and take away food and drink premises by inclusion of a site specific enabling clause under Schedule 1 of the Orange LEP 2011.

The planning proposal is considered to have a net community benefit in the following respects:

- it will provide employment during construction and operation of the proposed uses;
- it will reduce travel distances for residents of North Orange for service station and take away food as currently there are no there such sites in the locality;
- it facilitates clustering of retail activities and multi-purpose trips at the one location at the local centre;
- it will not set an undesirable precedent, particularly as it is a ‘one-off’ type of land use for the locality and that there is no other suitable land for the type of land uses proposed;
- it will not have a significant impact on the supply of land with potential for residential development around Orange or on house prices and affordability due to the recently rezoned residential land in North Orange and in South Orange, adjacent to the Orange Hospital;
- there are no public infrastructure costs on the community; and
- there are no significant environmental costs of the proposal as the land has previously been approved/subdivided for urban uses.

3.2 EXPLANATION OF PROVISIONS

The planning proposal is for an amendment to the Orange LEP 2011 as described below.

Land to which plan applies

The LEP amendment is to apply to part of Lot 11 DP 1180604, Farrell Road, Orange as shown in **Figure 2** of this report.

Zoning and Permitted Uses

It is proposed to amend Schedule 1 – Additional Permitted Uses in Orange LEP 2011 to permit the additional uses of a service station and take away food and drink premises on the site.

There is currently no minimum floor space ratio (FSR) or height standards on the site and, as outlined below, it is proposed to restrict the FSR to 0.2:1 for the site, as per the adjoining B2 zone of the Woolworths Supermarket site.

Floorspace Ratio

It is proposed to amend the Floor Space Ratio Map in Orange LEP 2011 to impose a maximum floor space ratio control of 0.2:1 in order to limit the area of commercial floor space allowed on the site to the amount proposed in the service station and take away food and drink premises as shown in the FSR maps in Section 5.

4. JUSTIFICATION

4.1 NEED FOR THE PLANNING PROPOSAL

4.1.1 Is the planning proposal a result of any strategic study or report?

The planning proposal is a result of the strategic studies and plans for the residential expansion and urban development of North Orange, which has seen significant population growth and the introduction of a local shopping centre over recent years.

The strategic study that led to the urban expansion at North Orange is the Orange Sustainable Settlement Strategy and Local Environmental Study (2004) prepared for Council by Parsons Brinkerhoff which has been implemented in the urban zones in Orange LEP 2011. The strategic study that led to the local shopping centre adjacent to the site at North Orange is the Business Centre Strategy Review Study (2005) prepared for Council by Leyshon Consulting which is implemented in the current B2 Local Centre Zone in Orange LEP 2011.

The Business Centre Strategy Review Study found that the local shopping centre at North Orange, which has now been developed by Woolworths with a supermarket and speciality shops in the B2 Local Centre Zone adjacent to the site, is viable to support the urban development of residential estates in North Orange without generating excess traffic impacts and without threatening the role and viability of the commercial core of the city. Council resolved to adopt the Business Centre Strategy Review Study and also allow up to a further 200m^2 of non-retail floor space for commercial tenancies like a real estate agent, restaurants, medical practice and the like in the local centre at North Orange, and to review expansion of neighbourhood centres as development progresses in urban release areas.

This planning proposal is a result of the abovementioned strategic studies and plans for the expansion and urban development of North Orange, which appears to have exceeded the initial growth forecasts made in 2004/2005 due to unexpected increase in the demand for housing in North Orange as a result of the growth in the surrounding mining industry. In this regard, the planning proposal is consistent with serving the increasing community as well as complementing the local centre, Woolworth's shopping centre and potential McDonalds restaurant in North Orange established in the Orange Sustainable Settlement Strategy.

The demand for such services and the minimal impacts of such uses on the loss of trade to the Orange CBD are summarised in the Economic and Needs Assessment prepared by Location IQ in February 2013 (**Appendix B**):

There is clearly demand for further food catering and service station floorspace within the Orange LGA. Given the population growth within the North Orange area and the lack of facilities currently, it is logical that a proportion of this future demand is catered for within the North Orange area.

The North Orange market contains a large number of young, two parent working families, who are likely to be very time poor. It is important to provide this market with an adequate provision of convenience based retail facilities within close proximity to their homes. This should include service station(s) and food catering floorspace.

The location of the proposed site opposite the new developed North Orange Marketplace makes it the ideal site to accommodate this future demand. If the McDonalds restaurant is approved, the co-location of the KFC will add chose and variety for residents wishing to shop at affordable food catering facilities. The close location of the service station to a Woolworths supermarket will mean the store is likely to provide fuel vouchers, reducing the cost of a major weekly expense for local residents.

An examination of the Orange CBD post the opening of North Orange Marketplace indicates a vibrant centre. This would suggest the development of North Orange Marketplace has had limited impact on existing retail floorspace within the CBD. Additionally, the centre has not prevented further retail development within the Orange CBD, with The Summer Centre already under construction and Orange City Council planning a further 8,400 sq.m of floorspace on the Council car park site.

This would indicate the planned service station and takeaway food outlet at North Orange, which is likely to achieve sales of $2 million or only 5% - 6% of the sales estimated at North Orange Marketplace, will not have any discernible impact on retailers within the Orange CBD.

Additionally, given the extensive provision of floorspace provided within the Orange CBD and the convenience nature of the proposed development, the addition of a service station and takeaway food outlet at North Orange will in no way impact on the existing or future Orange retail hierarchy. The Orange CBD will continue to be the major non-food and higher order retail destination for North Orange residents.

4.1.2 Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

Site Options

The only other site at North Orange that is zoned to allow a service station and take away food and drink premises is the adjacent SP3 Zone on the opposite side of Farrell Road. The adjacent SP3 Zone is not of a sufficient size or suitable configuration to accommodate the proposed service station and take away food and drink premises.

However, there is an application currently being considered by Council for a McDonald's restaurant on this site. The proposed 411m^2 McDonald's restaurant includes a drive-

through facility on the site and seating for 98 persons with 43 parking spaces (including 2 coach spaces). Access to the site is proposed from Farrell Road at two locations with separate coach and car park access.

As previously outlined, the Economics and Needs Assessment clearly demonstrates a demand for further food catering and service station floor space within the Orange LGA and that given the population growth within the North Orange area, an obvious proportion of the demand is catered for within the North Orange Area.

In addition, market research/surveys undertaken by KFC in May and September 2012 **(Appendix C)** demonstrated that there is a demand for such services at North Orange. The market research surveys demonstrate that 51% (of 455 survey respondents) indicated that they would use a specific new take away food and drink premises at Telopea Way, North Orange.

The other potential sites in the northern half of Orange are the SP3 Zone, B6 Zone, IN1 Zone and IN2 Zones near the intersection of the Northern Distributor Road and Leeds Avenue in northeast Orange. These zones are suited to a future highway service centre on the northern distributor road, but are not considered as suitable to serve the new residential estates in North Orange due to the separation distance approximately 1km away on the opposite side of the rail line requiring access via the busy highway traffic on the northern distributor for a one-off trip.

The subject site is more suitable to serve the residents of North Orange as it is adjacent to the local shopping centre and the residential estates, and facilitates clustering of retail activities and multi-purpose trips.

There are no other more feasible sites in North Orange zoned under LEP 2011.

LEP Amendment

Amending Schedule 1 – Additional Permitted Uses in Orange LEP 2011 to permit the additional uses of a service station and take away food and drink premises on the site. This amendment is limited to the specific site and proposed uses without the broader implications associated with new zonings.

4.2 RELATIONSHIP TO STRATEGIC PLANNING FRAMEWORK

4.2.1 Is the planning proposal consistent with the objectives and actions contained within the applicable regional or sub-regional strategy (including the Sydney Metropolitan Strategy and exhibited draft strategies)?

There is no regional or subregional strategy applying to Orange City Council area.

4.2.2 Is the planning proposal consistent with the local council's Community Strategic Plan, or other local strategic plan?

The Orange Sustainable Settlement Strategy and Local Environmental Study (2004) is the most recent strategic plan for the Orange City Council area. The Strategy identified North Orange for urban development, and the planning proposal is consistent with it in catering for consumer demand from new residential estates.

The more detailed strategic planning for the local centre in North Orange was in the Business Centre Strategy Review Study (2005) which is addressed above in Section 4.1.1 of this planning proposal. The planning proposal for a service station and associated take away food and drink premises are uses that will complement the adjacent local shopping centre in North Orange, support the urban development of residential estates in North Orange, cater for the demand for such services and not threaten the role and viability of the commercial core of the Orange CBD.

The proposal is not inconsistent with the Business Centre Strategy Review Study and Orange Sustainable Settlement Strategy as it is for a different retail offering that has not been addressed in these planning documents, complements the adjacent local business centre zone and Woolworth's shopping centre, serves the residential estate in North Orange and the passing traffic on local main roads.

4.2.3 Is the planning proposal consistent with applicable state environmental planning policies?

The state environmental planning policies (SEPPs) that need to be considered are:

- State Environmental Planning Policy No 55—Remediation of Land.

There are no other state environmental planning policies (SEPPs) relevant to the planning proposal. State Environmental Planning Policy No 55—Remediation of Land Clause 6 of SEPP 55 states:

> ***6 Contamination and remediation to be considered in zoning or rezoning proposal***
>
> *(1) In preparing an environmental planning instrument, a planning authority is not to include in a particular zone (within the meaning of the instrument) any land specified in subclause (4) if the inclusion of the land in that zone would permit a change of use of the land, unless:*
>
> *(a) the planning authority has considered whether the land is contaminated, and*
>
> *(b) if the land is contaminated, the planning authority is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for all the purposes for which land in the zone concerned is permitted to be used, and*
>
> *(c) if the land requires remediation to be made suitable for any purpose for which land in that zone is permitted to be used, the planning authority is satisfied that the land will be so remediated before the land is used for that purpose.*

Following the subject site being zoned R1 General Residential under Orange LEP 2011 a Preliminary Contamination Assessment was undertaken in April 2011 to support an application for the subdivision of the site for residential and commercial purposes. The assessment concluded that no contamination was found and no further investigation necessary. The report can be found at **Appendix D**.

Council can be satisfied that the site is suitable for the proposed service station and take away food and drink premises for the same reason that it must be satisfied that the site is suitable for its current residential zoning and subdivision.

4.2.4 Is the planning proposal consistent with applicable Ministerial Directions (s.117 directions)?

The S.117 Ministerial directions that are relevant considerations for this planning proposal are:

- 3.1 Residential Zones;
- 6.3 Site Specific Provisions; and

The Schedule of Consistency with the S.117 Ministerial Directions and Schedule of Consistency with State Environmental Policies can be found at **Appendices E and F**.

S.117 Direction - 3.1 Residential Zones

S.117 Direction No.3.1 states the following:

> ***Objectives***
>
> *(1) The objectives of this direction are:*
>
> *(a) to encourage a variety and choice of housing types to provide for existing and future housing needs,*
>
> *(b) to make efficient use of existing infrastructure and services and ensure that new housing has appropriate access to infrastructure and services, and*
>
> *(c) to minimise the impact of residential development on the environment and resource lands.*
>
> ***Where this direction applies***
>
> *(2) This direction applies to all relevant planning authorities.*
>
> ***When this direction applies***
>
> *(3) This direction applies when a relevant planning authority prepares a planning proposal that will affect land within:*
>
> *(a) an existing or proposed residential zone (including the alteration of any existing residential zone boundary),*
>
> *(b) any other zone in which significant residential development is permitted or proposed to be permitted.*
>
> ***What a relevant planning authority must do if this direction applies***
>
> *(4) A planning proposal must include provisions that encourage the provision of housing that will:*
>
> *(a) broaden the choice of building types and locations available in the housing market, and*
>
> *(b) make more efficient use of existing infrastructure and services, and*

(c) reduce the consumption of land for housing and associated urban development on the urban fringe, and

(d) be of good design.

(5) A planning proposal must, in relation to land to which this direction applies:

(a) contain a requirement that residential development is not permitted until land is adequately serviced (or arrangements satisfactory to the council, or other appropriate authority, have been made to service it), and

(b) not contain provisions which will reduce the permissible residential density of land.

Consistency

(6) A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General) that the provisions of the planning proposal that are inconsistent are:

(a) justified by a strategy which:

(i) gives consideration to the objective of this direction, and

(ii) identifies the land which is the subject of the planning proposal (if the planning

proposal relates to a particular site or sites), and

(iii) is approved by the Director-General of the Department of Planning, or

(b) justified by a study prepared in support of the planning proposal which gives consideration to the objective of this direction, or

(c) in accordance with the relevant Regional Strategy or Sub-Regional Strategy prepared by the Department of Planning which gives consideration to the objective of this direction, or

(d) of minor significance.

The planning proposal affects land in an existing residential zone, and therefore the S.117 Direction No.3.1 applies. The proposal is not inconsistent with Clauses 4 and 6 of S.117 Direction 3.1 as:

- The proposal is to complement the adjacent local shopping centre that was established to serve the growing community of North Orange in accordance with Orange City Council's Business Centre Strategy Review Study and Sustainable Settlement Strategy; and
- The planning proposal to utilise 6,037m^2 of residential zone land for business use will not have a significant impact on the large supply of land with potential for residential development around Orange, housing choices, or efficiency in the use of infrastructure.

Section 117 Direction - 6.3 Site Specific Provisions

S.117 Direction No.6.3 states the following:

Objective

(1) The objective of this direction is to discourage unnecessarily restrictive site specific planning controls.

Where this direction applies

(2) This direction applies to all relevant planning authorities.

When this direction applies

(3) This direction applies when a relevant planning authority prepares a planning proposal that will allow a particular development to be carried out.

What a relevant planning authority must do if this direction applies

(4) A planning proposal that will amend another environmental planning instrument in order to allow a particular development proposal to be carried out must either:

(a) allow that land use to be carried out in the zone the land is situated on, or

(b) rezone the site to an existing zone already applying in the environmental planning instrument that allows that land use without imposing any development standards or requirements in addition to those already contained in that zone, or

(c) allow that land use on the relevant land without imposing any development standards or requirements in addition to those already contained in the principal environmental planning instrument being amended.

(5) A planning proposal must not contain or refer to drawings that show details of the development proposal.

Consistency

(6) A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General) that the provisions of the planning proposal that are inconsistent are of minor significance.

The planning proposal is to allow a particular development on the subject site, and is therefore subject to S.117 Direction No.6.3. The planning proposal is consistent with clause 4 of this S.117 Direction in the following respects:

- This proposal is to amend Schedule 1 of the Orange LEP to allow the proposed land use to be carried out in the current residential zone; and
- The planning proposal does not contain or refer to drawings showing details of the development proposal.

4.3 ENVIRONMENTAL, SOCIAL AND ECONOMIC IMPACT

4.3.1 Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

It is unlikely that the planning proposal will adversely affect critical habitat or threatened species, populations or ecological communities, or their habitats as the site and its surrounds have been cleared of native vegetation in the past and are zoned for urban development.

4.3.2 Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?

The site and locality have the environmental capacity and capability of supporting the proposed land uses without significant unreasonable environmental effects. The site and locality are not identified as having any significant environmental attributes,

constraints or hazards. The land is not identified as being significant in the natural landscape, is not steep or subject to landslip, has no vegetation of significant biodiversity value, and is not bushfire prone or flood prone, and is not located in the Orange Water Catchment area.

The proposed land uses of a service station and take away food and drink premises raise a number of environmental planning issues that will need to be addressed and managed in a future Development Application for detailed design and construction.

These environmental planning issues would include:

- Built form;
- Access, traffic and parking;
- Streetscape and landscaping;
- Interface with adjacent residential estate;
- Noise;
- Hazardous materials storage and fumes;
- Water management;
- Energy use;
- Security and crime prevention; and
- Construction impacts.

The site has capacity to accommodate the development of a service station and food and drink premises with appropriate management of these environmental planning issues at the Development Application stage.

The issues of built form, streetscape and landscaping, noise, water management, energy use, security and crime prevention and construction impacts are detailed design matters that will be resolved at the development application stage.

A detailed Traffic Report was undertaken by Colston Budd Hunt and Kafes (CBHK) Pty Ltd in March 2013 (**Appendix G**). The Traffic Report investigated the existing conditions and assed the transport implications of the proposed development as well as the cumulative impacts of the proposed McDonald's restaurant, recently approved childcare centres in North Orange and major events being held at the Waratahs Sport Facilities.

The report concludes:

- *on-site parking will be provided in accordance with Council's DCP 2004;*
- *access arrangements will be provided clear of adjacent intersection and in accordance with the Australian Standard;*

- *parking layout, internal circulation and service arrangements will be provided in accordance with the Australian Standards; and*
- *the existing road network can cater for the traffic generated by the proposed service station and fast food outlet.*

Although considered a matter for the detailed design stage, it is thought prudent at this stage to outline current hazardous material and vapour recovery methods that are compulsory for all new service stations.

State Environmental Planning Policy No. 33 – Potentially Hazardous and Offensive Development is a SEPP that must be addressed for all service stations

The aims and objectives of SEPP 33 state:

> ***2 Aims, objectives etc***
>
> *This Policy aims:*
>
> *(a) to amend the definitions of hazardous and offensive industries where used in environmental planning instruments, and*
>
> *(b) to render ineffective a provision of any environmental planning instrument that prohibits development for the purpose of a storage facility on the ground that the facility is hazardous or offensive if it is not a hazardous or offensive storage establishment as defined in this Policy, and*
>
> *(c) to require development consent for hazardous or offensive development proposed to be carried out in the Western Division, and*
>
> *(d) to ensure that in determining whether a development is a hazardous or offensive industry, any measures proposed to be employed to reduce the impact of the development are taken into account, and*
>
> *(e) to ensure that in considering any application to carry out potentially hazardous or offensive development, the consent authority has sufficient information to assess whether the development is hazardous or offensive and to impose conditions to reduce or minimise any adverse impact, and*
>
> *(f) to require the advertising of applications to carry out any such development.*

Furthermore, Clause 12 of the SEPP states:

> ***12 Preparation of preliminary hazard analysis***
>
> *A person who proposes to make a development application to carry out development for the purposes of a potentially hazardous industry must prepare (or cause to be prepared) a preliminary hazard analysis in accordance with the current circulars or guidelines published by the Department of Planning and submit the analysis with the development application*

Accordingly, a multi-Level Risk Assessment will be undertaken at the DA stage addressing all the relevant clauses of the SEPP as well *as AS/NZS 1596:2008 The Storage and Handling of LP Gas* which provides requirements and recommendations for the safe storage and handling of LP Gas and sets out requirements for design, construction, commissioning and operation of installations for the storage and handling of LP Gas. It is considered that the site can facilitate all the necessary statutory requirements and that options available that will ensure that there are no hazards to

surrounding residents and businesses as has been carried out in various locations around NSW.

In relation to fumes and vapours, a Stage 1 Vapour Recovery system will be incorporated. The fuel vapours are displaced from underground storage tanks when liquid fuel is delivered from a tanker. Stage 1 Vapour Recovery (VR1) equipment is designed to capture the vapour that has collected in the storage compartments of the tanker by means of a closed piping system. The vapours collected are transferred to a vapour recovery unit for recycling at the terminal; rather than being discharged into the atmosphere.

There is also the option for a Stage 2 Vapour Recovery System. The vapours are displaced from vehicle fuel tanks when liquid fuel is filled from the dispenser. Stage 2 Vapour Recovery (VR2) equipment is designed to capture the displaced vapour and return it to the underground fuel storage tank. The vapour is drawn through the vapour return line by a vacuum pump. VR2 systems are intended to limit the emissions of fuel vapour when vehicles refuel by recovering at least 85% of the displaced vapour.

The location, extend and level of vapour recovery will be determined at the DA stage.

4.3.3 How has the planning proposal adequately addressed any social and economic effects?

The planning proposal will have the following positive social and economic benefits:

- meet consumer demand for a service station and food and drink premises in the growing community of North Orange;
- provide greater consumer choice in Orange for fuel and takeaway food;
- complement the adjacent local shopping centre;
- provide employment during construction and operation of the proposed uses; and
- reduce travel distances for residents of North Orange for the proposed uses and facilitate multi-purpose trips.

As previously outlined in Section 4.1.1, the demand for such services and the minimal impacts of such uses on the loss of trade to the Orange CBD are summarised in the Economic and Needs Assessment. In summary the report concludes that there is significant population growth in North Orange, there is a demand for further food catering and service station floor space and that there will be no impacts on the existing or future Orange retail hierarchy.

The social effects associated with security of the premises and crime prevention in environmental design will need to be addressed in a future Development Application for the detailed design and construction of the proposed uses.

4.4 STATE AND COMMONWEALTH INTERESTS

4.4.1 Is there adequate public infrastructure for the planning proposal?

Public infrastructure is available in the locality and adjacent to the site for connection as part of the urban expansion and development in North Orange.

4.4.2 What are the views of State and Commonwealth public authorities consulted in accordance with the gateway determination?

No State or Commonwealth authorities have been consulted by the proponent. It is anticipated that the Department of Planning and Orange City Council will conduct consultations with relevant public authorities in accordance with the provisions of the EP&A Act and Regulation.

5. MAPPING

5.1 FLOORSPACE RATIO

Proposed amendments to the Land Zoning Maps involve an amendment to the Floor Space Ratio Map in Orange LEP 2011 to impose a maximum floor space ratio control of 0.2:1 as shown in **Figure 4.**

With a site area of 6,037m^2 and FSR of 0.2:1, the resultant available floor area is 1,207.4m^2. This FSR has will be imposed in order to limit the area of commercial floor space allowed on the site to the amount proposed in the service station and take away food and drink premises and allow for the required parking and circulation space.

Figure 4: Proposed amendment to floor space ratio map

6. COMMUNITY CONSULTATION

6.1 STATUTORY REQUIREMENTS

It is anticipated that upon Gateway Determination formal consultation with the community and relevant Government agencies in accordance with the provisions of the EP&A Act and Regulation will be undertaken.

6.2 CONSULTATION AND COMMENT FROM ORANGE CITY COUNCIL

A meeting was held with Council early 2012 in relation to the potential for rezoning the subject site to permit a range of commercial uses including restaurants, retail shops and a service station. Council provided a written response dated 27 June 2012 outlining the permitted and prohibited uses under the R1 Zone and options for amending the LEP to cater for uses that are not permitted.

Council's letter also highlighted that, at the time, it was observing if there was any redistribution of economic activity arising from the creation of the first out-of-centre commercial precinct at the North Orange Woolworths complex and the planned out-of-centre commercial zone on land near the base hospital. Any proposal to rezone the subject land would need to consider the pattern of economic activity and potential impacts.

A Planning Proposal to rezone the subject land was submitted in November 2013. Council provided a written response, dated 19 December 2012, to the proposal outlining several issues including traffic, trading patterns and economics activity. The planning proposal was subsequently withdrawn and specialist studies carried out in response to Council's concerns.

6.3 OTHER CONSULTATION

An article was written in the Central Western Daily Newspaper in January 2013 regarding the proposed rezoning of the site. The article, titled '*Take it away: council slams KFC's North Orange bid*', references and summaries the traffic and economic issues raised in Council's letter to the proponent, dated 19 December 2013.

This article has raised the awareness of the Orange community to the proposal to rezone the land for take away food and a service station use. This community awareness is highlighted in the 'comments' section on the Central Western Daily website, where members of the community have the opportunity to comment on the article. It is noted that a majority of the 20+ comments are in favour of the proposed rezoning.

7. CONCLUSION

The planning proposal is considered to have strategic planning merit and a net community benefit in the following respects:

- it is consistent with Council's Orange Sustainable Settlement Strategy (2004) for the urban expansion and development of North Orange which has generated a demand for the proposed service station and take away food and drink premises adjacent to the local shopping centre and new residential estates in this locality;
- it is consistent with Council's Business Centre Strategy Review Study (2005) in that it complements the local shopping centre at North Orange and does not seek to compete with the Orange CBD;
- it is consistent with relevant State environmental planning policies and S.117 Ministerial Directions;
- it meets consumer demand for a service station and take away food and drink premises in the growing community of North Orange;
- it complements the adjacent local shopping centre;
- it will reduce travel distances for residents of North Orange for service station and take away food;
- it facilitates clustering of retail activities and multi-purpose trips at the one location at the local centre;
- it will have minimal impacts on the local road network;
- it will provide employment during construction and operation of the proposed uses;
- transport and utility infrastructure are available in the locality, and there will be no significant public infrastructure costs on the community;
- there are no significant environmental attributes, constraints or hazards on the land or locality that would preclude the proposal;
- it will not have a significant impact on the supply of land with potential for residential development around Orange or on house prices and affordability; and
- there are no other more feasible or suitably located and configured sites with sufficient area to achieve the objectives of the proposal.

Given the above strategic planning merit, Council is requested to proceed to forward this planning proposal to the Minister or his delegate for a gateway determination under section 56 of the EP&A Act.

APPENDIX A

DA 458/2011(1) Approved Subdivision Plans

ORANGE CITY COUNCIL
DEVELOPMENT CONSENT
THESE ARE THE PLANS SUBMITTED TO AND APPROVED BY COUNCIL SUBJECT TO THE CONDITIONS SET OUT IN THE DECISION
OF: 23 March 20 12
SIGNED:
DATE: 28 March 20 12

IMPORTANT NOTES

- THIS PLAN HAS BEEN PREPARED FOR DEVELOPMENT APPLICATION PURPOSES ONLY
- ALL DIMENSIONS AND AREAS SHOWN ARE SUBJECT TO SURVEY
- DO NOT RELY ON THIS PLAN FOR THE LOCATION & TYPE OF EASEMENTS THAT MAY AFFECT THE LAND. THESE SHOULD BE ASCERTAINED BY SURVEY SEARCH AND/OR FIELD SURVEY.
- FUTURE EASEMENTS MAY BE REQUIRED FOR SERVICING OR OTHER REASONS, & AS SUCH ARE SUBJECT TO FINAL SURVEY AND/OR ENGINEERING DESIGN.
- THE LOCATION OF BUILDINGS IS INDICATIVE ONLY AND TRUE POSITION IN RELATION TO BOUNDARIES IS SUBJECT TO SURVEY

SCALE

0 100 200 300 400m

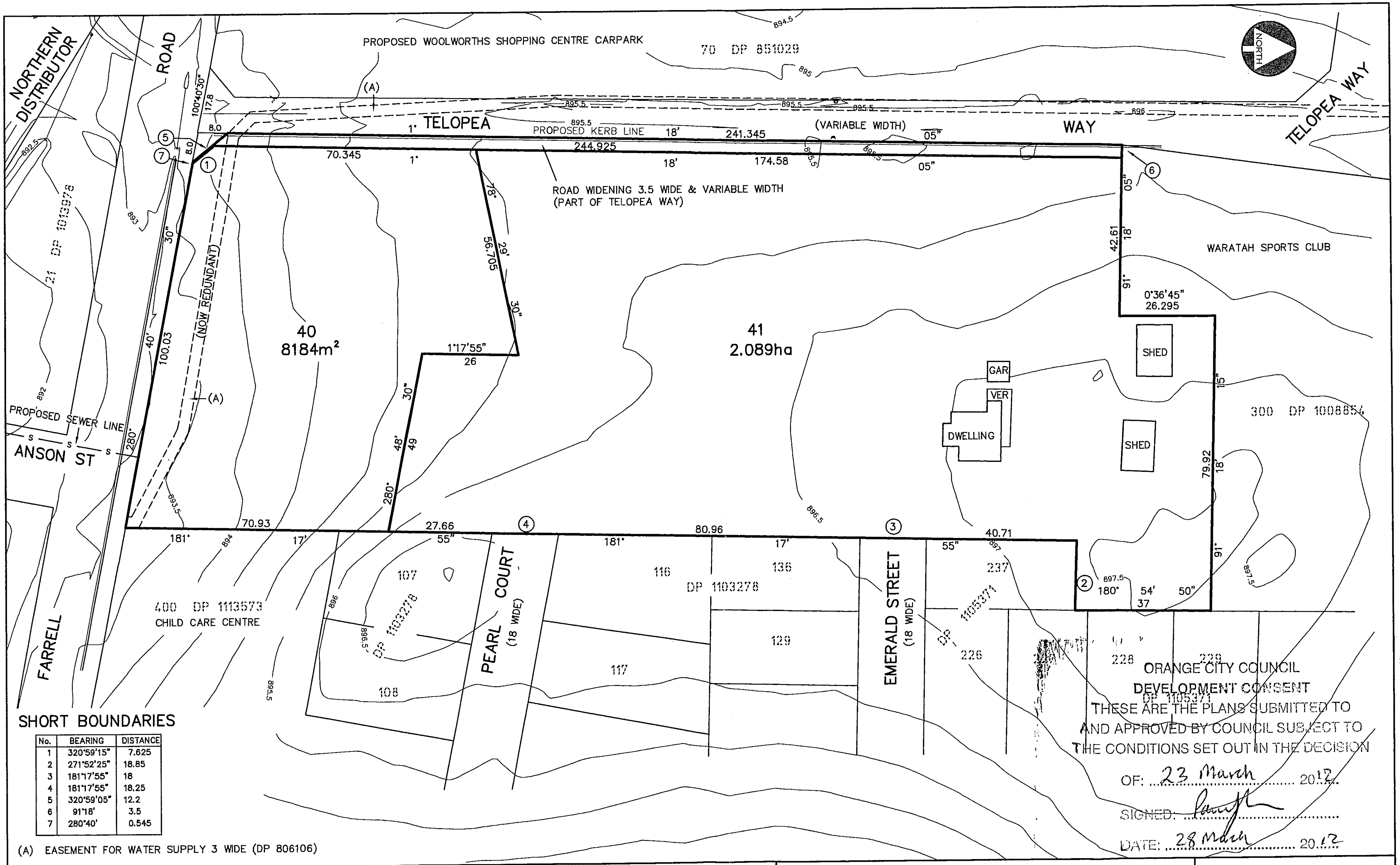
PLAN
1 : 7500

PROPOSED SUBDIVISION OF LOTS 40 & 41 DP 1165298
FARRELL ROAD, ORANGE

FIGURE 1 - LOCALITY

DATE: 29.08.2011 | REFERENCE: 11077DA | SHEET: 1 OF 4

PETER BASHA
PLANNING & DEVELOPMENT
Phone: 6361 2955 / Fax: 6360 4700
P.O. BOX 1827 ORANGE, NSW 2800



SHORT BOUNDARIES

No.	BEARING	DISTANCE
1	320°59'15"	7.625
2	271°52'25"	18.85
3	181°17'55"	18
4	181°17'55"	18.25
5	320°59'05"	12.2
6	91°18'	3.5
7	280°40'	0.545

(A) EASEMENT FOR WATER SUPPLY 3 WIDE (DP 806106)

IMPORTANT NOTES

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SCALE

0 15 30 45 60m

PLAN
1 : 1000

PROPOSED SUBDIVISION OF LOTS 40 & 41 DP 1165298
FARRELL ROAD, ORANGE

FIGURE 2 - EXISTING BOUNDARIES & SITE DETAIL

DATE: 29.08.2011 REFERENCE: 11077DA SHEET: 2 OF 4

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PLANNING & DEVELOPMENT
Phone: 6361 2955 Fax: 6360 4700
P.O. BOX 1827 ORANGE, NSW 2800

NORTHERN DISTRIBUTOR ROAD

PROPOSED WOOLWORTHS SHOPPING CENTRE CARPARK

70 DP 851029

PROPOSED ROAD WIDENING
854.5m²

NORTH

TELOPEA WAY

1. TELOPEA WAY (VARIABLE WIDTH)

PROPOSED KERB LINE 18'

APPROXIMATE PROPOSED ROAD ALIGNMENT

DP 1013978

PROPOSED SEWER LINE

ANSON ST

PATHWAY (No.1) 4 WIDE

PATHWAY (No.2) 4 WIDE

FARRELL ROAD

PEARL COURT (18 WIDE)

EMERALD STREET (18 WIDE)

WARATAH SPORTS CLUB

300 DP 1008854

400 DP 1113573
CHILD CARE CENTRE

DP 1103278

DP 1165371

Lot	Area
1	3661m²
2	693.1m² DWELLING
3	588.7m²
4	709.6m²
5	534.4m²
6	501.2m²
7	701.8m²
8	500m²
9	500m²
10	2000m²
11	2240m2
12	2200m2
13	2300m2
14	4922m2
15	4500m2

UNIT SITE

SHED

SHED

REMOVE GARAGE

NEW GARAGE

VER

ORANGE CITY COUNCIL
DEVELOPMENT CONSENT
THESE ARE THE PLANS SUBMITTED TO AND APPROVED BY COUNCIL SUBJECT TO THE CONDITIONS SET OUT IN THE DECISION
OF: 23 March 2012
SIGNED: [signature]
DATE: 28 March 2012

NOTES:

1). PROPOSED LOTS 11, 12, 13, 14 & 15 ARE IDENTIFIED FOR POSSIBLE NON–RESIDENTIAL USES IN ACCORDANCE WITH ZONING PROVISIONS THAT PREVAIL AT THE TIME

2). PATHWAY (No.2) 4 WIDE IS ONLY TO BE CREATED IN CONJUNCTION WITH PROPOSED LOTS 13, 14 & 15

3). PROPOSED ROAD WIDENING ALONG TELOPEA WAY ONLY TO BE CREATED IN CONJUNCTION WITH PROPOSED LOTS 12, 13, 14 & 15

(A) EASEMENT FOR WATER SUPPLY 3 WIDE (DP 806106) (NOW REDUNDANT)

IMPORTANT NOTES

- THIS PLAN HAS BEEN PREPARED FOR DEVELOPMENT APPLICATION PURPOSES ONLY
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SCALE

0 15 30 45 60m

PLAN
1 : 1000

PROPOSED SUBDIVISION OF LOTS 40 & 41 DP 1165298
FARRELL ROAD, ORANGE

FIGURE 3 - PROPOSED SUBDIVISION

DATE: 24.11.2011 | REFERENCE: 11077D3 | SHEET: 3 OF 4

PETER BASHA
PLANNING & DEVELOPMENT
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P.O. BOX 1827 ORANGE, NSW 2800

NORTHERN DISTRIBUTOR ROAD

PROPOSED WOOLWORTHS SHOPPING CENTRE CARPARK

PROPOSED ROAD WIDENING 854.5m²

70 DP 851029

NORTH

TELOPEA WAY

1' TELOPEA WAY (VARIABLE WIDTH)

PROPOSED KERB LINE 18'

APPROXIMATE PROPOSED ROAD ALIGNMENT

21 DP 1013978

WARATAH SPORTS CLUB

PROPOSED SEWER LINE

ANSON ST

PATHWAY (No.1) 4 WIDE

PATHWAY (No.2) 4 WIDE

REMOVE GARAGE

NEW GARAGE

SHED

VER

2 693.1m² DWELLING

1 3661m² UNIT SITE

3 588.7m²

4 709.6m²

5 534.4m²

6 501.2m²

7 701.8m²

8 500m²

9 500m²

10 2000m²

11 2240m2

12 2200m2

13 2300m2

14 4922m2

15 4500m2

300 DP 1008854

400 DP 1113573 CHILD CARE CENTRE

FARRELL

PEARL COURT (18 WIDE)

EMERALD STREET (18 WIDE)

DP 1103278

DP 1105371

ORANGE CITY COUNCIL
DEVELOPMENT CONSENT
THESE ARE THE PLANS SUBMITTED TO AND APPROVED BY COUNCIL SUBJECT TO THE CONDITIONS SET OUT IN THE DECISION
OF: 26 March 2012
SIGNED: Paul
DATE: 28 March 2012

NOTES:

1). PROPOSED LOTS 11, 12, 13, 14 & 15 ARE IDENTIFIED FOR POSSIBLE NON-RESIDENTIAL USES IN ACCORDANCE WITH ZONING PROVISIONS THAT PREVAIL AT THE TIME

2). PATHWAY (No.2) 4 WIDE IS ONLY TO BE CREATED IN CONJUNCTION WITH PROPOSED LOTS 13, 14 & 15

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(A) EASEMENT FOR WATER SUPPLY 3 WIDE (DP 806106) (NOW REDUNDANT)

IMPORTANT NOTES	SCALE
• THIS PLAN HAS BEEN PREPARED FOR DEVELOPMENT APPLICATION PURPOSES ONLY • ALL DIMENSIONS AND AREAS SHOWN ARE SUBJECT TO SURVEY • DO NOT RELY ON THIS PLAN FOR THE LOCATION & TYPE OF EASEMENTS THAT MAY AFFECT THE LAND. THESE SHOULD BE ASCERTAINED BY SURVEY SEARCH AND/OR FIELD SURVEY. • FUTURE EASEMENTS MAY BE REQUIRED FOR SERVICING OR OTHER REASONS, & AS SUCH ARE SUBJECT TO FINAL SURVEY AND/OR ENGINEERING DESIGN. • THE LOCATION OF BUILDINGS IS INDICATIVE ONLY AND TRUE POSITION IN RELATION TO BOUNDARIES IS SUBJECT TO SURVEY	0 15 30 45 60m PLAN 1 : 1000

PROPOSED SUBDIVISION OF LOTS 40 & 41 DP 1165298
FARRELL ROAD, ORANGE

FIGURE 4 - DCP 2004 COMPARISON

DATE: 24.11.2011 | REFERENCE: 11077D3 | SHEET: 4 OF 4

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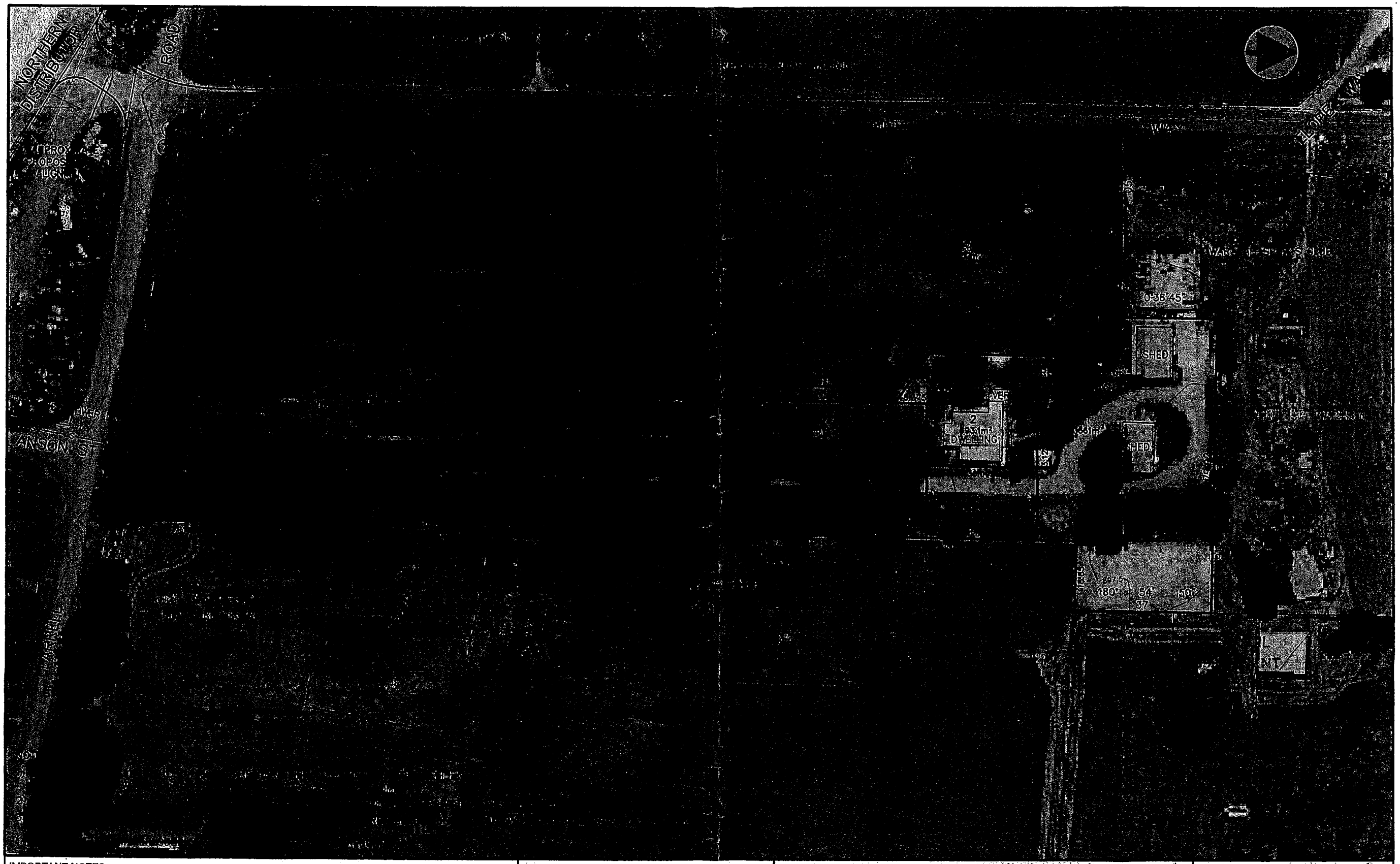


IMPORTANT NOTES	SCALE	PROPOSED SUBDIVISION OF LOTS 40 & 41 DP 1165298 FARRELL ROAD, ORANGE	PETER BASHA
• THIS PLAN HAS BEEN PREPARED FOR DEVELOPMENT APPLICATION PURPOSES ONLY • ALL DIMENSIONS AND AREAS SHOWN ARE SUBJECT TO SURVEY • DO NOT RELY ON THIS PLAN FOR THE LOCATION & TYPE OF EASEMENTS THAT MAY AFFECT THE LAND. THESE SHOULD BE ASCERTAINED BY SURVEY SEARCH AND/OR FIELD SURVEY. • FUTURE EASEMENTS MAY BE REQUIRED FOR SERVICING OR OTHER REASONS, & AS SUCH ARE SUBJECT TO FINAL SURVEY AND/OR ENGINEERING DESIGN. • THE LOCATION OF BUILDINGS IS INDICATIVE ONLY AND TRUE POSITION IN RELATION TO BOUNDARIES IS SUBJECT TO SURVEY	0 15 30 45 60m PLAN 1 : 1000	FIGURE 3 - PROPOSED SUBDIVISION DATE: 24.11.2011 REFERENCE: 11077D3 SHEET: 3 OF 4	PLANNING & DEVELOPMENT Phone : 6361 2955 Fax: 6360 4700 P.O. BOX 1827 ORANGE, NSW 2800

APPENDIX B
Economic and Needs Assessment

LOCATIQN

North Orange, New South Wales

Economic and Needs Assessment

Prepared for TPG

19th February 2013

TABLE OF CONTENTS

INTRODUCTION

This report presents an economic and needs assessment for a new convenience precinct, including a service station and a take away food and drink outlet, on the corner of Farrell Road and Telopea Way in North Orange in the Central West region of New South Wales.

This report has been prepared in accordance with instructions from The Planning Group New South Wales Pty Ltd.

Topics covered in this report include:

- Background information regarding the development.
- Definition of the key catchment area.
- A review of the current and future provision of service station and comparable food and drink premises within Orange.
- The future demand for service station and fast food facilities within Orange and the economic implications of the proposed development, including the anticipated impact of the development on the Orange Central Business Area (CBA).

1 BACKGROUND

i. Orange is a major service town in the Central West region of New South Wales. The town is situated around 55 km north-west of Bathurst and 250 km north-west of Sydney.

ii. Garfield Road Holdings Pty Ltd are planning to development a service station and KFC restaurant on the north-east corner of Farrell Road and Telopea Way in North Orange. North Orange is a major growth area in Orange and is located around 4.5 km north of the Orange Central Business District (CBD).

iii. Telopea Way has traffic lighted connection to the Northern Distributor Road in the south, with Farrell Road connecting to the growing residential suburbs in the north via Diamond Drive. The Northern Distributor Road is a major arterial road that circles the Orange urban area, connecting to the Mitchell Highway in the east and Forbes Road in the west.

iv. Map 1.1 illustrates the location of the proposed site, in addition to the surrounding uses. Key points to note include:

- The site is located directly east of the newly developed North Orange Marketplace. The new convenience based shopping centre is anchored by a Woolworths supermarket and 13 specialty shops. The centre is the major food and grocery shopping facility serving residents of the growing North Orange area.
- Orange Waratah Sports Club is situated at the end of Telopea Way, 300 metres to the north.
- The Waratah Early Learning Centre is located directly east of the site, along Farrell Road.

v. Additionally, given the growing nature of the area a number of development applications have been submitted for development of the surrounding Greenfield sites, including:

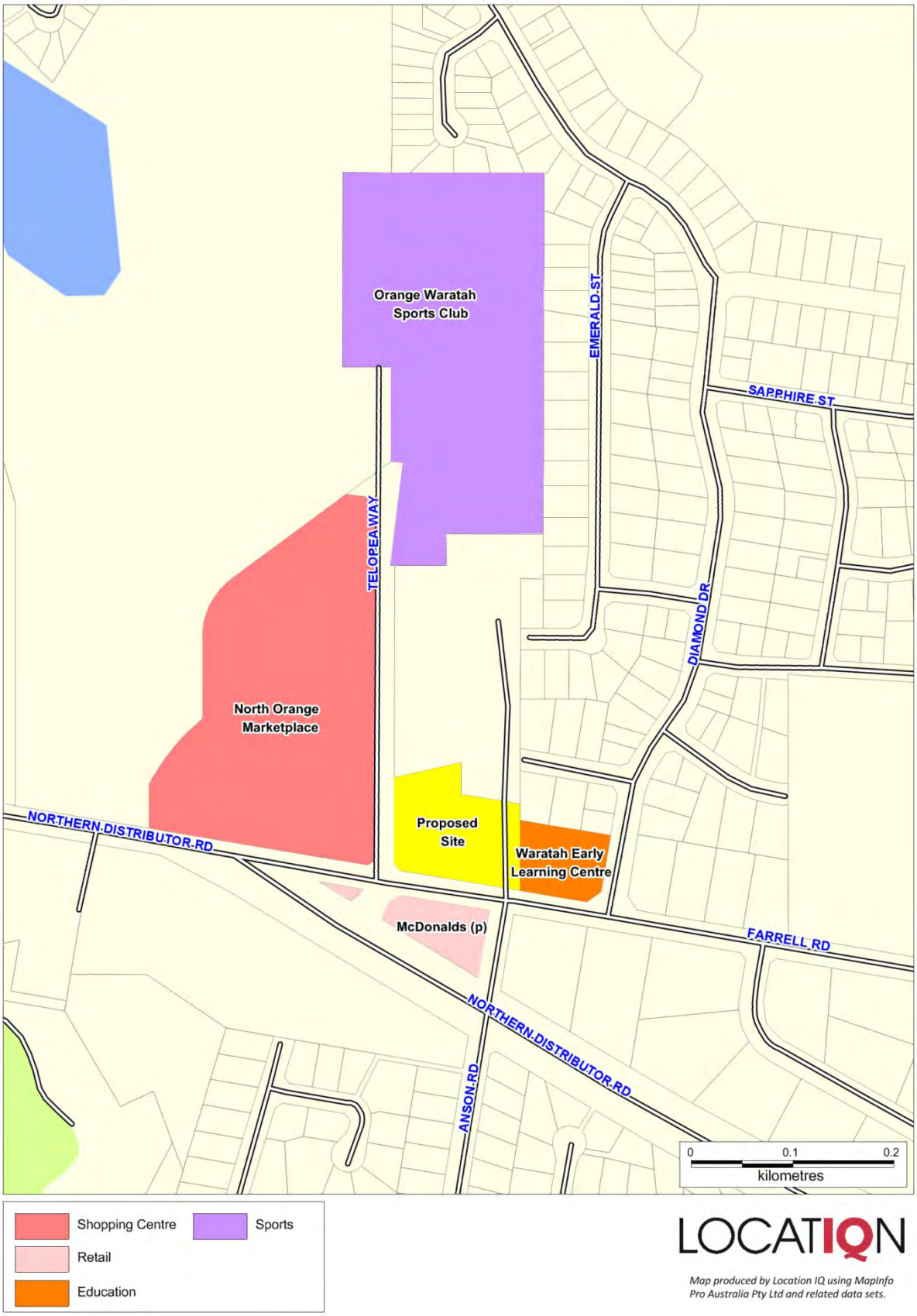
- A development application has been submitted for a McDonalds restaurant directly south of the site, along Farrell Road.
- A development application has been submitted for a child care centre on the corner of Telopea Way and Farrell Road (near the proposed development). The application is likely to be approved.

vi. The site is currently zoned R1 General Residential under the Orange Local Environment Plan (LEP) 2011, with service stations and take away food and drink premises prohibited under this zoning.

vii. As such, Garfield Road Holdings Pty Ltd are seeking to amend the Orange Local Environment Plan (LEP) to allow for the development of a service station and a take away food and drink premise (i.e. KFC) on the proposed site.

viii. The remainder of this report assesses the potential for and economic of a new service station and fast food outlet at the North Orange site.

MAP 1.1 – SITE LOCATION



2 CATCHMENT AREA DEFINITION

i. In order to assess the demand for further service station and takeaway food and drink floorspace within the Orange LGA, two key catchment areas have been defined. These catchment areas are illustrated on Map 2.1 and include:

- A **North Orange catchment area** encompassing the growing North Orange area.
- An **Orange Remainder catchment area** containing the remainder of the Orange LGA.

ii. Combined, these catchments form the Orange LGA. It is relevant to note that retail facilities within the Orange LGA generally serve a broader region than the immediate municipality, but for simplicity, the Orange LGA in total has been used. This means that our analysis is conservative in that it presents effectively a primary catchment in which retail facilities in Orange would serve.

iii. Table 2.1 details the current and projected trade population levels for each of the defined catchment areas. This information is sourced from the following:

- The 2006 and 2011 Census of Population and Housing undertaken by the Australian Bureau of Statistics (ABS).
- New dwelling approvals statistics sourced from the ABS for the period from 2006/07 to 2010/11 (refer Table 2.2).
- Population projections prepared by the New South Wales Department of Planning.
- Planning documents prepared by Orange City Council.
- Profile i.d. for the Orange City Council area.
- Investigations by this office into new residential developments in the region.

iv. At the time of the 2011 Census, there were 39,480 persons in the Orange LGA, including 10,100 in the North Orange catchment area and 29,380 in the Orange Remainder catchment area. The population within Orange has increased by around 480 persons per annum since the 2006 Census, with 68.6% of this population growth accommodated in the North Orange catchment area.

v. Figure 2.1 illustrates the planned residential settlement in the Orange LGA over the short, medium and long term (taken from the *Orange Sustainable Settlement Strategy and Local Environmental Study, February 2004*). As shown, the majority of short term residential growth is planned to occur throughout the North Orange area. This northern population growth is anticipated to spread further west over the longer term.

vi. A second major residential release area has been designated in the south of the Orange urban area, within the suburb of Bloomfield. Significant infrastructure costs are required before residential development can occur throughout this area, however for the purposes of this report, settlement of this area is projected to begin in around 2019/20.

vii. Discussions with Orange City Council indicate that the population growth within Orange is projected to continue to occur at a similar level as what has been experienced over the past five years. The population within the Orange LGA has increased by around 480 persons over the 2006 – 2011. Information provided by Profile i.d. indicates population growth within Orange has accelerated over the past few years, increasing by a high of 686 persons in 2010/11.

viii. Based on this, as well as the planned pattern of residential growth outlined in the Settlement Strategy, the population within the Orange LGA is projected to increase by around 500 persons per annum over the period to 2026, with 70% of this population growth to be accommodated in the North Orange catchment area over the short to medium term. The population within the Orange LGA is projected to reach 46,980 persons by 2026, including 14,350 in the North Orange catchment area and 32,630 in the Orange Remainder catchment area.

ix. Table 2.3 summarises the socio-economic characteristics of the Orange LGA population by catchment area compared with the non-metropolitan New South Wales benchmarks. This information is based on the 2011 Census of Population and Housing.

x. Key characteristics to note about the socio-economic profile of the Orange LGA population include:

- Overall, residents of the Orange LGA earn relatively high incomes and are generally younger than the non-metropolitan New South Wales benchmark. The area contains a relatively large Australian born market, with a higher proportion of traditional families (i.e. couples with dependent children).

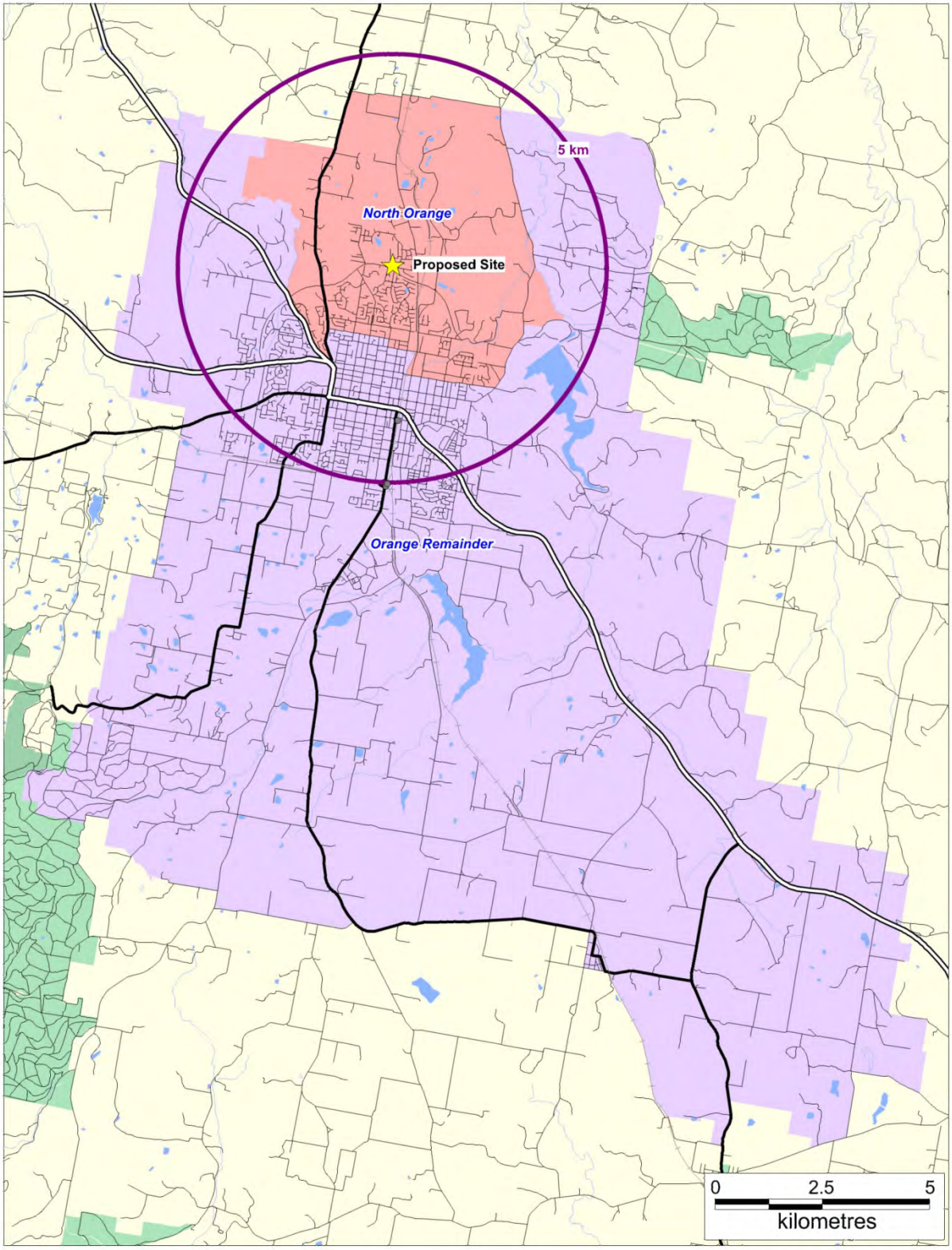
- As compared to the overall Orange LGA, the North Orange catchment area contains a very young (average age of 32.1 years), Australian born, family population who earn relatively high household incomes.

- Conversely, the population within the Orange Remainder catchment area is older (average age of 38.5 years), containing a much larger retiree and mature family market.

xi. In summary, the key North Orange catchment area is growing strongly, with the population increasing by 350 persons per annum over the 2006 – 2011 period. This population growth is expected to continue to occur over the forecast period, as infrastructure costs prevent the development of the Bloomfield area.

xii. According to the 2011 Census, the area contains a very young, family market who generally earn relatively high incomes. It is important to note, that this market is likely to be very time poor (the high household incomes indicate two working parents) and as such should be provided with a reasonable provision of convenience based facilities within close proximity to their homes, including a service station and food catering facilities.

MAP 2.1 – ORANGE LGA DEFINED CATCHMENT AREAS



Map produced by Location IQ using MapInfo Pro Australia Pty Ltd and related data sets.

TABLE 2.1 – ORANGE LGA POPULATION, 2006 – 2026

Trade Area Sector	Estimated Resident Population 2006	2011	Forecast Population 2013	2016	2021	2026
North Orange	8,460	10,100	10,800	11,850	13,350	14,350
Orange Remainder	28,630	29,380	29,680	30,130	31,130	32,630
Orange Local Government Area	**37,090**	**39,480**	**40,480**	**41,980**	**44,480**	**46,980**
		Average Annual Change (No.)				
		2006-2011	2011-2013	2013-2016	2016-2021	2021-2026
North Orange		328	350	350	300	200
Orange Remainder		150	150	150	200	300
Orange Local Government Area		**478**	**500**	**500**	**500**	**500**
		Average Annual Change (%)				
		2006-2011	2011-2013	2013-2016	2016-2021	2021-2026
North Orange		3.6%	3.4%	3.1%	2.4%	1.5%
Orange Remainder		0.5%	0.5%	0.5%	0.7%	0.9%
Orange Local Government Area		**1.3%**	**1.3%**	**1.2%**	**1.2%**	**1.1%**
Australian Average		*1.5%*	*1.5%*	*1.4%*	*1.3%*	*1.2%*

All figures as at June
All figures are based on 2011 SA1 boundary definition with the exception of 2006 which is based on 2006 CCD boundary definition.
Sources : ABS; NSW Department of Planning

TABLE 2.2 – ORANGE LGA NEW DWELLING APPROVALS, 2006/07 – 2010/11

Sector	Catchment Area North Orange	Catchment Area Orange Remainder	Orange LGA
New Houses			
2006/07	78	100	178
2007/08	79	60	139
2008/09	102	63	165
2009/10	127	62	189
2010/11	87	68	155
Total New Houses	**473**	**353**	**826**
Average	***95***	***71***	***165***
Other Dwellings			
2006/07	7	13	20
2007/08	18	5	23
2008/09	16	29	45
2009/10	79	82	161
2010/11	13	17	30
Total Other Dwellings	**133**	**146**	**279**
Average	***27***	***29***	***56***
Total Dwellings			
2006/07	85	113	198
2007/08	97	65	162
2008/09	118	92	210
2009/10	206	144	350
2010/11	100	85	185
Total Dwellings	**606**	**499**	**1,105**
Average	***121***	***100***	***221***

Source: ABS

FIGURE 2.1 – ORANGE LGA STRUCTURE PLAN

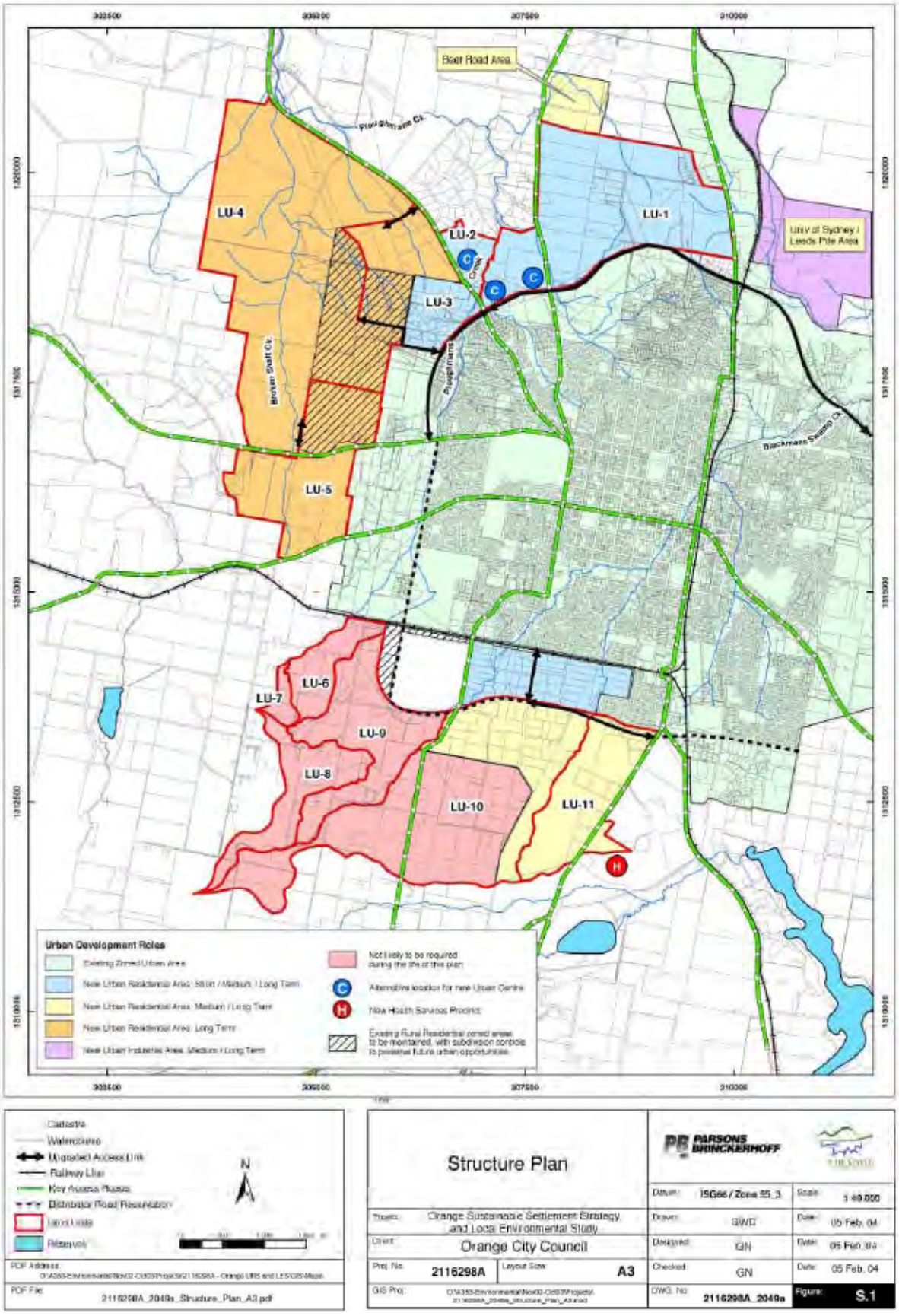


TABLE 2.3 – ORANGE LGA SOCIO-ECONOMIC PROFILE, 2011 CENSUS

Characteristics	Catchment Area North Orange	Catchment Area Orange Remainder	Orange LGA	Non Metro NSW Average	Aust Average
Income Levels					
Average Per Capita Income	$32,668	$32,582	$32,604	$29,579	$34,201
Per Capita Income Variation	10.4%	10.2%	10.2%	n.a.	n.a.
Average Household Income	$90,125	$78,881	$81,487	$72,680	$87,928
Household Income Variation	24.0%	8.5%	12.1%	n.a.	n.a.
Average Household Size	2.8	2.4	2.5	2.5	2.6
Age Distribution (% of Pop'n)					
Aged 0-14	26.7%	20.7%	22.2%	19.4%	19.3%
Aged 15-19	6.5%	7.4%	7.2%	6.6%	6.5%
Aged 20-29	15.5%	12.2%	13.0%	10.9%	13.8%
Aged 30-39	15.1%	12.0%	12.8%	11.3%	13.8%
Aged 40-49	13.3%	12.7%	12.8%	13.4%	14.2%
Aged 50-59	10.5%	12.8%	12.2%	13.9%	12.8%
Aged 60+	12.4%	22.3%	19.8%	24.4%	19.6%
Average Age	32.1	38.5	36.9	40.1	37.9
Housing Status (% of H'holds)					
Owner/Purchaser	67.7%	66.0%	66.4%	71.3%	69.3%
Renter	32.3%	34.0%	33.6%	28.7%	30.7%
Birthplace (% of Pop'n)					
Australian Born	91.2%	90.8%	90.9%	88.5%	73.9%
Overseas Born	8.8%	9.2%	9.1%	11.5%	26.1%
• Asia	1.8%	1.6%	1.7%	1.6%	7.6%
• Europe	2.9%	3.9%	3.6%	6.1%	9.4%
• Other	4.2%	3.7%	3.8%	3.8%	9.1%
Family Type (% of Pop'n)					
Couple with dep't children	52.5%	41.2%	44.1%	40.7%	45.3%
Couple with non-dep't child.	5.6%	6.6%	6.3%	7.0%	7.7%
Couple without children	18.6%	22.7%	21.6%	25.7%	23.0%
Single with dep't child.	11.4%	11.7%	11.6%	10.6%	9.2%
Single with non-dep't child.	2.7%	3.7%	3.4%	3.5%	3.5%
Other family	0.7%	1.0%	0.9%	0.9%	1.1%
Lone person	8.6%	13.2%	12.0%	11.7%	10.2%

Sources : ABS Census of Population and Housing 2011

3 COMPETITIVE FACILITIES

i. This section of the report outlines the current and future provision of service stations and comparable takeaway food and drink premises throughout the Orange LGA. This information is based on a survey undertaken of the area in February 2013.

Surrounding Comparable Food and Drink Premises

i. Map 3.1 illustrates the comparable food and drink premises throughout the Orange LGA. Given Garfield Road Holdings Pty Ltd are currently planning to include a KFC takeaway food outlet, comparable food and drink premises are those national outlets commonly referred to as fast food or quick service restaurants, including:

- KFC
- McDonalds
- Hungry Jacks
- Red Rooster
- Domino's
- Pizza Hut
- Subway
- Eagle Boys

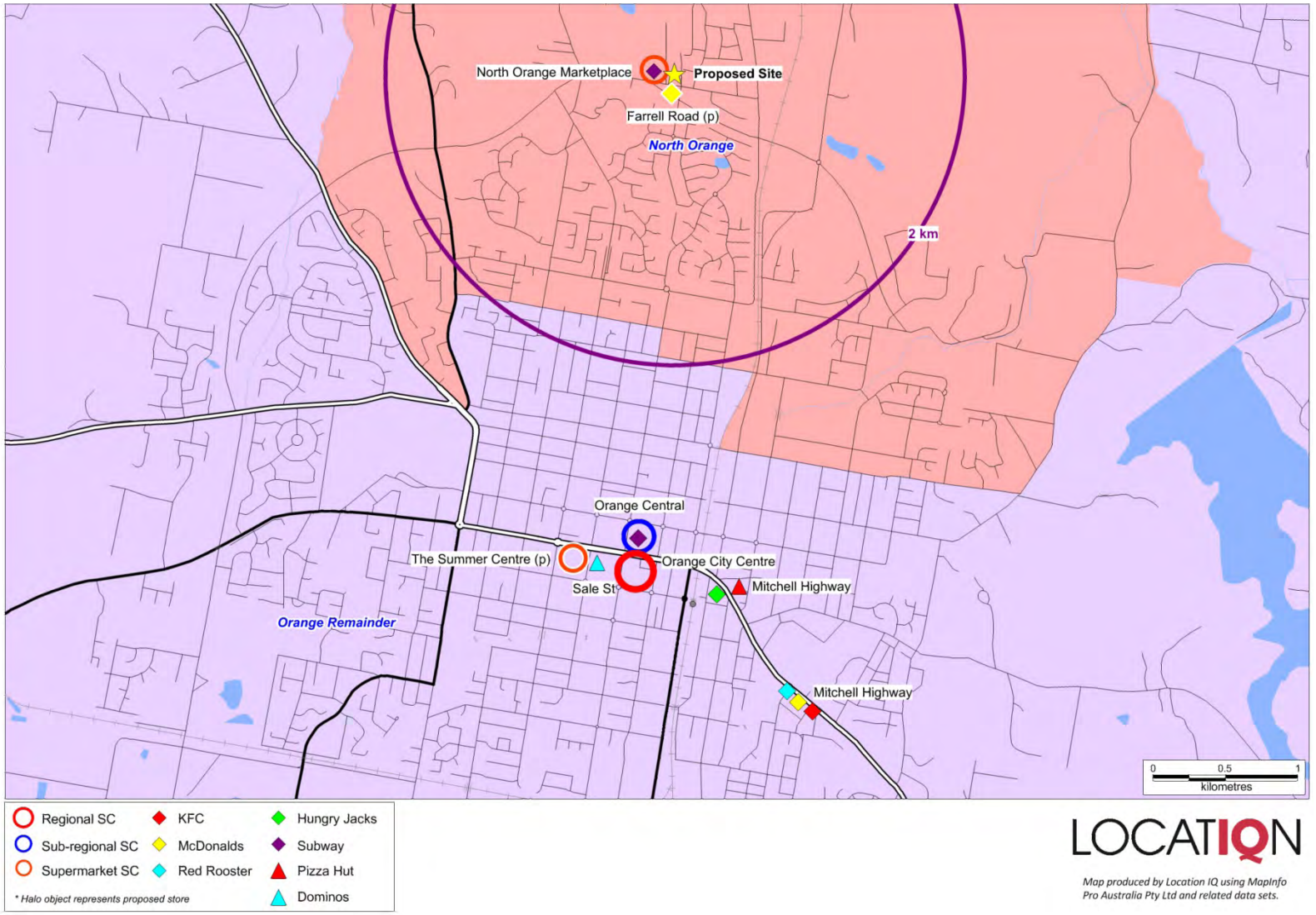
ii. There are other tenants which would also serve the food catering needs of residents throughout Orange, including independent retailers, taverns, cafes, restaurants and the like. These, however, do not typically compete with the larger national outlets detailed above.

iii. The majority of fast food retailing within the Orange LGA is located along the Mitchell Highway. Key precincts include:

— A Subway has recently opened as part of the newly development North Orange Marketplace, directly opposite the proposed site.

— McDonalds and Red Rooster are co-located in the block bounded by the Mitchell Highway to the north, Elizabeth Street to the east and Glenroi Avenue to the west on the eastern edge of the Orange urban area (6 km to the south-east of the site). A KFC is also located within close proximity, separated by the Orange Motor Lodge motel.

MAP 3.1 – ORANGE LGA COMPARABLE FOOD AND DRINK PREMISES PROVISION



- A Hungry Jacks and Pizza Hut are located on opposite sides of the Mitchell Highway, near the Endsleigh Avenue intersection (4 km to the south of the site).
- Within the Orange CBD (3.5 km to the south of the site), two fast food outlets are provided including a Subway (externally located in Orange Central along Summer Street) and a Domino's Pizza along Sale Street.

iv. At present, the Subway at North Orange Marketplace is the only comparable food and drink premise serving the North Orange area. However, a development application has been submitted for a McDonalds restaurant, directly south of the proposed site along Farrell Road.

Surrounding Service Station

i. Map 3.2 illustrates the provision of services stations within the Orange LGA. Overall, 11 service stations are provided throughout the Orange LGA, including:

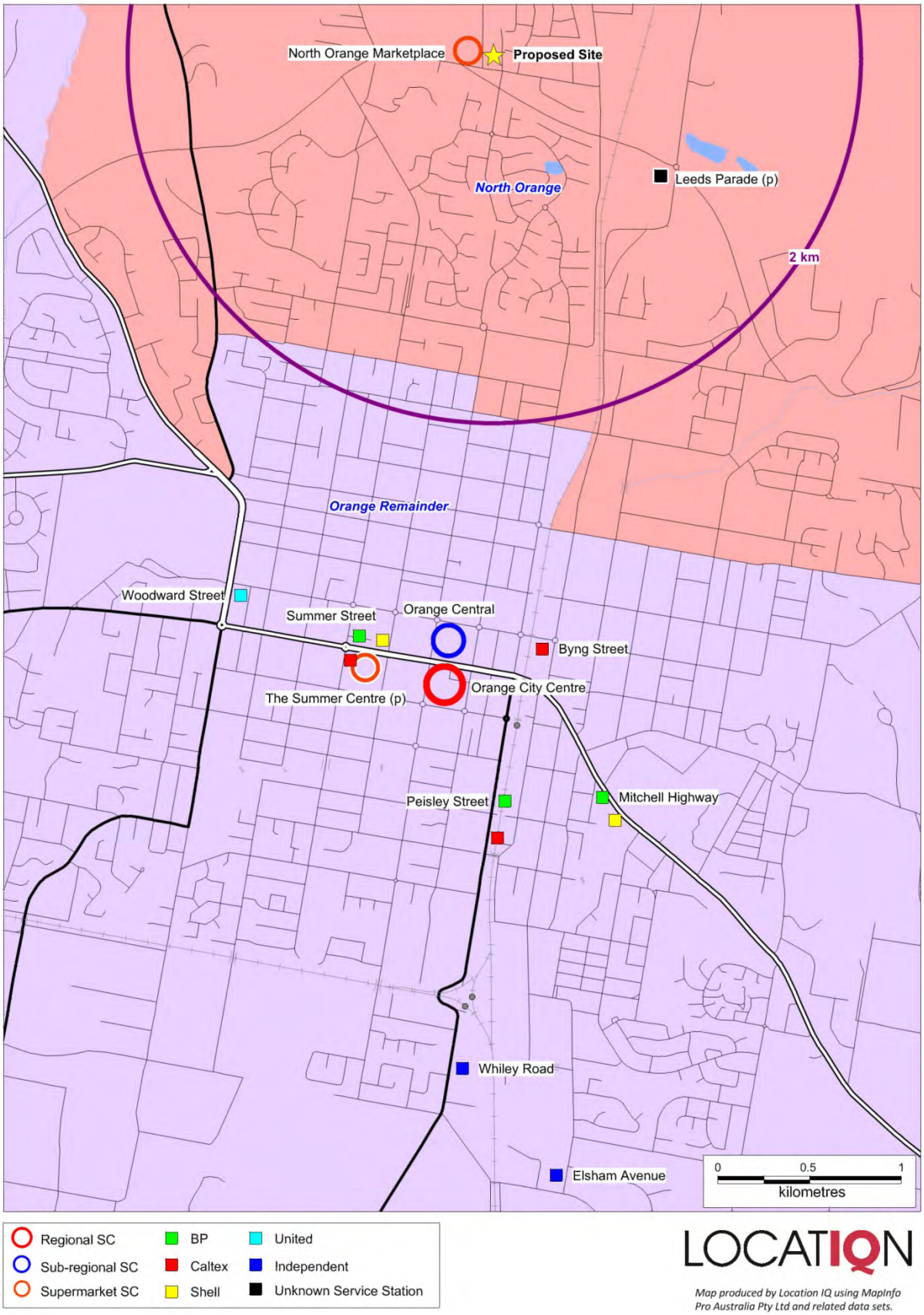
- All three major brands (i.e. BP, Caltex and Shell) are provided at western extent of the Orange CBD along Summer Street (3.5 km to the south of the site). Both the BP and Caltex look relatively new, with the Shell an older looking store. All three service stations have 4 – 5 petrol pumps.
- A United services station is located along Woodward Street to the north-west of the Orange CBD (4.0 km to the south-west), with a Caltex is situated along Byng Street to the north-east of the Orange CBD (4.3 km to the south-east). Both services stations are of relatively good quality, with the United outlet co-located with a QuickStop convenience outlet.
- BP and Shell service stations are located within close proximity to the KFC, McDonalds and Red Rooster restaurants along Mitchell Highway, at the eastern extent of the Orange urban area (4.5 km to the south-east of the site). The Shell service station is quite old, with the BP a relatively new store.

- BP and Caltex services stations are situated within close proximity to each other along Peisley Street (4.8 km to the south), although the BP has only a relatively small shop attached.
- Two independent service stations are located in southern part of the Orange urban area, including Volume Plus along Whiley Road (6 km to the south) and Leewood Fuel along Elsham Avenue (7 km to the south). Volume Plus is co-located with the South Orange garage and only provides two petrol pumps. Leewood Fuel is larger, with four petrol pumps, and is currently the major service station serving the employment lands in the south of the Orange urban area.

ii. Overall, 11 service stations are provided throughout the Orange LGA, with the majority located within a 1.3 km radius of the Orange CBD.

iii. There are currently no services stations provided to serve the North Orange population. However, Orange City Council has indicated there is an appropriately zoned site at the intersection of Northern Distributor Road and Leeds Parade (1.3 km to the south-east) that would be suited to a *'highway service centre style'* development, possibly including takeaway restaurants and service stations. Given the high profile nature of the site, there is a possibility that a service station will be developed on the site at some point in the future.

MAP 3.2 – ORANGE LGA SERVICE STATION PROVISION



Map produced by Location IQ using MapInfo Pro Australia Pty Ltd and related data sets.

4 ECONOMIC IMPACT AND NEED ANALYSIS

i. This section addresses the potential for and economic impact of the proposed services station and takeaway food outlet development, including:

— Demand for comparable takeaway food floorspace.

— Demand for service stations.

— Impact on the Orange CBD.

Demand for Comparable Takeaway Food Floorspace

i. There are currently eight comparable fast food takeaway facilities provided within the Orange LGA, with only one of these provided within the North Orange catchment area.

ii. Table 4.1 assesses the future demand for food catering floorspace within the Orange LGA. Key points to note:

— Total food catering spending by Orange LGA residents is currently estimated at $37.4 million, including $9.6 million by North Orange residents and $27.8 by the Orange Remainder residents.

— Total food catering spending by Orange LGA residents is projected to increase to $50.5 million by 2026, representing growth of $13.2 million (constant 2011/12 dollars and including GST). This includes food catering growth of $5.7 million in the North Orange market and $7.4 million in the Orange Remainder market.

— Food catering tenants (including take away stores and cafes) are estimated to typically achieve sales of around $5,000 per sq.m.

iii. Based on this, around 2,630 sq.m of additional food catering floorspace will be demanded throughout the Orange LGA over the period to 2026 (i.e. $13.2 million divided by $5,000). This will include 1,145 sq.m by North Orange residents and 1,485 sq.m by Orange Remainder residents.

TABLE 4.1 – DEMAND FOR FOOD CATERING FLOORSPACE

		North Orange	Orange Remainder	Total Orange CBD
	Food Catering Spend ($'000)			
(1)	2012	9,634	27,760	37,395
(2)	2026	15,362	35,184	50,545
(3)=(2)-(1)	Growth (2012-2026)	5,727	7,423	13,151
	Food Catering Floorspace Demand			
(4)	Average Sales per sq.m ($)	5,000	5,000	5,000
(5)=(3)*1,000/(4)	Future Floorspace Demand (sq.m)	1,145	1,485	2,630

**Constant 2011/12 dollars & Including GST*
Source : Marketinfo

iv. This indicates that there will be significant demand for further food catering floorspace throughout the Orange LGA over the next 15 years, particularly within the North Orange area where population growth is projected to continue to be strong. This will allow for not only the development of the proposed KFC but also for other proposals throughout the area, such as the proposed McDonalds restaurant along Farrell Street and any food catering development that may occur on the Leeds Parade site.

v. It is also important to note that this analysis does not account for increased food catering spending from residents residing beyond the Orange LGA. Given the presence of the proposed Leeds Parade site on a major arterial road, it is likely that any development of the site will attract a proportion of spending from passing traffic. Therefore, the analysis in Table 4.1 is a conservative view of the future demand for food catering floorspace within the Orange LGA.

vi. Overall, population growth within Orange will result in additional demand for food catering floorspace throughout the Orange LGA. Given North Orange is the major growth area within Orange, the area is the ideal location for major national chains to consider adding a second store to their network. This is evidenced by the recent opening of Subway and the planned opening of McDonalds within the North Orange area.

vii. Whilst it is likely both stores will have some impact on their existing store within Orange, the chains have clearly investigated the demand for food catering floorspace within the Orange market and it is strong enough to support a two store network. KFC's commitment to the proposed site is further evidence of this.

viii. The KFC takeaway food premises at the proposed site will only account for a relatively small proportion of the total growth in food catering spending over the next 15 years, allowing other food catering proposals to be developed throughout the Orange LGA (including the proposed McDonalds and any development that may occur on the Leeds Parade site).

Demand for Service Station Floorspace

i. There are currently 11 service stations provided within the Orange LGA. No service stations are provided to serve the North Orange catchment area.

ii. Tables 4.2 and 4.3 outline the calculation of the Orange LGA residents market for fuel currently and over the period to 2026. The Orange LGA resident fuel market is around 43 million litres, projected to increase to 51 million litres by 2026.

iii. This excludes demand from passing traffic. Given the location of Orange along the Mitchell Highway, fuel consumption by passing traffic is likely to be relatively high. Therefore, this analysis can be considered a conservative view of the future demand for service stations.

iv. A modern petrol outlet on average records sales of 3 - 3.5 million litres a year. The size of the petrol market in the Orange LGA can currently support 12 – 14 service stations, with 11 currently provided.

v. Over the period to 2026, population growth within the Orange LGA will enable the area to support around 15 – 17 services stations or an additional three outlets.

TABLE 4.2 – TOTAL VEHICLES IN ORANGE LGA

	Year			
	2011	2016	2021	2026
Estimated Resident Population (ERP)	39,480	41,980	44,480	46,980
Total Dwellings	15,796	16,797	17,797	18,797
Average Household Size	2.5	2.5	2.5	2.5
Average Vehicles per Household	1.4	1.4	1.4	1.4
Total Vehicles	**21,944**	**23,334**	**24,723**	**26,113**

Source: 2011 Census of Population & Housing

TABLE 4.3 – TOTAL ORANGE LGA RESIDENT MARKET (FUEL)

	Year			
	2011	2016	2021	2026
Fuel Consumption Per Annum				
Average NSW Travel (km)	14,200	14,200	14,200	14,200
Average Australia Fuel Consumption/100L	13.8	13.8	13.8	13.8
Average Fuel Usage (L)	**1,960**	**1,960**	**1,960**	**1,960**
Total Vehicles	21,944	23,334	24,723	26,113
Total Consumption Per Annum (L)	**43,001,462**	**45,724,453**	**48,447,443**	**51,170,433**

Source: ABS Survey of Motor Vehicle Use; 2011 Census of Population & Housing

vi. Given the current relatively high supply of service stations provided within close proximity to the Orange CBD, as well as population growth projected to occur in North Orange, two of the three additional service stations demanded over the period to 2026 should be provided within the North Orange catchment area. As such, a service station at both the proposed site and the Leeds Parade site will be supportable over the period to 2026, with a third outlet supportable elsewhere within the Orange LGA.

vii. Of the two proposed North Orange outlets, one should be conveniently provided to serve local residents, with the other better located to serve passing traffic. The proposed site and the Leeds Parade site are ideally situated to serve these two markets.

viii. The service station at the proposed site will be ideally located to serve the residents of the growing North Orange area. The location of the proposed site, opposite North Orange Marketplace will make it easy for residents to complete their weekly shop in one easy to access location. In addition, fuel vouchers are likely to be offered, given the proximity of the proposed service station to the North Orange Woolworths supermarket.

ix. The majority of these residents are young, two parent working families who are likely to be very time poor. It is important to provide a basic provision of convenience based facilities within close proximity to their homes. These residents would also benefit strongly from the use of fuel vouchers, lessening the cost of a major weekly expense item (i.e. fuel).

x. The Leeds Parade site is not ideally located to serve local residents, however, the location of the site along the Northern Distributor Road would make it ideal to serve passing traffic travelling throughout the North Orange area.

xi. Both stores in combination will effectively serve the combined needs of the North Orange catchment. This is similar to the two independent service stations in the southern Orange area, with the Whiley Road outlet serving passing traffic and the more internally located Elsham Avenue outlet serving businesses operating within the industrial lands.

Impact on Orange CBD

i. The best way to understand the likely impact on the Orange CBD of a new service station and takeaway food outlet at the proposed site, is to assess the impact that has occurred from the opening of the new North Orange Marketplace.

ii. North Orange Marketplace is a new convenience centre, anchored by a Woolworths supermarket and 13 specialty shops. Whilst sales for the centre are not publically available, we estimated that the centre is likely to achieve sales of around $40 million.

iii. An assessment of the likely impact that the new $40 million centre has had on the Orange CBD reveals the following:

— The Orange CBD remains well leased, with only a few vacant shops in some of the larger centres. The opening of the North Orange shopping centre has in no way resulted in the closure of a number of shops, with the current vacancies typical of a market that has a healthy turnover (churn) of tenants.

— The Woolworths supermarket within the Orange CBD has recently been refurbished, indicating Woolworths' commitment to the store despite the opening of a new store within North Orange.

— The redevelopment of The Summer Centre is now under construction. The centre will include a supermarket, large format liquor outlet and specialty shops. Construction of this centre appears to have been in no way affected by the opening of the convenience centre in North Orange.

— Additionally, Orange City Council are currently accepting expressions of interest for a new shopping centre on the Council owned car park site in the block bounded by Summer Street, Anson Street, Kite Street and Sale Street. Council have indicated that the site is large enough to accommodate 8,400 sq.m of additional floorspace. The planned release of such a large provision of retail floorspace to the Orange market indicates that the North Orange Marketplace development has in no way affected the continued growth of retail floorspace within the Orange market.

iv. Based on all of the above, the development of the North Orange Marketplace appears to have had no detrimental impact on existing retail floorspace within the Orange LGA. Further, the opening of the centre has not prevented future retail development occurring within the Orange CBD, with The Summer Centre already under construction and Orange City Council planning a further 8,400 sq.m of floorspace on the car park site.

v. The combined retail sales of the proposed service station and KFC are likely to be around $2 million, which is only 5% - 6% of the sales likely to be achieved by North Orange Marketplace. Given the limited impact that has occurred from the development of North Orange Marketplace, with sales of $40 million, the proposed service station and KFC development, with sales of around $2 million, will not have any discernable impact on the Orange CBD.

vi. Development of a KFC at the site will largely affect the existing KFC along the Mitchell Highway (located outside of the Orange CBD). Given KFC's interest in the site, the brand is clearly willing to accept this impact as part of their growth strategy. Smaller impacts are likely to be experienced on other comparable takeaway food outlets, primarily McDonalds, Hungry Jacks and Red Rooster. All of these chains are currently located outside of the Orange CBD. Therefore, we can conclude that the provision of a KFC restaurant on the site is unlikely to have a detrimental impact on any one retailer within the Orange LGA, with little to no impact on retailers within the Orange CBD.

vii. Whilst the fuel sales at the proposed service station are likely to impact on service stations within the Orange CBD, this impact will be spread across 11 different outlets and therefore is unlikely to detrimentally affect the performance of any one outlet, particularly given the strong growth projected to occur within the North Orange area.

viii. It is reasonable that these North Orange residents are provided with their own service station facilities, with at least three outlets supportable within the North Orange area over the period to 2026. One of these outlets should be located to serve local residents, with the other situated to serve the passing traffic along the Northern Distributor Road.

ix. It is also important to note, that adding a service station and two takeaway food stores (i.e. KFC and McDonalds) to the North Orange area will in no way impact on the retail hierarchy within Orange. The purpose of retail within the North Orange area is to serve the local market only. Each of the proposed retailers are required for

residents to complete their daily and weekly shopping needs, with residents continuing to use the Orange CBD for their higher order retail shop (i.e. non-food retail, banking, etc.).

Summary

i. There is clearly demand for further food catering and service station floorspace within the Orange LGA. Given the population growth within the North Orange area and the lack of facilities currently, it is logical that a proportion of this future demand is catered for within the North Orange area.

ii. The North Orange market contains a large number of young, two parent working families, who are likely to be very time poor. It is important to provide this market with an adequate provision of convenience based retail facilities within close proximity to their homes. This should include service station(s) and food catering floorspace.

iii. The location of the proposed site opposite the new developed North Orange Marketplace makes it the ideal site to accommodate this future demand. If the McDonalds restaurant is approved, the co-location of the KFC will add chose and variety for residents wishing to shop at affordable food catering facilities. The close location of the service station to a Woolworths supermarket will mean the store is likely to provide fuel vouchers, reducing the cost of a major weekly expense for local residents.

x. An examination of the Orange CBD post the opening of North Orange Marketplace indicates a vibrant centre. This would suggest the development of North Orange Marketplace has had limited impact on existing retail floorspace within the CBD. Additionally, the centre has not prevented further retail development within the Orange CBD, with The Summer Centre already under construction and Orange City Council planning a further 8,400 sq.m of floorspace on the Council car park site.

iv. This would indicate the planned service station and takeaway food outlet at North Orange, which is likely to achieve sales of $2 million or only 5% - 6% of the sales estimated at North Orange Marketplace, will not have any discernable impact on retailers within the Orange CBD.

v. Additionally, given the extensive provision of floorspace provided within the Orange CBD and the convenience nature of the proposed development, the addition of a service station and takeaway food outlet at North Orange will in no way impact on the existing or future Orange retail hierarchy. The Orange CBD will continue to be the major non-food and higher order retail destination for North Orange residents.

Location IQ
02 8248 0100
Level 6, 56 Pitt Street
Sydney NSW 2000
www.locationiq.com.au

APPENDIX C

Site Selection and Community Survey for Potential KFC sites at North Orange

Yum! Restaurants International

Yum! Restaurants Australia Pty Limited ABN 16 000 674 993
Kentucky Fried Chicken Pty Limited ABN 79 000 587 780
20 Rodborough Road (Locked Bag 522)
Frenchs Forest NSW 2086 Australia
Tel (612) 9930 3000 Fax (612) 9930 3001

29th October 2012

Mr Andrew Wilson
Director
TPG Town Planning and Urban Design
PO Box 1612
North Sydney NSW 2060

Dear Mr Wilson,

Re: Potential KFC Site at Telopea Way, North Orange

This letter is to confirm that KFC would like to construct a free standing drive through restaurant at Telopea Way, North Orange (refer attached site plan). The proximity to the North Orange Woolworths Marketplace and the proposed new McDonalds amongst other factors make this KFC's preferred location in Orange for a new store.

Orange Overview

The City of Orange is one of the ten fastest growing local government areas in Australia with high population and economic growth. The current population of Orange City is 39,480 and as a strong regional centre it draws from a large catchment area in the surrounding rural area (approximately 50,000 within 40kms radius of Post Office).

The Orange region economy has experienced strong growth in the past and is diversified with exposure to different industries such as Mining, Health, Government Services, Agriculture, Tourism, Retail and Manufacturing.

Orange acts as a major mining industry centre and services Newcrest Mining's Cadia Valley Gold and Copper operations located some 20 kilometres to the south of the city.

Orange is home to the head office of the New South Wales Government's Department of Trade and Investment, Regional Infrastructure and Services, a Charles Sturt University campus and is a significant regional medical referral centre.

The city's hospital has been recently redeveloped at a cost of over $250 million and provides state of the art medical services not available in most regional areas and is the largest hospital in western New South Wales. NSW Health estimates that Orange provides health services to a catchment population to approximately 300,000 people.

The well-rounded economy of Orange ensures that future economic growth is not dependent on any one sector.

Yum! Restaurants International

Yum! Restaurants Australia Pty Limited ABN 16 000 674 993
Kentucky Fried Chicken Pty Limited ABN 79 000 587 780
20 Rodborough Road (Locked Bag 522)
Frenchs Forest NSW 2086 Australia
Tel (612) 9930 3000 Fax (612) 9930 3001

Existing KFC Restaurant at Orange

KFC currently operates a restaurant in Orange that was built in 1970. The restaurant is located on the corner of Mitchell Highway and Elizabeth Street. It enjoys good visibility from the road and is the first Fast Food Restaurant reached when approaching from the east. McDonald's and Red Rooster are located less than 200m further down the road and can be viewed from outside the KFC store. The existing store is approximately 5.7kms to the south of the proposed new site at North Orange.

The existing store is currently operating at capacity and the drive through lane often backs up onto Elizabeth Street creating access issues for customers. Future growth at this location is capped due to the significant constraints of the current facility.

Potential New KFC Restaurant at North Orange

Strong population growth in Orange, and in particular North Orange, leads KFC to believe that a second store is viable.

The capital expenditure for a new KFC is considerable therefore each potential new KFC store is assessed under a number of criteria to ensure that a new site is successful. KFC conducts extensive analysis when deciding whether to build a new restaurant. Some of the key factors considered are population size, passing by traffic and nearby retail generators.

Internal research shows that proximity to strong retail generators, such as regional shopping centres, have a positive correlation to the sales of a KFC restaurant. In addition to this, close proximity to other fast food restaurants is also positively correlated to sales for a KFC store. Clusters of like restaurants together tend to act as stronger drawcard than single restaurants alone.

KFC assessed other locations in Orange such as the new Narrambla business park area and Summer Street in the main shopping precinct. After reviewing the different options, the Telopea Way site was preferred due to the close proximity to the population growth area of North Orange, North Orange Marketplace for Woolworths, the proposed new McDonalds and the North Orange bypass.

To further validate this analysis, face to face "Customer Origin" surveys were conducted in the existing Orange store in May and September 2012. Of the 455 survey respondents, 51% indicated that they would use a new KFC store at Telopea Way, North Orange.

KFC believes strongly that if Telopea Way parcel is rezoned and KFC is approved to build then this will be a successful new restaurant for KFC.

Yours faithfully,
Yum! Restaurants International

Andrew Deane
KFC Development Manager

APPENDIX D
Preliminary Contamination Assessment

Preliminary contamination assessment

Lot 40 in the proposed subdivision of Lot 72 DP851029 Farrell Road, Orange NSW

Ref: R11094c
Date: 4 April 2011

Envirowest Consulting *Pty Ltd* ABN 18 103 955 246
• 24 William Street, PO Box 8158, Orange NSW 2800 • Tel (02) 6361 4954 •
• Fax (02) 6360 3960 • Email ec@envirowest.net.au • Web www.envirowest.net.au •

Environmental
Geotechnical
Hygienist
Services

Prepared by:	Envirowest Consulting Pty Ltd 24 William Street Orange NSW 2800
Client:	Garfield Road Holding 8 Braemar Circuit Orange NSW 2800
Assessor:	Leah Desborough BNatRes (Hons) Environmental Scientist
Authorising Officer:	Greg Madafiglio PhD Senior Environmental Scientist
Interested authorities:	Orange City Council
Report number:	R11094c
Date:	4 April 2011

Executive summary

Background

A subdivision is proposed for Lot 72 DP851029 Farrell Road, Orange NSW. Lot 40 will be created with a residential or commercial land-use. The site is in a former orchard and potential exists for contamination. An investigation of Lot 40 is required to determine the soil contamination status and suitability for the proposed land-use.

Objectives of the investigation

A preliminary site investigation was conducted in accordance with the contaminated land management planning guidelines State Environmental Planning Policy No. 55 (SEPP 55) to determine the soil contamination status of Lot 40 in the proposed subdivision of Lot 72 DP851029 Farrell Road, Orange NSW.

Investigation and conclusions

An inspection of the site (Lot 40) was made on 21 March 2011. The site is located on the northern fringe of the City of Orange and is surrounded by land undergoing residential development. The site has an area of 8,427m^2.

The site contains two land-use units. The majority of the site is a field and was previously used as pome fruit orchard. Agricultural management activities are expected to be uniform over the field. The use of agricultural pesticides over the field in the past is expected and may have included persistent pesticides and herbicides.

The second land-use unit is a driveway along the eastern boundary. The driveway is gravel formed and contains a vegetated windbreak. Past use of agricultural pesticides over this area is expected to be low.

There is no evidence of sheep dips, mixing sheds or contaminating industrial activities on the site from the review of site history or site walkover.

The contamination status of the site was assessed from a soil sampling and laboratory analysis program. Twenty discrete soil samples were collected over the site. Composite soil samples were analysed for arsenic, cadmium, chromium, copper, lead, nickel, zinc, mercury and organochlorine pesticides (OCP).

The soil sampling program did not detect elevated levels of the analysed metals or OCP. The levels of all substances evaluated were below the DECCW investigation threshold for residential land-use with access to soil and commercial land-use. In conclusion, no contamination was found.

Recommendations

No further investigation is necessary and the site is suitable for residential and commercial activities.

Contents

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1. Introduction

A subdivision is proposed for Lot 72 DP851029 Farrell Road, Orange NSW. Lot 40 will be created with a residential or commercial land-use. The site is in a former orchard and potential exists for contamination. An investigation of Lot 40 is required to determine the soil contamination status and suitability for the proposed land-use.

A desktop study and a review of the available history were undertaken of the site. A walkover and site inspection for evidence of contamination from past activities was conducted on 21 March 2011. Soil samples were collected and analysed for metals and persistent pesticides.

2. Scope of work

Envirowest Consulting Pty Ltd was commissioned by Garfield Road Holding to undertake a preliminary contamination investigation, in accordance with the contaminated land management planning guidelines, from the *Contaminated Land Management Act 1997* and the *State Environmental Policy No. 55 (SEPP 55)*, of Lot 40 in the proposed subdivision of Lot 72 DP851029 Farrell Road, Orange NSW. The objective was to identify past potentially contaminating activities, identify potential contamination types, discuss the site condition, provide a preliminary assessment of site contamination and determine suitability for residential and commercial land-use.

3. Site identification

Address	Lot 40 in the proposed subdivision of Lot 72 DP851029 Farrell Road Orange NSW
Owner(s)	Garfield Road Holding
Deposited plans	Lot 40 in the proposed subdivision of Lot 72 DP851029
Australian Map Grid	55H E695861m N6318576m
Locality map	Figure 1
Site plan	Figure 2
Photograph(s)	Figure 3
Area	8,427m^2

4. Site history

4.1 Zoning

The site is zoned 2a Urban Residential under the Orange LEP (2000).

4.2 Land-use

The site is located on the northern outskirts of Orange near Waratah Sporting Fields.

The site contains two land-use units; field and driveway. The majority of the site consists of field. The field area was vacant on the day of inspection and is expected to be intermittently used for stock grazing. Radiata pine windbreaks exist along the western and eastern sides of the field. Previous land-use of the field was orchard.

The driveway unit consists of a formed gravel residential driveway. The driveway also contains a radiata pine and privet windbreak. The driveway currently provides access to a residential dwelling located outside the investigation area to the north.

4.3 Summary of council records

None expected

4.4 Sources of information

Site inspection 21 March 2011 by Leah Desborough
Interview with past owners (orchardists)
Topographic map of area (Orange 1:25,000 CMA of NSW)
NSW DECCW records of public notices under the CLM Act 1997
Aerial photograph 1963
Department of Lands spatial exchange aerial photographs 2008

4.5 Chronological list of site uses

Orchard trees are visible in the 1963 aerial photograph. Vegetated windbreaks are located along the western and eastern boundaries. Buildings are located outside the investigation area to the north and are expected to be associated with the orcharding activities. No buildings are identifiable in the investigation area. Orcharding areas are located to the north and east of the investigation area.

The topographic map for the area is based on 1982 aerial photography with field revision in 1987. The site is depicted as an orchard. The same land-use is depicted to the north and east of the site. No buildings are located on Lot 40.

The 2008 aerial photographs depicts the site as an agricultural area. No orchard trees are visible. Residential development has begun on land to the east. Waratah Sporting Fields are located to the north.

No pesticide mixing areas, sheep dips or contaminating industrial activities are known to have been located on Lot 40 from the site inspection and site history.

4.6 Buildings and infrastructure

No buildings were located on the site on the day of inspection. The eastern, southern and western boundaries were fenced. A gravel residential driveway has been formed along the eastern boundary.

4.7 Chemicals associated with site use

Pesticides are commonly used in agricultural production and many are known to be persistent in the soil. The following is a checklist of contaminants and their expected likely use and persistence as determined from a review of the NSW *Agricultural Gazette* and other publications. Any pesticides are expected to have been applied evenly over the site. No pesticide storage or mixing areas were identified.

No biosolids are known to have been applied on the site. Heavy metals other than those applied in pesticides are unlikely to be present in the soil. No “hot-spot” areas are located in the investigation area.

Chemicals associated with orchard activities may have been previously applied to the site.

Herbicides and fungicides would have been applied in general farm management and these are not persistent in the soil.

Location/source	*Chemical/contaminant*	*Likely use/ occurrence*	*Persistence in soil*
Horticultural, orchard, and pasture pesticide checklist	Arsenic	Possible	High
	Lead	Possible	High
	Copper	Possible	High
	Mercury	Possible	High
	Organochlorines (DDT, dieldrin etc.)	Possible	High
	Organophosphates (chlorpyrifos, malathion)	Possible	Moderate
	Organic fungicides	No	Low
	Organic miticides	No	Low
	Herbicides	No	Low
Industrial & mining checklist	Heavy metals	No	High
Buildings	Not applicable		

4.8 Relevant complaint history
Nil

4.9 Contaminated site register
The site is not listed on the NSW DECCW register of contaminated sites.

4.10 Previous investigations
None known

4.11 Neighbouring land-use
North – Grazing
South – Farrell Road, vacant, Northern Distributor Road
East – Residential
West – Telopea Way, vacant (undergoing commercial development)

Neighbouring land-uses are not expected to have resulted in contamination of the site.

4.12 Integrity assessment
The site history was obtained from a site inspection and history review. The information is consistent with the current site condition and to the best of the assessor's knowledge is accurate.

5. Site condition and environment

5.1 Vegetation

Vegetation in the field consisted of pasture grasses and broadleaved weeds including plantain, Paterson's curse, flatweed, blackberry and fleabane.

The windbreak consists of mature radiata pines, privet and gravel driveway. Understorey vegetation in the driveway land-use unit was sparse due to dense shading resulting from the windbreak.

A radiata pine windbreak is located along the western boundary of the site.

5.2 Topography

The site consists of a very gently inclined mid-slope with an inclination of approximately 2% and a predominantly southerly aspect.

5.3 Soils and geology

The site is within the North Orange Soil Landscape (Kovac *et al.* 1990). The landscape is characterised by red earths on upper slopes and shallow lithosols on crests and sideslopes. Yellow earths appear on lower slopes with brown solodic and yellow solodic soils in drainage depressions.

No erosion was identified on the site.

The geological unit of the site is Molong Geanticline, northern province of the Angullong Tuff and part of the Links Andesite. Parent rock is medium to soft metasediments including slates, phyllites and siltstones on the Orange Shale Beds, which are largely derived from andesitic volcanic; welded tuffs of intermediate composition, agglomerates, conglomerates and andesitic volcanic. Parent material is *in situ* and colluvial-alluvial materials derived from the parent rock.

5.4 Surface water and groundwater

No permanent or intermittent watercourses or dams are located within the site. Surface water within the site is expected to flow to the south and into the Orange stormwater system.

No bores are known to be located on the site. A search of the NSW Natural Resource Atlas identified two bores located within 200m of the site. One bore is located approximately 150m north west and the second is located approximately 150m north east of the site. The bores are licensed for domestic and stock use. Water bearing zones are from 18m in andesite and basalt and standing water levels at the time of drilling was from 14m.

5.5 Evidence of contamination checklist

Site layout showing industrial processes	None present
Sewer and service plans	None known
Manufacturing processes	None known
Underground tanks	None known
Product spills and loss history	None known, no pesticide mixing or storage areas in the investigation area.

Discharges to land, water and air	None known
Disposal locations, presence of drums, wastes and fill materials	Nil
Soil staining	Nil
Visible signs of plant stress, bare areas	Nil
Odours	Nil
Ruins	Nil
Other	-

6. Sampling analysis plan and sampling methodology

6.1 Sampling strategy

6.1.1 Sampling design

A systematic sampling pattern was adopted to assess the potential contamination. The field land-use unit has been managed as part of a single horticultural area and is expected to have been treated similarly with pesticides applied over the area as a whole.

The driveway land-use unit is fenced off from the field. The use of agricultural pesticides over the driveway area in the past is expected to be low. Chemical drift may have impacted on the site.

6.1.2 Sampling locations

Twenty locations across the site were sampled on 21 March 2011 on an approximate 20 metre grid. The sampling locations are described in Figure 2.

6.1.3 Sampling density

The sampling density was 20 locations in 0.8427 ha (equivalent to 24 locations/ha). The sampling density can detect a potential hot spot with a diameter of 24m at a 95% level of confidence. Uniform management practices have been undertaken on the site and the soil sampling and laboratory analysis is considered indicative of the site as a whole.

6.1.4 Sampling depth

Persistent pesticides are generally immobile in the soil and unlikely to be leached from the loam topsoil. Any pesticides present are expected to be contained in the 0-100mm soil layer which was the target sampling depth as soil disturbance has not occurred.

6.2 Analytes

The composite soil samples were evaluated for arsenic, cadmium, chromium, copper, lead, nickel, zinc, mercury and organochlorine pesticides (OCP), as these were identified as the pesticides possibly present as a result of past agricultural activities (Table 1). A list of the specific OCP is given in the laboratory report (Appendix 2).

6.3 Sampling methods

Soil samples were taken using a 12mm hand driven soil corer. Soil was taken at each individual sampling location below the vegetated and detrital layer. The soil was transferred to a stainless steel

bucket, mixed and 500g transferred to a solvent rinsed glass jar with a Teflon lid. Combining 4 discrete samples made a composite sample for chemical analysis.

Tools were decontaminated between sampling locations to prevent cross contamination by: brushing to remove caked or encrusted material, washing in detergent and tap water and allowing to air dry or using a clean towel.

Table 1. Schedule of composite samples and analyses

Sample ID	Location	Discrete sample ID (Figure 2)	Analysis undertaken
J1	Driveway	11, 12, 13, 14	Arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), nickel (Ni), zinc (Zn), mercury (Hg), organochlorine pesticides (OCP)
J2	Field	21, 22, 23, 24	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP
J3	Field	31, 32, 33, 34	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP
J4	Field	41, 42, 43, 44	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP
J5	Field	51, 52, 53, 54	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP

7. Quality assurance and quality control

7.1 Sampling design

The sampling program is intended to provide data as to the presence and levels of contaminants.

Twenty discrete soil samples were collected on a systematic pattern over the site on an approximate grid pattern of 20 metres. This sampling density will enable the detection of an area with an elevated concentration on a radius of 12 metres with a 95% confidence level. The number and location of samples taken is expected to provide an adequate assurance that the soil samples are representative of the site as a whole.

The number of sampling locations is greater than the recommended density in the DECCW sampling guidelines of nineteen samples for a 8000m^2 site.

7.2 Field

The collection of samples was undertaken in accordance with accepted standard protocols (NEPC 1999). Composite sampling was undertaken to reduce the cost of chemical analysis. Combining equal amounts from four discrete samples created the composite sample. A composite sample represents the average concentration of the sub-sample. The rules for composite sampling were observed (EPA 1995). The composite soil sample was analysed for arsenic, cadmium, chromium, copper, lead, nickel, zinc, mercury and OCP.

One intra laboratory duplicate sample was analysed to evaluate sample integrity and data comparability. The frequency of field duplicates is greater than the NEPM (1999) recommendation of 5%. No field blank, rinsate, trip blank or matrix spikes were submitted for analysis. Some samples from all batches did not contain contaminants which confirm the absence of cross contamination during transport and storage.

Sampling equipment was decontaminated between each sampling event. The appropriate storage conditions and duration were observed between sampling and analysis. A chain of custody form accompanied the samples to the laboratory (Appendix 3).

A single sampler and standard methods were used to collect the samples. Soil collected was a fresh sample from the hand shovel. After collection the samples were immediately placed in new glass sampling jars and placed in a cooler. The field sampling log is presented in Appendix 4.

7.3 Laboratory

Chemical analysis was conducted by ALS Laboratories, Sydney, which is NATA accredited for the tests undertaken. The laboratories have quality assurance and quality control programs in place, which include internal replication and analysis of spike samples and recoveries. The quality assurance and quality control report is presented together with the laboratory report as Appendix 2.

7.4 Data evaluation

The data quality indicators (DQI) and quality assurance quality control (QA/QC) report is presented in Appendix 1. The field and laboratory QA/QC report indicates the data variability is within acceptable industry limits. The data is considered representative and usable for the purposes of the investigation.

8. Assessment criteria

The laboratory results were assessed against the proposed land-use of residential and commercial. The health-based investigation levels of contaminants in the soil for residential sites, for the substances for which criteria are available, are listed in Table 2, as recommended in the NEPC (1999) and by the DEC (2006).

The investigation threshold was adjusted to enable the detection of an individual location being diluted in the composting process (EPA 1995). The analyte result was divided against the number of discrete samples making up the composite. This is based on a worst-case scenario in which one sample has a high concentration whilst other discrete samples have zero concentration. This is a conservative approach.

Table 2. Adopted land-use thresholds for metals and OCP (mg/kg)

	Residential threshold (HILF A) (DEC 2006)		Commercial threshold (HILF F) (DEC 2006)	
Analyte	**Discrete samples**	**Composite samples**	**Discrete samples**	**Composite samples**
Arsenic	100	25	500	125
Cadmium	20	5	100	25
Chromium	120,000	30,000	600,000	150,000
Copper	1,000	250	5,000	1,250
Lead	300	75	1,500	375
Nickel	600	150	3,000	750
Zinc	7,000	1,750	35,000	8,750
Mercury	15	3.75	75	18.75
OCP	-	-	-	-
DD's	200	50	1,000	250

9. Results and discussion

The field contained pasture grasses and weeds consisting of Paterson's curse, flatweed, love grass, plantain, blackberry, thistle and fleabane. Understorey vegetation in the driveway was sparse as a result of shading provided by a radiata pine windbreak. A radiata pine windbreak was also located along the western boundary of the site.

No bare areas, soil staining or evidence of contamination was detected on the site.

The levels of all substances analysed in the soil samples (Table 3) were **below** the residential and commercial land-use threshold (DEC 2006).

Table 3. Analytical results and threshold concentrations (mg/kg)

Sample ID	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury	Total OCPs	DD's
J1	8	ND	66	45	18	17	39	ND	ND	ND
J2	7	ND	112	36	18	7	29	0.5	0.83	0.83
J3	ND	ND	85	26	14	8	23	0.4	0.52	0.52
J4	ND	ND	55	20	14	4	15	0.5	0.49	0.49
J5	ND	ND	44	20	12	4	20	0.8	1.46	1.46
Residential thresholds (DEC 2006)										
Discrete	*100*	*20*	*120,000*	*1000*	*300*	*600*	*7,000*	*15*	-	*200*
Composite	*25*	*5*	*30,000*	*250*	*82*	*150*	*1,750*	*3.75*	-	*50*
Commercial thresholds (DEC 2006)										
Discrete	*500*	*100*	*600,000*	*5,000*	*1,500*	*3,000*	*35,000*	*75*	-	*1,000*
Composite	*125*	*25*	*150,000*	*1,250*	*375*	*750*	*8,750*	*18.75*	-	*200*

ND = not detected at the detection limit.

10. Site characterisation

10.1 Environmental contamination

No soil contamination was detected.

10.2 Chemical degradation production

Not applicable as no contamination was detected.

10.3 Exposed population

Not applicable as no contamination was detected.

11. Conclusions and recommendations

11.1 Summary

An inspection of the site (Lot 40) was made on 21 March 2011. The site is located on the northern fringe of the City of Orange and is surrounded by land undergoing residential development. The site has an area of 8,427m^2.

The site contains two land-use units. The majority of the site is a field and was previously used as pome fruit orchard. Agricultural management activities are expected to be uniform over the field. The use of agricultural pesticides over the field in the past is expected and may have included persistent pesticides and herbicides.

The second land-use unit is a driveway along the eastern boundary. The driveway is gravel formed and contains a vegetated windbreak. Past use of agricultural pesticides over this area is expected to be low.

There is no evidence of sheep dips, mixing sheds or contaminating industrial activities on the site from the review of site history or site walkover.

The contamination status of the site was assessed from a soil sampling and laboratory analysis program. Twenty discrete soil samples were collected over the site. Composite soil samples were analysed for arsenic, cadmium, chromium, copper, lead, nickel, zinc, mercury and organochlorine pesticides (OCP).

The soil sampling program did not detect elevated levels of the analysed metals or OCP. The levels of all substances evaluated were below the DECCW investigation threshold for residential land-use with access to soil and commercial land-use. In conclusion, no contamination was found.

11.2 Assumptions in reaching the conclusions

It is assumed the sampling sites are representative of the investigation area. An accurate history has been obtained and typical past farming practices were adopted.

11.3 Extent of uncertainties

The analytical data relate only to the locations sampled. Soil conditions can vary both laterally and vertically and it cannot be excluded that unidentified contaminants may be present. The sampling density was designed to detect a 'hot spot' on the site within a radius of approximately 12 metres and with a 95% level of confidence.

11.4 Suitability for proposed use of the site

The site is suitable for residential and commercial land-use.

11.5 Limitations and constraints on the use of the site

No constraints are recommended.

11.6 Recommendation for further work

Nil

12. Report limitations and intellectual property

This report has been prepared for the use of the client to achieve the objectives given the clients requirements. The level of confidence of the conclusion reached is governed by the scope of the investigation and the availability and quality of existing data. Where limitations or uncertainties are known, they are identified in the report. No liability can be accepted for failure to identify conditions or issues which arise in the future and which could not reasonably have been predicted using the scope of the investigation and the information obtained.

The investigation identifies the actual subsurface conditions only at those points where samples are taken, when they are taken. Data derived through sampling and subsequent laboratory testing is interpreted by geologists, engineers or scientists who then render an opinion about overall subsurface conditions, the nature and extent of the contamination, its likely impact on the proposed development and appropriate remediation measures. Actual conditions may differ from those inferred to exist, because no professional, no matter how well qualified, and no sub-surface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock or time. The actual interface between materials may be far more gradual or abrupt than a report indicates. Actual conditions in areas not sampled may differ from predictions. It is thus important to understand the limitations of the investigation and recognise that we are not responsible for these limitations.

13. References

CMA (1989) *Orange Topographic Map 1:25,000* (Central Mapping Authority of New South Wales, Bathurst)

EPA (1995) *Contaminated sites: Sampling Design Guidelines* (NSW Environment Protection Authority, Chatswood)

DEC (2006) *Contaminated Sites: Guidelines for the NSW Site Auditors Scheme* (NSW Environment Protection Authority, Chatswood)

Kovac M, Murphy BW and Lawrie JA (1990) *Soil Landscapes of the Bathurst 1:250 000 Sheet* (Soil Conservation Service of NSW, Sydney)

NEPC (1999) *National Environment Protection (Assessment of Site Contamination) Measure 1999* (National Environment Protection Council Service Corporation, Adelaide)

The New South Wales Department of Agriculture (1971) *Orchard Spray Calender Vol. 11: Tablelands, Slopes and Coastal Highlands* (United Farmers and Woolgrowers' Association of N.S.W.)

The New South Wales Department of Agriculture (various years) *The Agricultural Gazette of New South Wales* (Department of Agriculture, Sydney)

Figures

North

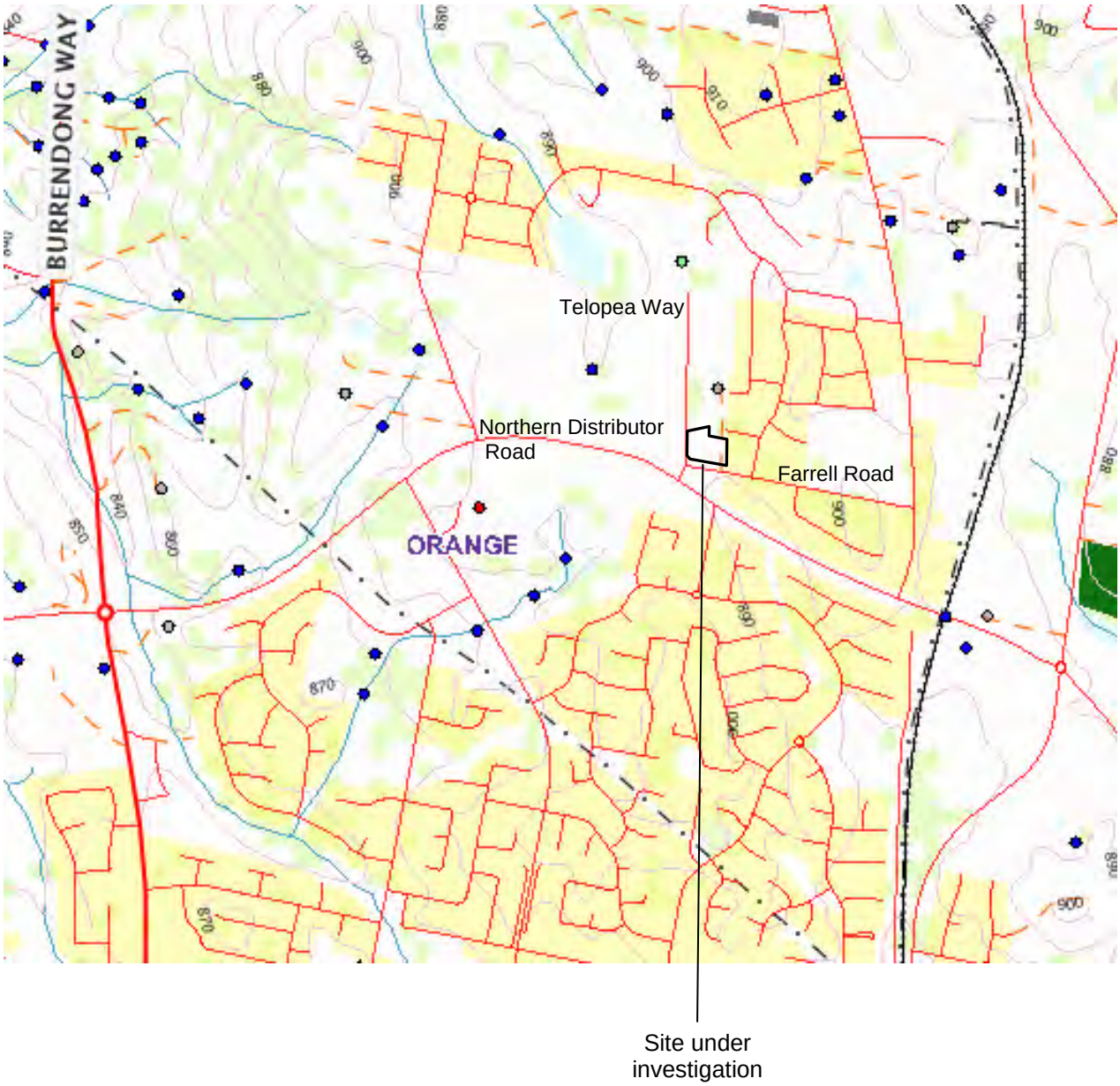
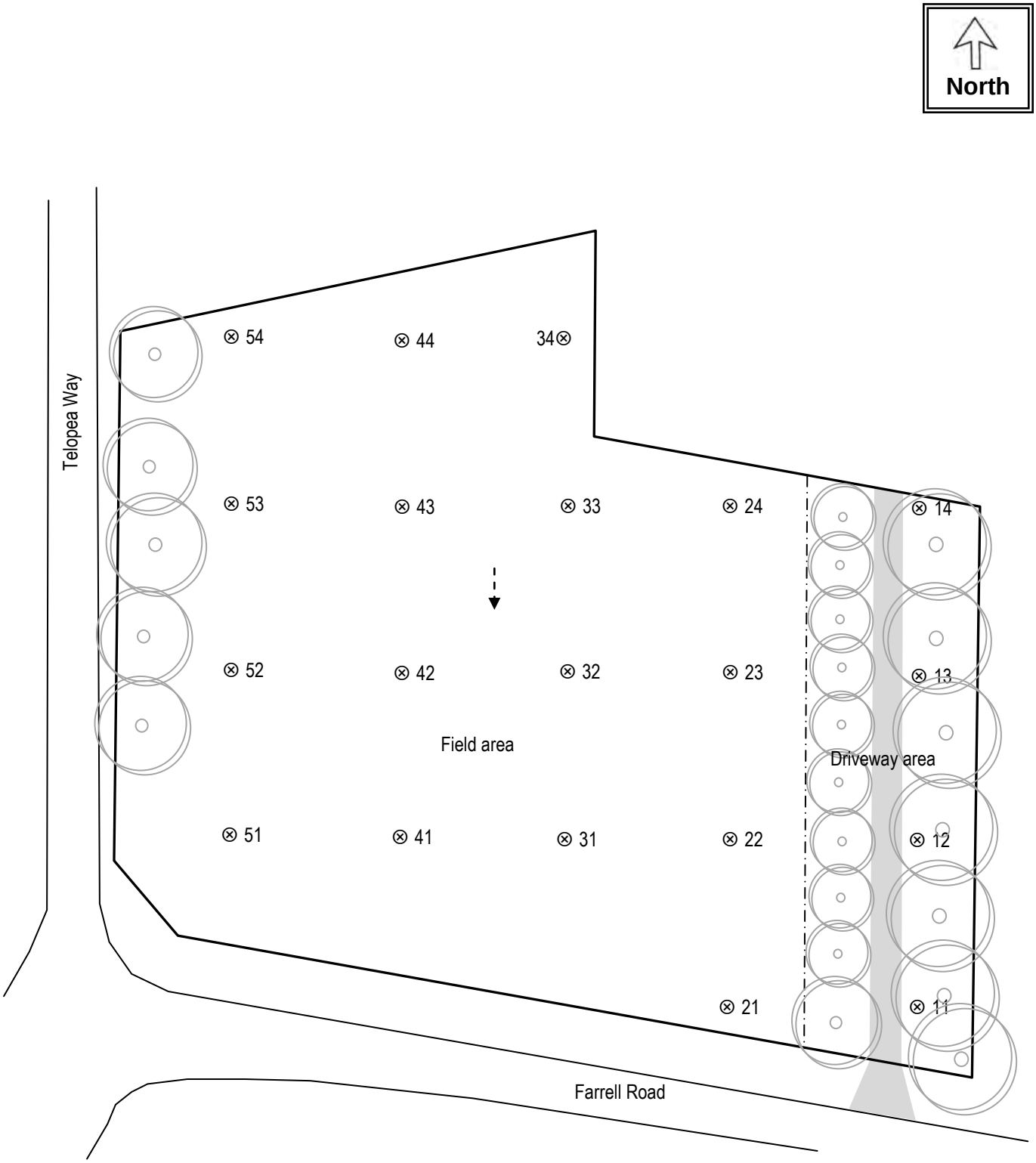


Figure 1: Locality map		
Lot 40 in the proposed subdivision of Lot 72 DP851029 Farrell Road, Orange NSW		
	Envirowest Consulting Pty Ltd	
Job – R11094c	Drawn by: LD	Date: 28/3/2011



Legend

- ⊗ Soil sampling location
- Tree
- Slope
- Lot boundary
- Existing fence
- Driveway

Approximate Scale 1: 700

0 7 14 28m

Figure 2. Site plan and soil sampling locations		
Lot 40 in the proposed subdivision of Lot 72 DP851029 Farrell Road, Orange NSW		
	Envirowest Consulting Pty Ltd	
Job – R11094c	Drawn by: LD	Date: 28/3/2011

Legend

Lot boundary

Approximate Scale 1: 700

0 7 14 28m

Figure 3. Aerial photograph of the site (2008)		
Lot 40 in the proposed subdivision of Lot 72 DP851029 Farrell Road, Orange NSW		
	Envirowest Consulting Pty Ltd	
Job – R11094c	Drawn by: LD	Date: 28/3/2011

Figure 4. Photograph of the site

Photograph taken looking north over driveway located in the eastern section of the site

Photograph taken looking north over site

Appendices

Appendix 1. Sample analysis, quality assurance and quality control (QA/QC) report
Appendix 2. Soil analysis results – ALS report number ES1105922
Appendix 3. Chain of custody form
Appendix 4. Sampling logs

Appendix 1. Sample analysis, quality assurance and quality control (QAQC) report

1. Data quality indicators (DQI) requirements

1.1 Completeness

A measure of the amount of usable data for a data collection activity. Greater than 95% of the data must be reliable based on the quality objectives. Where greater than two quality objectives have less reliability than the acceptance criterion the data may be considered with uncertainty.

1.1.1 Field

Consideration	Requirement
Locations and depths to be sampled	Described in the sampling plan. The acceptance criterion is 95% data retrieved compared with proposed. Acceptance criterion is 100% in crucial areas.
SOP appropriate and compiled	Described in the sampling plan.
Experienced sampler	Sampler or supervisor
Documentation correct	Sampling log and chain of custody completed

1.1.2 Laboratory

Consideration	Requirement
Samples analysed	Number according to sampling and quality plan
Analytes	Number according to sampling and quality plan
Methods	EPA or other recognised methods with suitable PQL
Sample documentation	Complete including chain of custody and sample description
Sample holding times	Metals 6 months, OCP, PAH, TPH, PCB 14 days

1.2 Comparability

The confidence that data may be considered to be equivalent for each sampling and analytical event. The data must show little or no inconsistencies with results and field observations.

1.2.1 Field

Consideration	Requirement
SOP	Same sampling procedures to be used
Experienced sampler	Sampler or supervisor
Climatic conditions	Described as may influence results
Samples collected	Sample medium, size, preparation, storage, transport

1.2.2 Laboratory

Consideration	Requirement
Analytical methods	Same methods, approved methods
PQL	Same
Same laboratory	Justify if different
Same units	Justify if different

1.3 Representativeness

The confidence (expressed qualitatively) that data are representative of each media present on the site.

1.3.1 Field

Consideration	Requirement
Appropriate media sampled	Sampled according to sampling and quality plan or in accordance with the EPA (1995) sampling guidelines.
All media identified	Sampling media identified in the sampling and quality plan. Where surface water bodies on the site sampled.

1.3.2 Laboratory

Consideration	Requirement
Samples analysed	Blanks

1.4 Precision

A quantitative measure of the variability (or reproduced of the data). Is measured by standard deviation or relative percent difference (RPD). A RPD analysis is calculated and compared to the practical quantitation limit (PQL) or absolute difference AD.

- Levels greater than 10 times the PQL the RPD is 50%
- Levels between 5 and 10 times the PQL the RPD is 75%
- Levels between 2 and 5 times the PQL the RPD is 100%
- Levels less than 2 times the PQL, the AD is less than 2.5 times the PQL

Data not conforming to the acceptance criterion will be examined for determination of suitability for the purpose of site characterisation.

1.4.1 Field

Consideration	Requirement
Field duplicates	Frequency of 5%, results to be within RPD or discussion required indicate the appropriateness of SOP

1.4.2 Laboratory

Consideration	Requirement
Laboratory and inter lab duplicates	Frequency of 5%, results to be within RPD or discussion required. Inter laboratory duplicates will be one sample per batch.
Field duplicates	Frequency of 5%, results to be within RPD or discussion required
Laboratory prepared volatile trip spikes	One per sampling batch, results to be within RPD or discussion required

1.5 Accuracy

A quantitative measure of the closeness of the reported data to the true value.

1.5.1 Field

Consideration	Requirement
SOP	Complied
Inter laboratory duplicates	Frequency of 5%. Analysis criterion 60% RPD for levels greater than 10 times the PQL 85% RPD for levels between 5 to 10 times the PQL 100% RPD at levels between 2 to 5 times the PQL Absolute difference, 3.5 times the PQL where levels are, 2 times PQL

1.5.2 Laboratory

Recovery data (surrogates, laboratory control samples and matrix spikes) data subject to the following control limits:

- 60 to 140% acceptable data
- 20-60% discussion required, may be considered acceptable
- 10-20% data should considered as estimates
- 10% data should be rejected

Consideration	Requirement
Field blanks	Frequency of 5%, <5 times the PQL, PQL may be adjusted
Rinsate blanks	Frequency of 5%, <5 times the PQL, PQL may be adjusted
Method blanks	Frequency of 5%, <5 times the PQL, PQL may be adjusted
Matrix spikes	Frequency of 5%, results to be within +/-40% or discussion required
Matrix duplicates	Sample injected with a known concentration of contaminants with tested. Frequency of 5%, results to be within +/-40% or discussion required
Surrogate spikes	QC monitoring spikes to be added to samples at the extraction process in the laboratory where applicable. Surrogates are closely related to the organic target analyte and not normally found in the natural environment. Frequency of 5%, results to be within +/-40% or discussion required
Laboratory control samples	Externally prepared reference material containing representative analytes under investigation. These will be undertaken at one per batch. It s to be within +/-40% or discussion required
Laboratory prepared spikes	Frequency of 5%, results to be within +/-40% or discussion required

2. Laboratory analysis summary

One analysis batch was undertaken over the preliminary investigation program.

The samples were analysed at the laboratories of ALS, Smithfield, NSW which is National Association of Testing Authorities (NATA) accredited for the tests undertaken. The analyses undertaken, number of samples tested and methods are presented in the following tables:

Laboratory analysis schedule

Sample id.	Number of samples	Duplicate	Analyses	Date collected	Substrate	Laboratory report
J1, J2, J3, J4, J5	5	1	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	21/3/2011	Soil	ES1105922

Analytical methods

Analyte	Extraction	Laboratory methods
Metals	USEPA 200.2 Mod	APHA USEPA SW846-6010
Mercury	USEPA 200.2 Mod	APHA 3112
TPH(C6-C9)	USPEA SW846-5030A	USPEA SW 846-8260B
TPH(C10-C36)	Tumbler extraction of solids	USEPA SW 846-8270B
PCB	Tumbler extraction of solids	USEPA SW 846-8270B
OC Pesticides	Tumbler extraction of solids	USEPA SW 846-8270B
BTEX	Tumbler extraction of solids	USEPA SW 846-8260B

3. Field quality assurance and quality control

One field duplicate soil sample was collected. The frequency was greater than the recommended frequency of 5%. The following table outlines the sample collected and differences in replicate analyses and acceptance limits for replicate analyses.

Field duplicate frequency

Sample id.	Number of samples	Duplicate	Frequency (%)	Date collected	Substrate	Laboratory report
J1, J2, J3, J4, J5	5	1	20	21/3/2011	Soil	ES1105922

Relative percent differences between field duplicates

Laboratory report	Duplicate sample comparison	Analyte	Difference in replicate analyses (%)	Acceptance limits (%)
ES1105922	J2, JA	Arsenic	33	40% or <5 times the PQL
		Cadmium	0	40% or <5 times the PQL
		Chromium	27	40% or <5 times the PQL
		Copper	18	40% or <5 times the PQL
		Lead	25	40% or <5 times the PQL
		Nickel	15	40% or <5 times the PQL
		Zinc	11	40% or <5 times the PQL
		Mercury	18	40% or <5 times the PQL
		OCP	29	40% or <5 times the PQL

No trip blanks or spikes were submitted for analysis. This is not considered to create significant uncertainty in the analysis results because of the following rationale:

- The fieldwork was completed within a short time period and consistent methods were used for soil sampling.
- Soil samples were placed in insulated cooled containers after sampling to ensure preservation during transport and storage.
- The samples were placed in single use jars using clean sampling tools and disposable gloves from material not in contact with other samples. This reduces the likelihood of cross contamination.
- Samples in the analysis batch contain analytes below the level of detection. It is considered unlikely that contamination has occurred as a result of transport and handling.

4. Laboratory quality assurance and quality control

Sample holding times are recommended in NEPM (1999). The time between collection and extraction for all samples was less than the criteria listed below:

Analyte	Maximum holding time
Metals, cyanide	6 months
OCP, TPH, PCB, BTEX	14 days

The laboratory interpretative reports are presented with individual laboratory report. Assessment is made of holding time, frequency of control samples and quality control samples. No significant outliers or non-conformities were identified. The laboratory report also contains a detailed description of preparation methods and analytical methods.

The results, quality report, interpretative report and chain of custody are presented in the attached appendices. The quality report contains the laboratory duplicates, spikes, laboratory control samples, blanks and where appropriate matrix spike recovery (surrogate).

5. Data quality indicators (DQI) analysis

5.1 Completeness

A measure of the amount of usable data for a data collection activity (total to be greater than 95%).

The data set was found to be complete based on the scope of work. No critical areas of contamination were omitted from the data set.

5.1.1 Field

Consideration	Accepted	Comment
Locations to be sampled	Yes	In accordance with sampling methodology, described in the report. Sampling locations described in figures.
Depth to be sampled	Yes	In accordance with sampling methodology
SOP appropriate and compiled	Yes	In accordance with sampling methodology Sampled with a 12mm hand driven soil corer into lab prepared containers, decontamination between samples, latex gloves worn by sampler
Experienced sampler	Yes	Same soil sampler, environmental scientist
Documentation correct	Yes	Sampling log completed Chain of custody completed

5.1.2 Laboratory

Consideration	Accepted	Comment
Samples analysed	Yes	All critical samples analysed in accordance with chain of custody and analysis plan
Analytes	Yes	All analytes in accordance with chain of custody and analysis plan
Methods	Yes	Analysed in NATA accredited laboratory with recognised methods and suitable PQL
Sample documentation	Yes	Completed including chain of custody and sample results and quality results report for each batch
Sample holding times	Yes	Metals less than 6 months. OCP, TPH, PCB, BTEX less than 14 days

5.2 Comparability

The confidence that data may be considered to be equivalent for each sampling and analytical event.

The data sets were found to be acceptable.

5.2.1 Field

Consideration	Accepted	Comment
SOP	Yes	Same sampling procedures used and sampled on one date
Experienced sampler	Yes	Environmental scientist
Climatic conditions	Yes	Sampling log
Samples collected	Yes	Suitable size, storage and transport

5.2.2 Laboratory

Consideration	Accepted	Comment
Analytical methods	Yes	Same methods all samples, in accordance with NEPM(1999) or USEPA
PQL	Yes	Suitable for analytes
Same laboratory	Yes	ALS Environmental is NATA accredited for the test
Same units	Yes	-

5.3 Representativeness

The confidence (expressed qualitatively) that data are representative of each media present on the site.

The data sets were found to be acceptable.

5.3.1 Field

Consideration	Accepted	Comment
Appropriate media sampled	Yes	Sampled according to sampling and quality plan

All media identified	Yes	Soil sampling media identified in the sampling and quality plan

5.3.2 Laboratory

Consideration	Accepted	Comment
Samples analysed	Yes	Undertaken in NATA accredited laboratory. No blanks analysed. It is considered unlikely that contamination has occurred as a result of transport and handling.

5.4 Precision

A quantitative measure of the variability (or reproduced of the data).

The data sets were found to be acceptable.

5.4.1 Field

Consideration	Accepted	Comment
SOP	Yes	Complied
Field duplicates	Yes	Greater than 5%

5.4.2 Laboratory

Consideration	Accepted	Comment
Laboratory and inter lab duplicates	Yes	Frequency of 5%, results to be within +/-40% or discussion required
Field duplicates	Yes	Results within +/-40%
Laboratory prepared volatile trip spikes	N/A	Volatiles were not analysed

5.5 Accuracy

A quantitative measure of the closeness of the reported data to the true value.

The data sets were found to be acceptable.

5.5.1 Field

Consideration	Accepted	Comment
SOP	Yes	Complied
Field blanks	No	Frequency of 5%, <5 times the PQL, PQL may be adjusted
Rinsate blanks	No	Frequency of 5%, <5 times the PQL, PQL may be adjusted

5.5.2 Laboratory

Consideration	Accepted	Comment
Method blanks	Yes	Frequency of 5%, <5 times the PQL, PQL may be adjusted
Matrix spikes	Yes	Frequency of 5%, <5 times the PQL, PQL may be adjusted
Matrix duplicates	Yes	Frequency of 5%, <5 times the PQL, PQL may be adjusted.
Surrogate spikes	Yes	Frequency of 5%, results to be within +/-40% or discussion required
Laboratory control samples	Yes	Frequency of 5%, results to be within +/-40% or discussion required
Laboratory prepared spikes	Yes	Frequency of 5%, results to be within +/-40% or discussion required

No trip blanks, field spikes or sample rinsates were submitted for analysis. This is not considered to create significant uncertainty in the analysis results because of the following rationale:

- The fieldwork methods used for soil sampling were consistent throughout the project with all in situ samples collected from material which had not been subject to exposure.

- The fieldwork was completed within a short time period and consistent methods were used for soil sampling.

- Soil samples were placed in insulated cooled containers as quickly as possible, with the containers filled to minimize headspace. The sample containers were sealed immediately after the sample was collected and chilled in an esky containing ice.

- The samples were stored in a refrigerator and transported with ice bricks to ensure preservation during transport and storage.

- The samples were placed in single use jars using clean sampling tools and disposable gloves from material not in contact with other samples. This reduces the likelihood of cross contamination.

- Samples in the analysis batches contained analytes below the level of detection. It is considered unlikely that contamination has occurred as a result of transport and handling.

- The target contaminates are not volatile.

6. Conclusion

All media appropriate to the objectives of this investigation have been adequately analysed and no area of significant uncertainty exist.

It is concluded the data is usable for the purposes of the investigation.

Quality control and assurance is undertaken to ensure the representativeness and integrity of samples, and the accuracy and reliability of analysis results.

Appendix 2. Soil analysis results – ALS Laboratories report number ES1105922

CERTIFICATE OF ANALYSIS

Work Order	: **ES1105922**	Page	: 1 of 5
Client	: **ENVIROWEST CONSULTING**	Laboratory	: Environmental Division Sydney
Contact	: MS LEAH DESBOROUGH	Contact	: Client Services
Address	: PO BOX 9158 ORANGE NSW, AUSTRALIA 2800	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: leah@envirowest.net.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 63614954	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 63603960	Facsimile	: +61-2-8784 8500
Project	: 11094	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: 11094		
C-O-C number	: 11094	Date Samples Received	: 22-MAR-2011
Sampler	: LD	Issue Date	: 25-MAR-2011
Site	: 11094		
		No. of samples received	: 6
Quote number	: SY/287/10	No. of samples analysed	: 6

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Senior Organic Chemist	Sydney Organics
Nanthini Coilparampil	Senior Inorganic Chemist	Sydney Inorganics
Wisam.Marassa	Metals Coordinator	Sydney Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: SOIL				Client sample ID	J1	J2	J3	J4	J5
				Client sampling date / time	21-MAR-2011 15:00	21-MAR-2011 15:00	21-MAR-2011 15:00	21-MAR-2011 15:00	21-MAR-2011 15:00
Compound	CAS Number	LOR	Unit		ES1105922-001	ES1105922-002	ES1105922-003	ES1105922-004	ES1105922-005
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		16.5	20.6	19.1	21.5	22.9
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		8	7	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		66	112	85	55	44
Copper	7440-50-8	5	mg/kg		45	36	26	20	20
Lead	7439-92-1	5	mg/kg		18	18	14	14	12
Nickel	7440-02-0	2	mg/kg		17	7	8	4	4
Zinc	7440-66-6	5	mg/kg		39	29	23	15	20
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	0.5	0.4	0.5	0.8
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	0.78	0.52	0.49	1.30
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	0.05	<0.05	<0.05	0.16
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%		99.5	97.0	94.3	100	101
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%		61.1	104	98.9	109	111

Analytical Results

Sub-Matrix: SOIL				Client sample ID	JA	----	----	----	----
				Client sampling date / time	21-MAR-2011 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1105922-006	----	----	----	----
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**17.7**	----	----	----	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg		**85**	----	----	----	----
Copper	7440-50-8	5	mg/kg		**30**	----	----	----	----
Lead	7439-92-1	5	mg/kg		**14**	----	----	----	----
Nickel	7440-02-0	2	mg/kg		**6**	----	----	----	----
Zinc	7440-66-6	5	mg/kg		**26**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		**0.6**	----	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		**0.62**	----	----	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%		**93.5**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%		**104**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	19.5	167.0
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	22.7	163.5

QUALITY CONTROL REPORT

Work Order	: **ES1105922**	Page	: 1 of 6
Client	: **ENVIROWEST CONSULTING**	Laboratory	: Environmental Division Sydney
Contact	: MS LEAH DESBOROUGH	Contact	: Client Services
Address	: PO BOX 9158 ORANGE NSW, AUSTRALIA 2800	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: leah@envirowest.net.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 63614954	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 63603960	Facsimile	: +61-2-8784 8500
Project	: 11094	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: 11094		
C-O-C number	: 11094	Date Samples Received	: 22-MAR-2011
Sampler	: LD	Issue Date	: 25-MAR-2011
Order number	: 11094		
		No. of samples received	: 6
Quote number	: SY/287/10	No. of samples analysed	: 6

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Senior Organic Chemist	Sydney Organics
Nanthini Coilparampil	Senior Inorganic Chemist	Sydney Inorganics
Wisam.Marassa	Metals Coordinator	Sydney Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA055: Moisture Content (QC Lot: 1717161)									
ES1105881-019	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	15.7	19.0	19.0	0% - 50%
ES1105881-029	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	13.1	12.7	3.0	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 1717480)									
ES1105633-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	39	40	3.1	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	17	18	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	13	10	29.8	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	12	8	39.6	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	21	19	8.5	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	33	23	38.0	No Limit
ES1105922-003	J3	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	85	89	3.9	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	8	6	28.9	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	26	24	9.8	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	14	12	16.4	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	23	22	5.4	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1717481)									
ES1105633-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1105922-003	J3	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.4	0.4	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1717551)									
ES1105633-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1717551) - continued									
ES1105633-001	Anonymous	EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES1105922-006	JA	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	0.62	0.67	8.2	0% - 50%
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 1717480)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.11 mg/kg	116	70	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.76 mg/kg	104	83.3	111
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.93 mg/kg	108	89.2	117
EG005T: Copper	7440-50-8	5	mg/kg	<5	54.68 mg/kg	101	90.1	114
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.76 mg/kg	99.7	85.2	111
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.23 mg/kg	104	88.3	116
EG005T: Zinc	7440-66-6	5	mg/kg	<5	103.88 mg/kg	97.9	88.9	112
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1717481)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.4 mg/kg	81.5	67	118
EP068A: Organochlorine Pesticides (OC) (QCLot: 1717551)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	83.0	60.8	116
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	80.0	59.4	115
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	83.8	59.8	117
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	90.4	59.8	118
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	81.2	65.8	114
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	83.6	65.6	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	81.1	67	113
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	89.9	65.6	113
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	76.9	60.7	113
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	83.4	65.8	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	79.0	57.3	120
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	83.3	67.4	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	82.4	67.5	114
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	87.6	63	121
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.0	66.1	117
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	92.6	65.3	116
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	79.2	57.3	115
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	85.4	63.6	119
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	84.0	58.4	127
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	85.0	63.6	117
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	84.6	50.4	132

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 1717480)							
ES1105633-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	88.9	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	97.7	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	111	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	104	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	93.1	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	114	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	91.2	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1717481)							
ES1105633-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	86.6	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 1717551)							
ES1105633-001	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	96.3	75.65	110.44
		EP068: Heptachlor	76-44-8	0.5 mg/kg	96.8	72.2	106.71
		EP068: Aldrin	309-00-2	0.5 mg/kg	96.9	77.54	107.0
		EP068: Dieldrin	60-57-1	0.5 mg/kg	97.2	76.37	109.7
		EP068: Endrin	72-20-8	2 mg/kg	102	68.51	119.47
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	104	67.12	118.10

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **ES1105922**	Page	: 1 of 5
Client	: ENVIROWEST CONSULTING	Laboratory	: Environmental Division Sydney
Contact	: MS LEAH DESBOROUGH	Contact	: Client Services
Address	: PO BOX 9158 ORANGE NSW, AUSTRALIA 2800	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: leah@envirowest.net.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 63614954	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 63603960	Facsimile	: +61-2-8784 8500
Project	: 11094	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: 11094		
C-O-C number	: 11094	Date Samples Received	: 22-MAR-2011
Sampler	: LD	Issue Date	: 25-MAR-2011
Order number	: 11094		
		No. of samples received	: 6
Quote number	: SY/287/10	No. of samples analysed	: 6

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content							
Soil Glass Jar - Unpreserved							
J1, J2, J3, J4, J5, JA	**21-MAR-2011**	**----**	----	----	**22-MAR-2011**	04-APR-2011	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved							
J1, J2, J3, J4, J5, JA	**21-MAR-2011**	**22-MAR-2011**	17-SEP-2011	✓	**23-MAR-2011**	17-SEP-2011	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved							
J1, J2, J3, J4, J5, JA	**21-MAR-2011**	**22-MAR-2011**	18-APR-2011	✓	**23-MAR-2011**	18-APR-2011	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved							
J1, J2, J3, J4, J5, JA	**21-MAR-2011**	**22-MAR-2011**	04-APR-2011	✓	**23-MAR-2011**	01-MAY-2011	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	18	**11.1**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Pesticides by GCMS	EP068	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	18	**5.6**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Pesticides by GCMS	EP068	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	18	**5.6**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Pesticides by GCMS	EP068	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	18	**5.6**	**5.0**	✓	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2010 Draft) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)
Pesticides by GCMS	EP068	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (1999) Schedule B(3) (Method 504,505)

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

- **For all matrices, no Method Blank value outliers occur.**
- **For all matrices, no Duplicate outliers occur.**
- **For all matrices, no Laboratory Control outliers occur.**
- **For all matrices, no Matrix Spike outliers occur.**

Regular Sample Surrogates

- **For all regular sample matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- **No Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- **No Quality Control Sample Frequency Outliers exist.**

Appendix 3. Chain of custody form

Chain of Custody Form – Ref 11094

Ref: **11094**
Investigator: Envirowest Consulting
24 William Street
PO Box 8158
ORANGE NSW 2800
Telephone: (02) 6361 4954
Facsimile: (02) 6360 3960
Email: **leah@envirowest.net.au**
Contact Person: Leah Desborough

Laboratory: Australian Laboratory Services
277 Woodpark Road
SMITHFIELD NSW 2164

Quotation #: **SY/287/10**
Courier/CN:

	Sample ID	Container*	Sampling Date/Time	Sample matrix: Water	Soil	Sludge	Sample preservation: Cool	HNO3/ HCl	Unpre-served	Analysis: ALS Method Code S-2 As, Cd, Cr, Cu, Ni, Pb, Zn, Hg	EP068A OCP	
1	J1	A	21/3/2011		X		X		X	X	X	
2	J2	A	21/3/2011		X		X		X	X	X	
3	J3	A	21/3/2011		X		X		X	X	X	
4	J4	A	21/3/2011		X		X		X	X	X	
5	J5	A	21/3/2011		X		X		X	X	X	
6	JA	A	21/3/2011		X		X		X	X	X	

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples.

Sampler name: Leah Desborough
Date : 21/3/2011 Time:

Relinquished by: (print and signature) Leah Desborough Date 21/3/2011 Time 17:00

Received by: (print and signature) Dave Date 22/3/11 Time 1003

Please return completed form to Envirowest Consulting, *A = 200mL solvent rinsed glass jar with Teflon lined lid, B = 2x40mL vials solvent rinsed Teflon lined septum caps, C 1x500mL glass bottles , solvent rinsed, Teflon lined cap, D= 200mL plastic bottle with nitric acid.

Environmental Division
Sydney
Work Order
ES1105922

Telephone : +61-2-8784 8555

5922

Appendix 4. Sampling log

Sampling log

Client	Garfield Road Holding
Contact	
Job number	11094
Location	Lot 40 in the proposed subdivision of Lot 72 DP851029 Farrell Road, Orange
Date	21 March 2011
Investigator(s)	Leah Desborough
Weather conditions	Overcast and humid

Sample id	Matrix	Time	Analysis required	Observations/comments
J1	Soil		Arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), nickel (Ni), zinc (Zn), mercury (Hg) and organochlorine pesticides (OCP)	Composite consisting of 11, 12, 13, 14
J2	Soil		As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	Composite consisting of 21, 22, 23, 24
J3	Soil		As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	Composite consisting of 31, 32, 33, 34
J4	Soil		As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	Composite consisting of 41, 42, 43, 44
J5	Soil		As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	Composite consisting of 51, 52, 53, 54
JA	Soil		As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, OCP	Duplicate of J2

APPENDIX E
Table of S.117

Schedule of Consistency S117 Ministerial Directions

	NR: Not Relevant *C: Consistent* *JI: Justifiably Inconsistent*			
No.	**S.117 (2) Directions**	**NR**	**C**	**JI**
1.	**Employment & Resources**			
1.1	Business and Industrial Zones		√	
1.2	Rural Zones	√		
1.3	Mining, Petroleum Production and Extractive Industries	√		
1.4	Oyster Aquaculture	√		
2	**Environment & Heritage**			
2.1	Environmental Protection Zones	√		
2.2	Coastal Protection	√		
2.3	Heritage Conservation	√		
2.4	Recreation Vehicle Areas	√		
3	**Housing, Infrastructure and Urban Development**			
3.1	Residential Zones		√	
3.2	Caravan Parks and Manufactured Home Estates	√		
3.3	Home Occupations	√		
3.4	Integrating Land Use and Transport	√		
3.5	Development Near Licensed Aerodromes	√		
4	**Hazard and Risk**			
4.1	Acid Sulfate Soils	√		
4.2	Mine Subsidence and Unstable Land	√		

Schedule of Consistency S117 Ministerial Directions

	NR: Not Relevant *C: Consistent* *JI: Justifiably Inconsistent*			
No.	**S.117 (2) Directions**	**NR**	**C**	**JI**
4.3	Flood Prone Land	√		
4.4	Planning for Bushfire Protection	√		
5	**Regional Planning**			
5.1	Implementation of Regional Strategies	√		
5.2	Sydney Drinking Water Catchments	√		
5.3	Farmland of State and Regional Significance on the NSW Far North Coast	√		
5.4	Commercial and Retail Development along the Pacific Highway, North Coast	√		
5.5	Development in the vicinity of Ellalong, Paxton and Millfield (Cessnock LGA)	√		
5.6	Sydney to Canberra Corridor	√		
5.7	Central Coast	√		
5.8	Second Sydney Airport: Badgerys Creek	√		
6	**Local Plan Making**			
6.1	Approval and Referral Requirements	√		
6.2	Reserving Land for Public Purposes	√		
6.3	Site Specific Provisions		√	
7	**Metropolitan Planning**			
7.1	Implementation of the Metropolitan Strategy	√		

APPENDIX F
Table of SEPP's

Schedule of Consistency
State Environmental Planning Policies (including relevant Deemed SEPPs)

SEPP	Not Relevant	Justifiably Inconsistent	Consistent
SEPP No. 1 - Development Standards	√		
SEPP No. 2 - Minimum Standards for Residential Flat Development	√ - repealed		
SEPP No.4 - Development without Consent and Miscellaneous Complying Development	√		
SEPP No. 5 - Housing for Older People or People with Disability	√ - repealed		
SEPP No. 6 - Number of Storeys in a Building	√		
SEPP No. 7 - Port Kembla Coal Loader	√ - repealed Refer ISEPP		
SEPP No. 8 - Surplus Public Land	√ - repealed Refer ISEPP		
SEPP No. 9 - Group Homes	√ - repealed Refer ISEPP		
SEPP No. 10 - Retention of Low-Cost Rental Accommodation	√		
SEPP No. 11 - Traffic Generating Developments	√ - repealed Refer ISEPP		
SEPP No. 12 - Public Housing (Dwelling Houses)	√ - repealed		
SEPP No. 13 - Sydney Heliport	√ - repealed		
SEPP No. 14 - Coastal Wetlands	√		
SEPP No. 15 - Rural Land Sharing Communities	√		
SEPP No. 16 - Tertiary Institutions	√ - repealed Refer ISEPP		
SEPP No. 17 - Design of Building in Certain Business Centres	√ - did not proceed		
SEPP No. 18 - Public Housing	√ - did not proceed		
SEPP No. 19 - Bushland in Urban Areas			√
SEPP No. 20 - Minimum Standards for Residential Flat Development	√ - repealed		
SEPP No. 21 – Caravan Parks (formerly Movable Dwellings)	√		
SEPP No. 22 - Shops and Commercial Premises	√		
SEPP No. 23	Not allocated		
SEPP No. 24 - State Roads	√ - did not proceed		
SEPP No. 25 - Residential Allotment Sizes	√ - repealed		
SEPP No. 26 - Littoral Rainforests	√		
SEPP No. 27 - Prison Sites	√ - repealed Refer ISEPP		
SEPP No. 28 - Town Houses and Villa Houses	√ - repealed		
SEPP No. 29 - Western Sydney Recreation Area	√		
SEPP No. 30 - Intensive Agriculture	√		
SEPP No. 31 - Sydney (Kingsford Smith) Airport	√ - repealed Refer ISEPP		
SEPP No. 32 - Urban Consolidation (Redevelopment of Urban Land)	√		
SEPP No. 33 - Hazardous and Offensive Development	√		
SEPP No. 34 - Major Employment Generating Industrial Development	√ - repealed		
SEPP No. 35 - Maintenance Dredging of	√ - repealed		

Schedule of Consistency
State Environmental Planning Policies (including relevant Deemed SEPPs)

SEPP	Not Relevant	Justifiably Inconsistent	Consistent
Tidal Waterways	Refer ISEPP		
SEPP No. 36 - Manufactured Home Estates	√		
SEPP No. 37 - Continued Mines and Extractive Industries	√ - repealed		
SEPP No. 38 - Olympic Games and Related Development	√ - repealed		
SEPP No. 39 - Spit Island Bird Habitat	√		
SEPP No. 40 - Sewerage Works	√ - did not proceed		
SEPP No. 41 - Casino/Entertainment Complex	√		
SEPP No. 42 - Multiple Occupancy and Rural Land (Repeal)	√ - repealed		
SEPP No. 43 - New Southern Railway	√ - repealed Refer ISEPP		
SEPP No. 44 - Koala Habitat Protection			
SEPP No. 45 - Permissibility of Mining	√ - repealed		
SEPP No. 46 - Protection and Management of Native Vegetation	√ - repealed		
SEPP No. 47 - Moore Park Showground	√		
SEPP No. 48 - Major Putrescible Land fill Sites	√ - repealed Refer ISEPP		
SEPP No. 49 - Tourism Accommodation in Private Homes	Draft only		
SEPP No. 50 - Canal Estates	√		
SEPP No. 51 - Eastern Distributor	√ - repealed Refer ISEPP		
SEPP No. 52 - Farm Dams and Other Works in Land and Water Management Plan Areas	√		
SEPP No. 53 - Metropolitan Residential Development	√		
SEPP No. 54 - Northside Storage Tunnel	√ - repealed Refer ISEPP		
SEPP No. 55 - Remediation of Land			√
SEPP No. 56 - Sydney Harbour Foreshores and Tributaries	√		
SEPP No. 57	Not allocated		
SEPP No. 58 – Protecting Sydney's Water Supply	√ - repealed		
SEPP No. 59 - Central Western Sydney Economic and Employment Area	√		
SEPP No. 60 - Exempt and Complying Development			
SEPP No. 61 - Exempt and Complying Development for White Bay and Glebe Island Ports	√		
SEPP No. 62 - Sustainable Aquaculture	√		
SEPP No. 63 - Major Transport Projects	√ - repealed		
SEPP No. 64 - Advertising and Signage			
SEPP No. 65 - Design Quality of Residential Flat Development	√		
SEPP No. 67 - Macquarie Generation Industrial Development Strategy	√ - repealed Refer ISEPP		
SEPP No. 69 - Major Electricity Supply Projects	√ - repealed Refer ISEPP		
SEPP 70 - Affordable Housing (Revised Schemes)	√		
SEPP No. 71 - Coastal Protection	√		
SEPP No. 72 - Linear Telecommunications	√ - repealed		

Schedule of Consistency
State Environmental Planning Policies (including relevant Deemed SEPPs)

SEPP	Not Relevant	Justifiably Inconsistent	Consistent
Development – Broadband	Refer ISEPP		
SEPP No 73 – Kosciuszko Ski Resorts	√ - repealed		
SEPP No. 74 - Newcastle Port and Employment Lands	√ - repealed		
SEPP (Seniors Living) 2004	√		
SEPP (Building Sustainability Index: BASIX) 2004	√		
SEPP (ARTC Rail Infrastructure) 2004	√		
SEPP (Sydney Metropolitan Water Supply) 2004	√		
SEPP (Development on Kurnell Peninsula) 2005	√		
SEPP (Major Development) 2005			
SEPP (Sydney Region Growth Centres) 2006	√		
SEPP (Mining, Petroleum Production & Extractive Industries) 2007	√		
SEPP (Temporary Structures & Places of Public Entertainment) 2007	√		
SEPP (Infrastructure) 2007			√
SEPP (Rural Lands) 2008	√		
SEPP (Exempt and Complying Development Codes) 2008	√		
SEPP (Western Sydney Parklands) 2009	√		

APPENDIX G
Traffic Report

GARFIELD ROAD HOLDINGS PTY LTD

TRAFFIC REPORT FOR PROPOSED PETROL STATION AND FAST FOOD DEVELOPMENT, NORTH ORANGE

MARCH 2013

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1. INTRODUCTION

1.1. Colston Budd Hunt & Kafes Pty Ltd has been commissioned by Garfield Road Holdings Pty Ltd to prepare a report examining the traffic and parking implications of a planning proposal to rezone a site in North Orange to permit development of a service station and fast food outlet. The site is located on the north eastern corner of the intersection of Farrell Road and Telopea Way, as shown on Figure 1.

1.2. The traffic implications of the proposed service station and fast food outlet have been assessed through the following chapters:-

- Chapter 2 - describing the existing conditions; and
- Chapter 3 - assessing the transport implications of the proposed development.

2. EXISTING CONDITIONS

2.1. The site is located on vacant land on the north eastern corner of the intersection of Farrell Road and Telopea Way, as shown on Figure 1. Surrounding land use comprises rural land to the north, a new shopping centre to the west and residential development to the east and south.

2.2. The road network in the vicinity of the site includes the Northern Distributor Road, Telopea Way, Farrell Road, Diamond Drive and Anson Street. The Northern Distributor Road is south of the site and provides an alternative route for traffic bypassing the city centre as wells as local trips accessing surrounding development. It provides an undivided road with one traffic lane in each direction, with additional storage lanes at intersections for turning vehicles. The intersection of the Northern Distributor Road and Telopea Way is controlled by traffic signals.

2.3. Telopea Way is located adjacent to the western boundary of the site and provides an undivided road with one traffic lane and one parking lane in each direction clear of intersections. It provides access to the new shopping centre located on the western side of Telopea Way and to playing fields/sports club located at the northern end of the street. In conjunction with the development of the shopping centre, Telopea Way was upgraded, including the introduction of traffic signals at the intersection of the Northern Distributor Road and Telopea Way. In August 2012, the Northern Distributor Road was extended to connect onto the Mitchell Highway east of Orange.

2.4. Farrell Road is located along the southern boundary of the site. It provides an undivided road with one traffic lane in each direction and kerb side parking permitted clear of intersections within the residential area to the east. The intersection of Farrell Road and Telopea Way is a priority controlled T-intersection with Farrell Road the major road. The intersection of Farrell Road

and Telopea Way is located some 30 metres north of the Northern Distributor Road/Telopea Way intersection.

2.5. Diamond Drive is east of the site and provides a north-south traffic route through the adjacent residential area to the east and north of the site. It provides a two-way undivided road with one traffic lane and one parking lane in each direction, clear of intersections. The intersection of Diamond Drive and Farrell Road is a priority controlled T-intersection with Farrell Road the major road.

2.6. Anson Street is located south and provides access to the existing residential area located to the south of the Northern Distributor Road. It provides an undivided road with one traffic lane and one parking lane in each direction, clear of intersections. On-street parking is not permitted on Anson Street on approach to the Northern Distributor Road. The intersection of Anson Street and the Northern Distributor Road is a priority controlled T-intersection with the Northern Distributor Road the major road. A separate right turn bay (some 40 metres long) is provided on the Northern Distributor Road at the intersection.

2.7. In November 2012, Council undertook traffic counts on the Northern Distributor Road, Telopea Way and Farrell Road during the Friday afternoon and Saturday lunchtime peak periods. These traffic counts along with other traffic information have been used to establish existing traffic conditions in the vicinity of the site. The peak period traffic flows include traffic generated by the surrounding residential area, the shopping centre located on the western side of Telopea Way, the sports playing fields located to the north, through traffic along the Northern Distributor Road and other traffic generating developments in the area.

2.8. The traffic flows are set out on Figures 2 and 3 summarised in Table 2.1.

2.9. The results in Table 2.1 reveal that:-

- The Northern Distributor Road carried some 480 to 940 vehicles per hour two-way during the Friday afternoon and Saturday lunchtime peak periods. Traffic flows were highest west of Anson Street;

- Telopea Way carried some 800 to 850 vehicles per hour two-way during the Friday afternoon and some 650 to 700 vehicles per hour two-way during the Saturday lunchtime peak periods;

- Anson Street carried some 300 to 350 vehicles per hour two-way during the peak periods; and

- Farrell Road carried some 150 to 250 vehicles per hour two-way during the peak periods.

Table 2.1 : Existing Two-Way (Sum of Both Directions) Peak Hour Traffic Flows

Location	Friday Afternoon	Saturday Midday
Northern Distributor Road		
– east of Anson Street	675	480
– east of Telopea Way	880	705
– west of Telopea Way	940	680
Telopea Way		
- north Northern Distributor Road	830	665
- north of Farrell Road	805	655
Anson Street		
- south of Northern Distributor Road	345	315
Farrell Road		
- east of Telopea Way	215	150

2.10. The capacity of the road network is generally determined by the ability of its intersections to cater for peak period traffic flows. The surveyed intersections have been analysed using the SIDRA program. SIDRA produces a number of

measures of intersection operations. The most useful measure provided is average delay per vehicle expressed in seconds per vehicle.

2.11. Based on average delay per vehicle, SIDRA estimates the following levels of service (LOS):-

- For traffic signals, the average delay per vehicle in seconds is calculated as delay/(all vehicles), for roundabouts the average delay per vehicle in seconds is selected for the movement with the highest average delay per vehicle, equivalent to the following LOS:-

0 to 14	=	"A"	Good
15 to 28	=	"B"	Good with minimal delays and spare capacity
29 to 42	=	"C"	Satisfactory with spare capacity
43 to 56	=	"D"	Satisfactory but operating near capacity
57 to 70	=	"E"	At capacity and incidents will cause excessive delays. Roundabouts require other control mode
>70	=	"F"	Unsatisfactory and requires additional capacity

- For roundabouts, give way and stop signs, the average delay per vehicle in seconds is selected from the movement with the highest average delay per vehicle, equivalent to following LOS:-

0 to 14	=	"A"	Good
15 to 28	=	"B"	Acceptable delays and spare capacity
29 to 42	=	"C"	Satisfactory but accident study required
43 to 56	=	"D"	Near capacity and accident study required
57 to 70	=	"E"	At capacity and requires other control mode

>70	=	"F"	Unsatisfactory and requires other control mode

2.12. It should be noted that for roundabouts, give way and stop signs, in some circumstances, simply examining the highest individual average delay can be misleading. The size of the movement with the highest average delay per vehicle should also be taken into account. Thus, for example, an intersection where all movements are operating at a level of service A, except one which is at level of service E, may not necessarily define the intersection level of service as E if that movement is very small. That is, longer delays to a small number of vehicles may not justify upgrading an intersection unless a safety issue was also involved.

2.13. The SIDRA analysis found that the traffic signal controlled intersection of Northern Distributor Road and Telopea Way operates with average delays per vehicle of less than 30 seconds for both peak periods. This represents level of service C, a satisfactory level of intersection operation.

2.14. The intersection of Northern Distributor Road and Anson Street operates with average delays per vehicle for the movement with the highest average delay, of less than 20 seconds for both peak periods. This represents level of service B, a satisfactory level of intersection operation.

2.15. The intersection of Telopea Way and Farrell Road operates with average delays per vehicle for the movement with the highest average delay, of less than 15 seconds for both peak periods. This represents level of service A/B, a good level of intersection operation.

3. IMPLICATIONS OF PROPOSED DEVELOPMENT

3.1. It is proposed to rezone the site to permit development of a service station and fast food outlet. The service station comprising a site area of some 1,860m^2 is proposed to be located on the southern part of the site with frontage onto Telopea Way and Farrell Road. Access to the service station would be available via an entry driveway onto Telopea Way located adjacent to the northern boundary of the service station site and via an exit driveway onto Farrell Road.

3.2. The proposed fast food outlet comprising a site area of some 3,025m^2 is proposed to be located on the northern part of the site. Access will be provided via a combined entry/exit driveway onto Telopea Way located adjacent to the northern boundary of the fast food site.

3.3. There is currently an application for a McDonald's to be constructed on the Northern Distributor Road and Telopea Way. The facility will provide 98 seats with 43 on-site parking spaces. Access to the site is proposed from Farrell Road at two locations. The traffic assessment of the proposed service station and fast food outlet, set out in the following sections, takes into account the traffic generation of the proposed McDonald's.

3.4. This chapter examines the traffic implications of the proposed service station and fast food outlet through the following sections:-

- parking provision;
- access and internal layout;
- traffic effects; and
- summary.

Parking Provision

3.5. Orange City Council's DCP 2004 sets out the following parking requirements for the proposed development:-

- Service Station
  - three spaces for each work bay; plus
  - one space per 25m^2 GFA of shop, convenience store, or payment area;

- Fast Food Outlet

• Developments with no on-site seating or drive-through facility	12 spaces per 100m^2 GFA;
• Developments with on-site seating but no drive-through facility	12 spaces per 100m^2 GFA, plus the greater of: - 1 space per 5 seats (both internal and external seating; - 1 space per 2 seats (internal seats);
• Development with on-site seating and drive-through facility	the greater of : - 1 spaces per 2 seats (internal seating); - 1 space per 3 seats (internal and external seating).

3.6. The number of parking spaces for the proposed service station and fast food outlet will be determined during the detailed design stage of the development. However, the on-site parking provision will be provided in accordance with

Council's DCP requirements. Appropriate disabled parking and bicycle parking will also be provided.

Access and Internal Layout

3.7. Access to the service station will be provided via an entry driveway onto Telopea Way located adjacent to the northern boundary of the service station site and via an exit driveway onto Farrell Road. A separate internal connection will be provided between the service station and the fast food outlet. The access driveways to the service station should be located clear of adjacent intersections and clear of driveways servicing the existing shopping centre and proposed McDonalds development. The driveways will be designed to provide for the movement of general traffic and service vehicles to enter and exit the site in a forward direction. The proposed access driveways will be provided in accordance with the Australian Standard for Parking Facilities (Part 1: Off-street car parking facilities and Part 2: Off-street commercial vehicle facilities), AS2890.1-2004 and AS2890.2-2002.

3.8. The service station will be serviced by petrol tankers up to 19 metres in length. These vehicles will enter from Telopea Way and exit onto Farrell Road. It is anticipated that there would be up to 3 to 4 tanker deliveries per week. These deliveries are proposed to be undertaken outside of peak periods.

3.9. Access to the fast food outlet will be provided via a combined entry/exit driveway onto Telopea Way located adjacent to the northern boundary of the fast food site. The driveway will provide access to on-site customer parking and loading facilities. The fast food outlet would be serviced by vehicles ranging from small commercial vehicles to large rigid trucks. The proposed access arrangements will be provided in accordance with the Australian Standards.

3.10. Internal circulation and car park layout within the site will be developed during the detailed design stage. However, parking spaces will be typically 2.6 metres wide by 5.4 metres long. Two-way circulation aisles will be a minimum of 6.5 metres wide. Disabled parking spaces will be 2.4 metres wide by 5.4 metres long with an adjacent 2.4 metre wide shared zone for wheelchair access. These dimensions are considered appropriate.

3.11. Overall, the access arrangements and internal layout for the proposed service station and fast food outlet will be provided in accordance with the requirements of the Australian Standards AS2890.1-2004, AS2890.2-2002 and AS2890.6-2009.

Traffic Effects

3.12. The traffic generation of the proposed development will have its largest effects during the Friday afternoon and Saturday lunchtime peak periods. The RMS "Guide to Traffic Generating Developments" suggests that service stations with convenience stores generate traffic during the afternoon peak hour in accordance with the following formula:-

Vehicle Trips		=	0.04A(S) + 0.3A(F)
Or		=	0.66A(F)
Where	A(S)	=	area of site (m^2)
	A(F)	=	gross floor area of convenience store (m^2)

3.13. With a site area of some 1,860m^2 and a convenience store of some 100m^2 the proposed service station would generate some 80 to 100 vehicles per hour two-way (inbound plus outbound) during the afternoon peak period. This is equivalent to 40 to 50 customers per hour at peak times.

3.14. The RMS guidelines also suggest design generation rates for fast food outlets of some 100 to 120 vehicles per hour two-way at peak times.

3.15. The majority of the traffic generation from the proposed development would be passing trade, i.e. they would have passed the site regardless of their decision to visit the service station or fast food outlet. Passing trade would be equivalent to some 70% for the service station and some 50% for the fast food outlet, with the majority accessing the site from the adjacent shopping centre and residential area, and the balance diverting from the Northern Distributor Road. The additional peak period traffic generated by the proposed development will therefore be some 80 to 100 vehicles per hour two-way, equivalent to some 40 to 50 customers per hour during peak periods.

3.16. The additional traffic generated by the proposed service station and fast food outlet has been assigned to the road network. Existing traffic flows plus the additional traffic generated by the proposed development are shown on Figures 2 and 3, and summarised in Table 3.1.

Table 3.1: Existing Plus Development Two-Way (Sum of Both Directions) Peak Hour Traffic Flows

Road	Friday		Saturday	
	Existing	Plus Development	Existing	Plus Development
Northern Distributor Road				
– east of Anson Street	675	+30	480	+30
– east of Telopea Way	880	+50	705	+50
– west of Telopea Way	940	+30	680	+30
Telopea Way				
- north of Northern Distributor	830	+130	665	+130
- north of Farrell Road	805	+115	655	+115
Anson Street				
- south of Northern Distributor	345	+30	315	+30
Farrell Road				
- east of Telopea Way	215	+60	150	+60

3.17. Examination of Table 3.1 reveals that:

- traffic flows on the Northern Distributor Road would increase by some 30 to 50 vehicles per hour two-way in the peak periods;

- traffic flows on Telopea Way (between the Northern Distributor Road and Farrell Road) would increase by some 130 vehicles per hour two-way in the peak periods. North of Farrell Road the increase would be some 115 vehicles per hour two-way;

- traffic flows on Anson Street would increase by some 30 vehicles per hour two-way in the peak periods; and

- traffic flows on Farrell Road, east of Telopea Way, would increase by some 60 vehicles per hour two-way in the peak periods.

3.18. The traffic report for the proposed McDonalds development estimated that the proposed development would have a traffic generation of some 230 vehicles per hour two-way during the Friday afternoon and Saturday lunchtime peak periods. Some 35% of this McDonalds traffic would be passing trade.

3.19. In addition to the McDonalds development, a new childcare facility to the north of the site (15 Telopea Way) and an extension to the existing childcare centre to the east of the site (52-56 Farrell Road) have been approved by Council.

3.20. The intersections analysed in Chapter 2 were re-analysed with proposed development, McDonalds and the childcare centre traffic in place, using the SIDRA program. The analysis found that:-

- the traffic signal controlled intersection of Northern Distributor Road and Telopea Way would operate with average delays per vehicle of less than 35 seconds per vehicle during the Friday afternoon and Saturday lunchtime peak periods. This represents level of service C, a satisfactory level of intersection operation;

- the intersection of Northern Distributor Road and Anson Street would continue to operate with average delays per vehicle for the movement with the highest average delay, of less than 20 seconds per vehicle during peak periods. This represents level of service B, a satisfactory level of intersection operation;

- the intersection of Telopea Way and Farrell Road would continue to operate with average delays per vehicle for the movement with the highest average delay, of less than 15 seconds per vehicle during the Friday afternoon and Saturday peak periods. This represents level of service A/B, a good level of intersection operation; and

- the intersections of site access driveways on Telopea Way and Farrell Road would operate with average delays per vehicle for the movement with the highest average delay, of less than 15 seconds for both peak periods. This represents level of service A/B, a good level of intersection operation.

3.21. In summary the adjacent road network could accommodate the traffic generated by the proposed service station and fast food outlet with intersections continuing to operate at their existing levels of service.

Summary

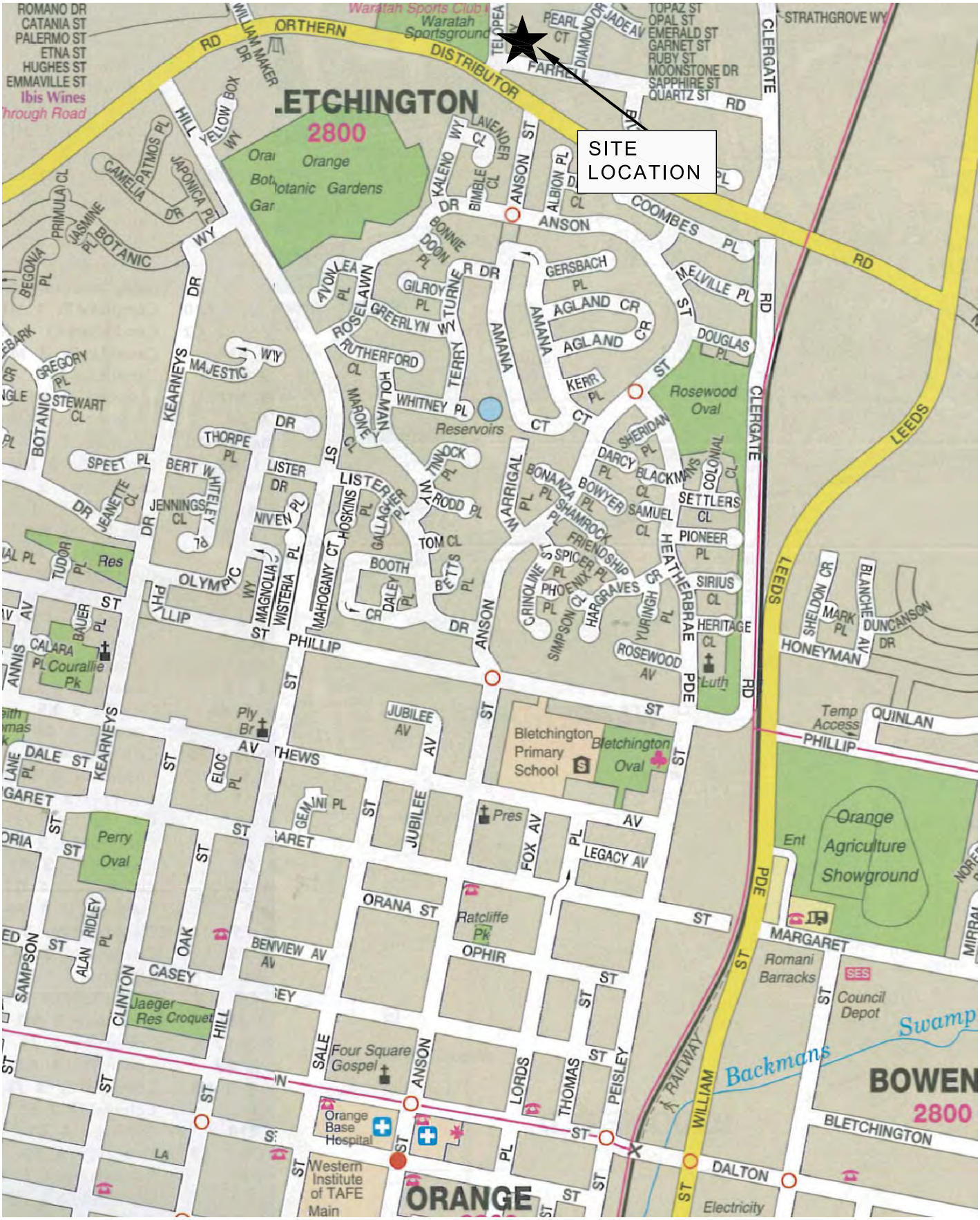
3.22. In summary, the main points relating to the traffic implications of the proposed service station and fast food outlet are:-

(i) on-site parking will be provided in accordance with Council's DCP 2004;

(ii) access arrangements will be provided clear of adjacent intersection and in accordance with the Australian Standard;

(iii) parking layout, internal circulation and service arrangements will be provided in accordance with the Australian Standards; and

(iv) the existing road network can cater for the traffic generated by the proposed service station and fast food outlet.



Location Plan

Colston Budd Hunt & Kafes Pty Ltd

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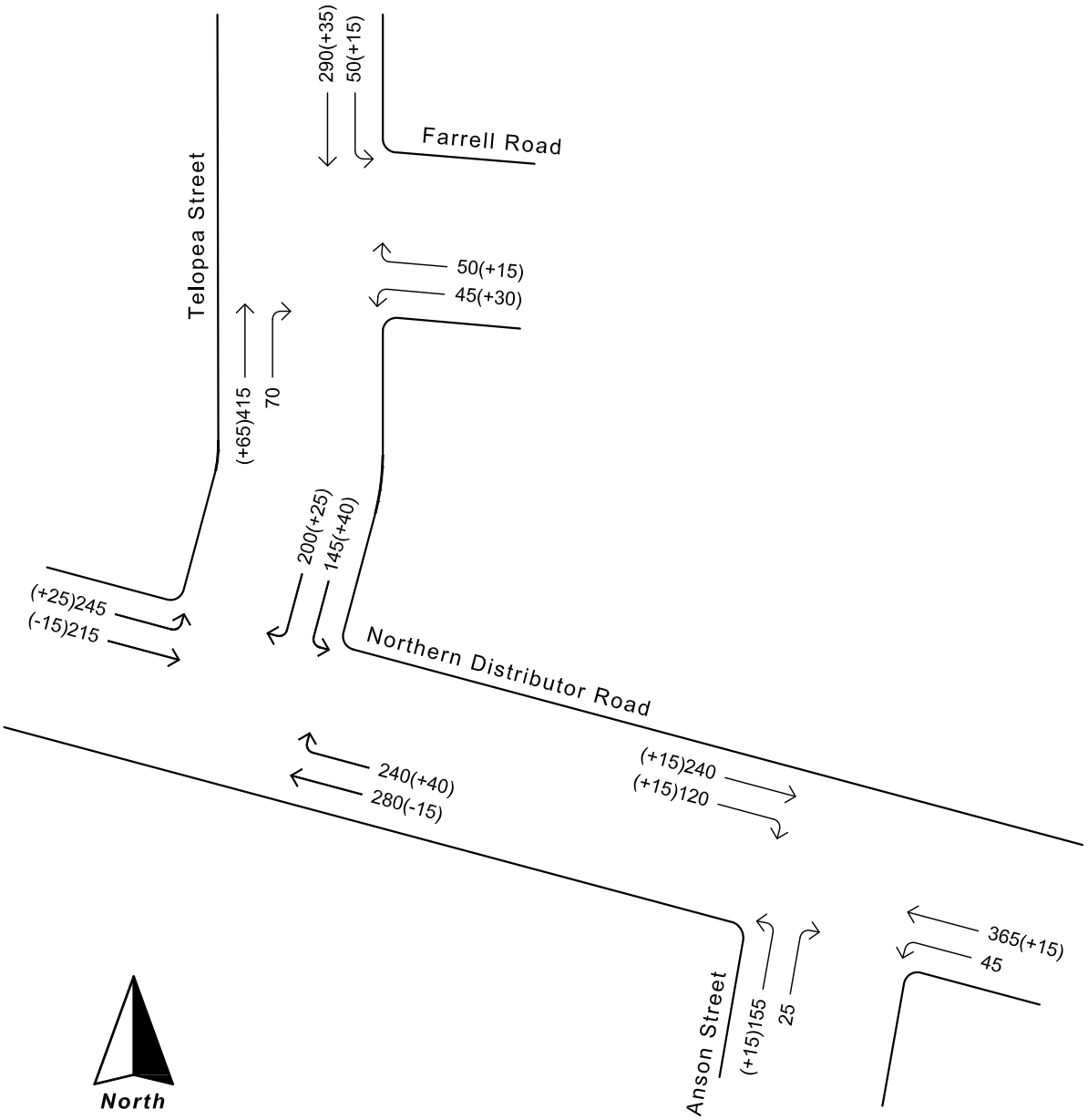
Figure 1



LEGEND

100 - Existing Peak Hour Traffic Flows

(+10) - Additional Development Traffic

Existing Friday afternoon peak hour traffic flows plus development traffic

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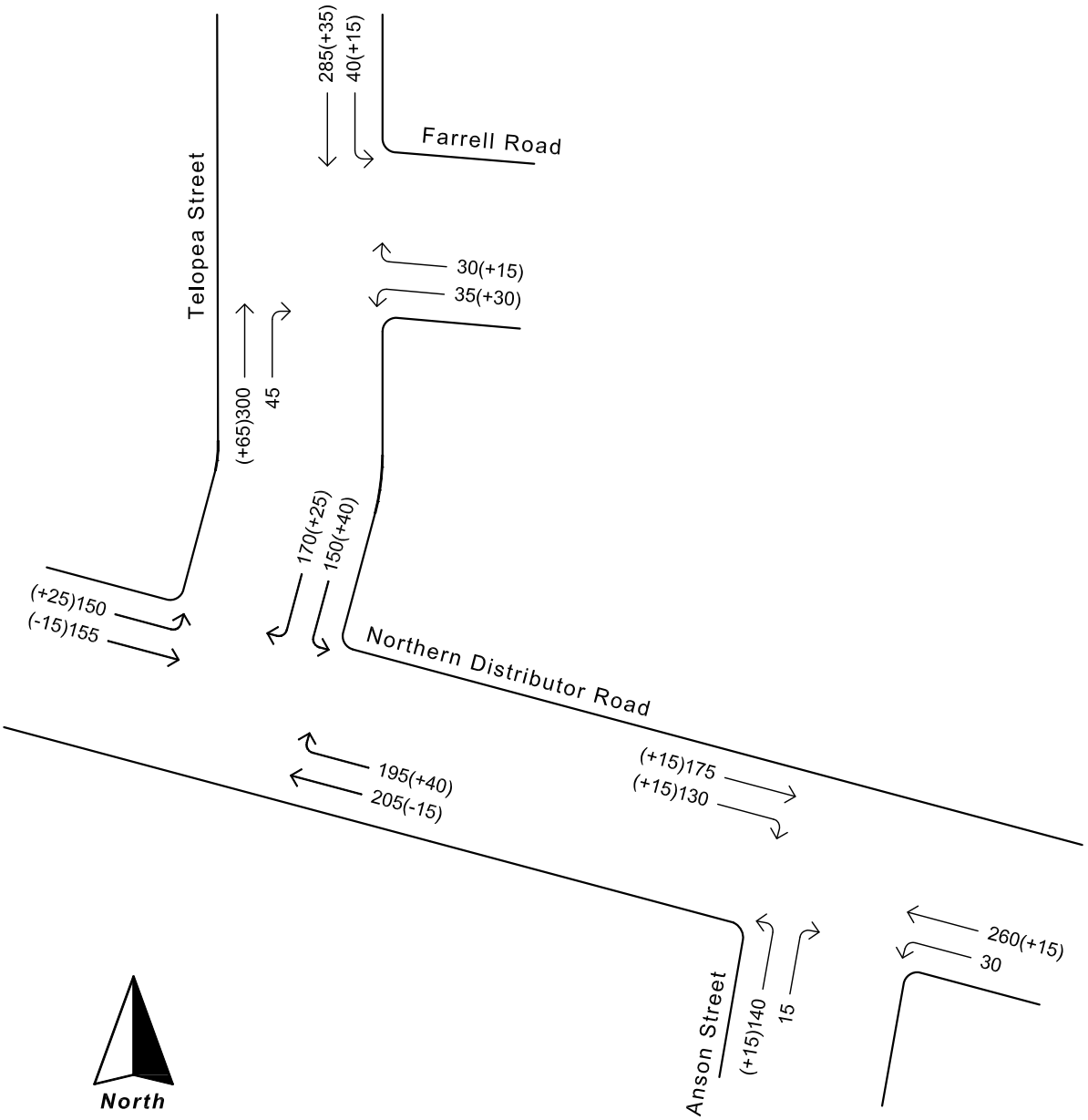
Figure 2



LEGEND

100 - Existing Peak Hour Traffic Flows
(+10) - Additional Development Traffic

Existing Saturday midday peak hour traffic flows plus development traffic

Colston Budd Hunt & Kafes Pty Ltd

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Figure 3