SOUTH WAIRARAPA DISTRICT COUNCIL

25 OCTOBER 2017

AGENDA ITEM C6

GREYTOWN STRUCTURE PLAN AND PLAN CHANGE: RESOURCE MANAGEMENT ACT 1991

Purpose of Report

To enable Council to commence the statutory processes required under the Resource Management Act 1991 to include;

a) the Greytown Development Area (GDA) Structure Plan into the Wairarapa Combined District Plan (WCDP),

b) uplift the deferred development status of the land included within the "Future Development Area (FDA)",

c) designate land for road, and

d) rezone land from Residential (FDA) to Rural – Primary Production in the Wairarapa Combined District Plan.

Recommendations

Officers recommend that the Council:

1. *Receive the Greytown Structure Plan and Plan Change Report.*
2. *Resolve to adopt the "Proposed Plan Change: Greytown Development Area" dated 16 October 2017, structure plan titled "Appendix 15, Greytown Development Area Structure Plan" dated 16 October 2017; and s32 Report titled " Proposed Plan Change : Greytown Development Area Structure Plan Section 32 Resource Management Act 1991 Evaluation Report dated 16 October 2017".*
3. *Resolve to rezone the land described as Lot 15 DP 310 from Urban (Residential - Future Development Area) to Rural (Primary Production).*
4. *Resolve to designate as road in the Wairarapa Combined District Plan Lot 7 DP 70079, and an adjoining 2 metre wide strip within Lot 5 DP 70079 and Lot 2 DP 64859 (Plan and Cross Section Dated 16/10/2017).*
5. *Resolve to publicly notify the proposed plan change and associated documents as described in resolution 2, 3 and 4 above, in accord with the First Schedule of the Resource Management Act 1991.*
6. *Authorise the Group Manager, Planning and Environment to engage a suitably qualified hearings commissioner or commissioners to consider submissions and further submissions and recommend decisions to Council.*

1. Executive Summary

The Greytown FDA was included in the Wairarapa Combined District Plan around 10 years ago. The FDA, more or less encompasses the land area within Mole, Wood, West and Kuratawhiti Streets.

Since that time development of land within the FDA has not been readily achievable as no structure plan had been developed to guide the provision of infrastructure and reserves.

Because of strong demand over the last 3 years for more residential land in Greytown, the development of a structure plan was commenced by Council.

This process has involved extensive community consultation, technical investigations and technical design work, along with the development of appropriate regulatory mechanisms to manage development and recover the costs of infrastructure and reserves.

This work is now completed to the point where Council can confidently press ahead with obtaining appropriate and necessary regulatory approvals.

These involve the uplifting of the FDA status, the adoption of a structure plan, the configuring of financial/development contributions for the area and making other necessary changes to the WCDP, including a road designation and rezoning of land (from residential to rural), to enable the subdivision and development of the FDA block.

It should be noted that even if Council does resolve to commence these processes and they are successfully completed, any specific subdivision remains subject to the residential zone rules and standards of the District Plan.

This means they must be individually assessed and consented by way of a resource consent for subdivision. At that time the detailed aspects of design and infrastructure, are considered.

2. Discussion

2.1 District Plan

As part of the review of the prior South Wairarapa District Plan and the formation of the Wairarapa Combined District Plan in the early to mid-2000's, the supply of land for industry, commerce and residential development was considered across the entire Wairarapa region.

As part of that process, decisions were made to provide land for future housing in Greytown in what is now referred to as the FDA, along with a number of other locations.

To make the decision to include the FDA in the WCDP, Council examined locational and physical characteristics, demand and growth rates and broad

infrastructure requirements. These assessments were to enable a zoning decision (from rural to residential) to be taken.

However, the analysis undertaken at that time did not get into the level of detail in terms of design and infrastructure costs and community preferences, for the release of the land for actual development. This was recognised by the inclusion of a "deferred" development status for the land.

This deferred status was to remain in place until such time as a structure plan was developed and any consequential changes to the WCDP completed.

Because of this, the release of the FDA for development has effectively been on hold awaiting the development of a structure plan.

Even though provision was made in the WCDP to enable land within the FDA to be subdivided, as no structure plan existed, it was under limited terms, this meaning that the bulk of the land remains undeveloped today, some 10 years later.

2.2 Land Uptake

With the relatively solid growth rates being experienced in the district and particularly in Greytown, Council was receiving comment from those involved in development projects that the supply of land for new housing needed to be increased.

The message was that land supply for housing was rapidly running out in Greytown, leaving infill as the only option.

While infill is a valid response to growth, many people in Greytown are/were concerned about the impact this form of development can have on the open, spacious character of the town.

To avoid those impacts, new "greenfields" development was an alternative that was available if the FDA was able to be released for development.

2.3 Section Supply

Work commenced on a structure plan (and associated Plan Change) to enable the release of the balance of undeveloped land within the FDA around 2 years ago.

This development area is capable of supplying up to 500 lots under the rules of the District Plan, although this maximum is very unlikely to be achieved due to land constraints (contaminated soils Wilks Block) and earlier subdivisions, which are quite spacious and unable to be further broken up due to layout.

As such a figure of 450 has been estimated as the upper theoretical maximum number of sections that can be created in the remaining FDA, with an expectation that 400 lots is the likely practical upper yield.

This number would provide for at least 10 years' growth and more likely 15 for Greytown. This level of supply is consistent with the National Policy Statement for Urban Capacity targets set by Government.

2.4 Capital Investment

The FDA represents a significant opportunity for Greytown and the district.

The required capital investment in the land, development of sections and then housing, along with the subsequent cost of living expenditure by those new households over the next 10 – 15 years is substantial.

The release and purchase of around 400 sections within the estimated value range (see valuation report attached to Section 32 Report), represents an investment on its own of between $110 - 120,000,000.

The construction of houses on each lot is in the order of a further $140-160,000,000 investment (depends on size/material used etc.), while the fit out of the houses and lots will add in the order of $25 - 30,000,000 to the total investment of capital.

These figures are in 2017 dollars.

2.5 GDP Impacts

Each new household should bring the New Zealand average household annual income to the district (and the figure used is likely lower than what will actually occur as Greytown has a higher socio- economic demographic than average).

If so, then each year after development is completed, up to an additional $15,000,000 will be spent in the town and district, that is, between $75 - 150,000,000 over the next 15 years (actual amount depends on the rate of development).

For Council each household will contribute rates. If the average contribution is $2500pa, this represents an increase in Councils rating base of around $1,000,000 a year once the area is developed.

Of course this increase in rating base is partly offset by the need to offer additional services to those households such as rubbish collection, road maintenance and operation of wastewater and water supply systems.

As will be noted, for a relatively modest public capital investment in roads, lineal reserves and underground services and ongoing operational costs, there is a positive gain for Council in its rating base.

2.6 First Schedule Process.

It is not proposed in this report to go through the Plan Change and Structure Plan in detail.

All relevant information is in the Plan Change, Structure Plan documentation and Section 32 analysis required under the Resource Management Act 1991 attached.

Instead a very brief summary of each is provided because Council has had briefings on most of the content in any case previously.

2.6.1 Plan Change

This is the statutory document which must follow the form set out in the schedules to the Act and regulations. It is the mechanism to alter provisions in the Wairarapa Combined District Plan.

2.6.2 Structure Plan

This sets out the desired form and location of infrastructure necessary to enable the physical development of the land for housing, including roads, sewerage systems, water supply and storm water management.

It also prescribes the form and location of reserves within the area.

Lastly it sets the basis for financial / development contributions.

2.6.3 Section 32 Analysis

The section 32 analysis required under the Resource Management Act 1991 outlines the "benefits and costs" arising from the Plan Change and Structure Plan (note – the benefits/costs can be monetary or non-monetary).

To do this it sets out the reasons for various parts of the other statutory documents. Monetary costs and benefits have been where relevant.

2.6.4 Notice of Requirement

A notice of requirement is required where a designating authority (for example Council or the Crown) intends to make provision for a public work.

Many facilities are deemed public works under the Public Works Act, including roads.

For the structure plan land, Council needs to be assured that adequate road access is provided.

Because there are very limited opportunities to connect the area to West Street, it is proposed to designate for road the existing 15m wide strip of land at 104A West Street, along with an additional 2m strip of land within the 2 adjoining properties on the north side.

The intention is to ensure provision of a 17m wide road corridor through this section of land to the main blocks of land within the new Greytown Development Area.

This short designated corridor will form an essential part of the proposed collector or "spine" road included in the structure plan.

2.6.5 Notification process

The Plan Change which includes the Structure Plan, will be publicly notified if Council resolves to adopt the Section 32, Structure Plan and Plan Change documents attached.

This notification will take place under the Resource Management Act 1991. Notification will be by way of notices in the press and must extend for a period of no less than 20 working days.

2.6.6 Submissions

Members of the public who have an interest in the plan change may lodge submissions during that period in relation to the contents of the three documents, either in support or opposition.

If submissions are received then after the closing date for submissions, officers create a summary of decisions that have been requested by submitters. This describes all the submissions that have been made and the reasons for them.

2.6.7 Further Submissions

This summary is then notified for comment for a period of no less than 10 working days.

Parties may then make a further submission on matters which have been raised in the original submissions, but only on those submissions in which they have an interest that is *more than the public in general,* or they are representing a relevant aspect of the public interest.

As with submissions, a further submission must be made in opposition or support but of a particular original submission.

2.6.8 Hearings

Once the Council has received all submissions and further submissions, officers in conjunction with Councils consultants will prepare a *Section 42A report* that includes:

- a summary of submissions and further submissions
- an analysis of all the submissions and further submissions
- recommendations about which parts of the plan change / structure plan should be adopted, removed or modified.

The Council will then organise hearings if submitters have indicated they want to be heard. A hearing is not required where there is no one wishing to be heard, or where requests to be heard are withdrawn.

2.6.9 Independent Hearings Commissioner(s)

Because Council has a direct interest in the outcome of any hearings (through infrastructure works and reserves) an independent hearings commissioner(s) should be engaged to undertake the hearings process and recommend decisions to Council for adoption.

3. Conclusion

The attached documents have been prepared to enable Council to commence the legal processes under the Resource Management Act 1991 to allow the development of the current FDA in Greytown for residential purposes.

This process is subject to formal public submissions and potentially hearings and is unlikely to be concluded quickly if submissions are made, as a hearing is then required.

In addition submitters have the right to appeal any decisions made by Council through this process to the Environment Court. The EC can reject, accept in part, modify or accept the proposals, as such reviews are de novo.

4. Appendices

Appendix 1 – Plan Change

Appendix 2 – Structure Plan

Appendix 3 – Section 32 Report

Reporting Officer: Murray Buchanan, Group Manager Planning and Environment

Appendix 1 – Plan Change

Proposed Plan Change No 9: Greytown Development Area Structure Plan

In accordance with the provisions of the First Schedule of the Resource Management Act 1991 (the Act), Part I: Preparation and Change of Policy Statements and Plans by Local Authorities, the following outlines Proposed Plan Change No 9: Greytown Development Area Structure Plan to the Wairarapa Combined District Plan (District Plan):

1 Time Limits

As no specific time limit is set in the Schedule, Council have an obligation to avoid unreasonable delay (clause 1(3)), in accordance with Section 21 of the Act.

1A Mana Whakahono a Rohe to be complied with

N/A – no applicable Mana Whakahono a Rohe.

1B Relationship with iwi participation legislation

N/A – no relevant iwi participation legislation.

2 Preparation of proposed policy statement or plan

Proposed Plan Change No. 9 to the Wairarapa Combined District Plan (District Plan) has been prepared by South Wairarapa District Council, the local authority concerned (clause 2(1)), as follows:

a) To include the Greytown Development Area Structure Plan as Appendix 15 to the District Plan;

b) Change Planning Map 59 of the District Plan to exclude the property on the corner of Wood Street and Mole Street, Greytown (Lot 15 DP 310) from the Greytown Development Area and re-zone the property back to the Rural Zone (Primary Production) as shown in Figure 1 below;

c) Change Planning Map 59 of the District Plan to uplift the "Future" deferred development status from the Greytown Future Development Area (remove the FDA stripes notation) and rename and denote the area as the Greytown Development Area as shown in Figure 1 below;

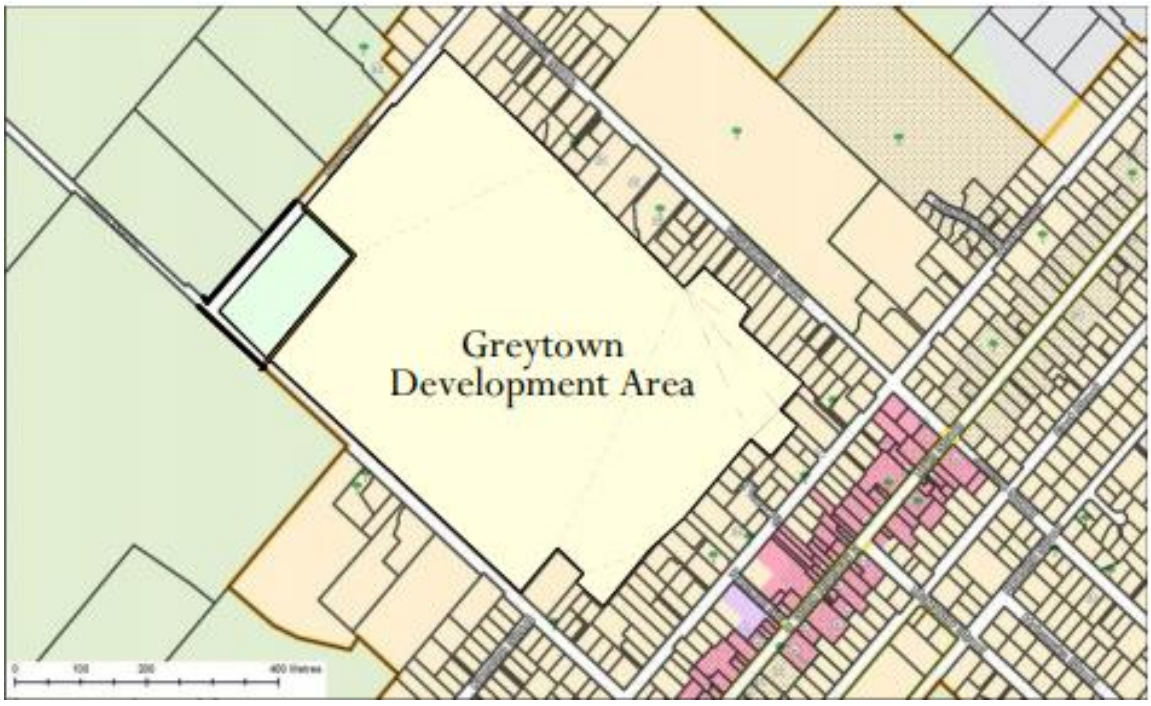


Figure 1: Part of District Plan Map 59 showing the Proposed Plan Changes

d) Change all references to the Greytown Future Development Area throughout the District Plan to the Greytown Development Area;

e) Change Policy 18.3.11(e) of the District Plan to read:
To manage the form and pattern of subdivision and development within the Greytown Development Area to achieve the objectives of the approved Structure Plan for the area.

f) Designate the 15m wide access leg off West Street (Lot 7 DP 70079) and a 2m wide strip on the northern adjoining parcels of land (Lot 5 DP 70079 and Lot 2 64859) shown hatched in the Notice of Requirement as "road" in accordance with Section 168A of the Act (see Figure 2 below).

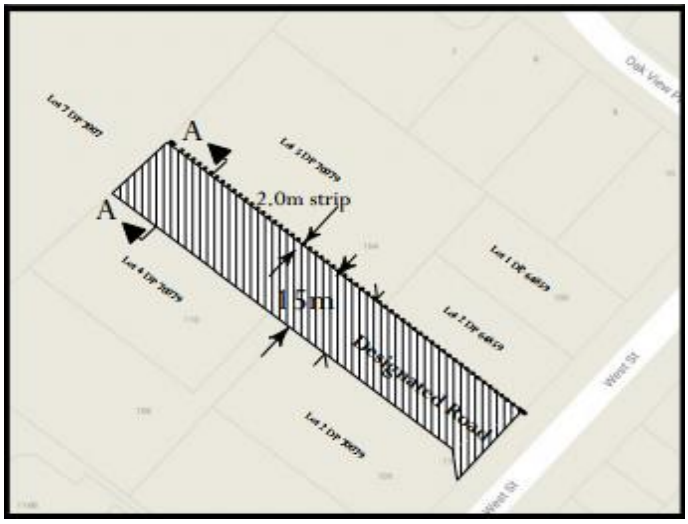


Figure 2: Plan of Notice of Requirement under S. 168A of the RMA: land to be designated as "road"

3 Consultation

Consultation for Proposed Plan Change No. 9: Greytown Development Area Structure Plan has been undertaken as summarised in the Stage 1: Scoping Report; Stage 2 Interim Report and the Section 32 Evaluation Report, all forming part of the Greytown Development Area Structure Plan development process, including consultation with tangata whenua of the area who may be so affected, through iwi authorities (clause 3(1)(d)).

3A Consultation in relation to policy statements

N/A

3B Consultation with iwi authorities

For the purposes of clause 3(1)(d) Council has undertaken consultation with iwi authorities, including enabling the iwi authorities to identify resource management issues of concern to them (clause 3B(d)).

3C Previous consultation under other enactments

No previous consultation undertaken.

4 Requirements to be inserted prior to notification of proposed district plans

A territorial authority may include in its proposed district plan, which is in this case a proposed plan change, any requirement for a designation which the territorial authority has responsibility for within its district (clause 4 (6)(a)). If a territorial authority includes a requirement under subclause (6), it must make available for public inspection all information about the requirement that is required by the prescribed form for the notice of that requirement (clause 4 (7)). The proposed "road" designation as outlined in 2 above meets the above criteria and the information required is included in the Section 32 Report for Proposed Plan Change No. 9 and will notified and made available with Proposed Plan Change No. 9.

4A Further pre-notification requirements concerning iwi authorities

Draft plan change: Greytown Development Area Structure Plan will be provided to iwi authorities once approved by Council.

5 Public notice and provision of document to public bodies

An evaluation report for the proposed plan change: Greytown Development Area Structure Plan has been prepared in accordance with Section 32 of the Act. Particular regard has to be given to this report when deciding whether to proceed with the plan change (clause 5(1)(a)). Once the decision is made to proceed, Council must either publicly notify the proposed plan change or give limited notification, as provided for in clause 5A.

It is considered appropriate to publicly notify the proposed plan change: Greytown Development Area Structure Plan because in this case Council is unable to identify all the persons directly affected by the proposed plan change (the test set for limited notification in clause 5A(2)).

Clause 5 also provides details as to how public notice is served; who should receive a copy of the proposed plan change; where copies of the proposed plan change are to be made available for viewing; that any person can make a submission; and the closing date for submissions, which in the case of a proposed plan change, is at least 20 working days after public notification.

5A Option to give limited notification of proposed change or variation

N/A – if publicly notified

6 Making of submissions under clause 5

Once the proposed plan change: Greytown Development Area Structure Plan is notified the local authority in its own area may make a submission (clause 6(2)), or any other person may make a submission so long as that person does not gain an advantage in trade competition (clauses 6(3) and 6(4)).

The remainder of the process to be followed under the First Schedule of the Act will depend on whether submissions are received.

Dated 16 October 2017

Appendix 2 – Structure Plan

APPENDIX 15 – GREYTOWN DEVELOPEMENT AREA STRUCTURE PLAN

1 Purpose

1.1 The Wairarapa Combined District Plan (District Plan) required a Structure Plan to be developed for the Greytown Future Development Area (FDA) to enable the "deferred development" status over the area to be uplifted. *(Refer District Plan Objective 18.3.10 "Managing Urban Growth" and Policies 18.3.11(a)-(c) and (e)).*

1.2 The Greytown Development Area Structure Plan provides the framework to facilitate an integrated approach to residential development and subdivision, promotes the efficient use of infrastructure and avoids, remedies or mitigates potential adverse effects on natural and physical resources in the area now known as the Greytown Development Area and identified in the attached Greytown Development Area Structure Plan: Layout Plan.

2 Design Objectives

2.1 Derived through both design principles and consultation, the Greytown Development Area Structure Plan has the following objectives:

1. Integrated resource management across land in different ownership
2. Provision of certainty to land owners and Council
3. The setting of the general layout and form of development recognising owner preferences where possible
4. Achievement of good urban design
5. Coordinated infrastructure provision
6. Setting the level of financial contributions by quantifying the costs of infrastructure, identifying who is responsible for those costs and timeframes
7. Meeting Councils Section 32 of RMA duties by assessing costs, benefits and alternatives
8. Development that is consistent with the design adopted by the Structure Plan
9. Maintaining Greytown's 'village' and heritage character
10. Maintaining Greytown's landscape character through features including large/mature trees, vegetation, gardens, reserves and openness
11. Providing for efficient transport connections – enhance how roads, footpaths and walkways and cycling networks work together and link to existing networks including access to buses and trains
12. Allowing for diversity within the area

3 Design Guide

3.1 A design guide has been developed to help achieve the design objectives for the Greytown Development Area. These have been derived from Council requirements

and from consultation with landowners within the Greytown Development Area, local iwi, the Greytown Community Board, local surveyors and real estate agents, and government agencies.

3.2 The design guide is to be read in conjunction with the Greytown Development Area Structure Plan: Layout Plan; Cross Section 1 Spine (Collector) Road; Designated Road Plan and Cross Section AA; Indicative Layout including temporary turnaround; and Landscape Perspective Plan which all form part of the Structure Plan.

3.3 This design guide provides policies on the following:

- Vehicle, cycle and pedestrian connectivity
- Reserves Provision
- Site Development
- Infrastructure and Services Provision
- Financial Contributions

4 Design Policies

4.1 Vehicle, Cycle and Pedestrian Connectivity

1. A central 'spine' (collector) road, providing for vehicular, cycle and foot traffic shall connect West Street to Mole Street, with connection points across property boundaries in the locations shown on the Greytown Development Area Structure Plan: Layout Plan.
2. The 'spine' road shall be designed to the standards set out in the Greytown Development Area Structure Plan: Cross Section 1 Spine (Collector) Road.
3. The 'spine' road is named "Farley Avenue" in recognition of the historic connection the Farley Family have with the land, as previous owners, and the location of the Farley Oak tree on West Street near the entrance to the 'spine' road.
4. The existing access into the Greytown Development Area from West Street (connection point of the 'spine' road onto West Street) shall have a minimum legal road width of 17 metres which is to be covered by a designation for "road" as outlined in the Designated Road Plan Cross Section AA.
5. Vehicle Crossings (access points and driveways) off the 'spine' road on the side of the lineal reserve and water race shall be minimised to ensure the continuity of the lineal reserve and water race. Crossings of the water race shall be spaced at a minimum distance of 90 metres, this distance is to be measured from the centre point of each proposed access.
6. Access is to be provided from the 'spine' road through to the extension of Westwood Avenue.

7. Side roads (local roads) shall form connections from the 'spine' road to Wood Street and Kuratawhiti Street, with connection points across property boundaries in locations shown on the Greytown Development Area Structure Plan: Layout Plan.
8. Pedestrian links shall be adequately lit with heritage type streetlights (similar to those in Westwood Avenue or the Main Street Heritage Precinct), with all lighting designed to minimize glare and light pollution to adjoining residential properties, roads and the night sky.
9. The naming of local roads and right-of-ways within the Greytown Development Area should consider the list of road names available from Council upon request.
10. All scheme plans lodged for subdivision development proposals within the Greytown Development Area shall provide for connections to adjoining land.
11. Where a continuation of a road link across a property boundary is to be provided in the future, a temporary turnaround shall be provided, unless otherwise authorised by Council as part of a resource consent process.
12. Unless otherwise specified in this design guide, all roads, access, footpaths and parking shall be designed in accordance with Appendix 5 of the District Plan.

4.2 Reserves Provision

1. A lineal reserve alongside the 'spine' road shall incorporate a branch of the Moroa Water Race and shall be provided to cater for the recreational needs of residents.
2. The lineal reserve shall be developed with facilities and amenities including a cycle/walking path, plantings of native and exotic plants and trees, lawns, spaced seating and lighting. Only a limited number of people/vehicle access points shall be permitted to cross the lineal reserve.
3. In the long-term the bunds along the water race shall be planted and street trees shall be established to enhance of the landscape and maintain Greytown's character.

4.3 Site Development

1. Landowners and developers shall prepare subdivision development proposals that take account of the diversity of housing styles demanded by the residential housing market, so that a range of lots sizes (e.g. smaller lots to cater for single people or elderly couples, and more spacious lots for families with large areas of open space and vegetation) shall be provided within the Greytown Development Area.

2. Subdivisions shall be designed to incorporate the roading network and connectivity points shown on the Greytown Development Area Structure Plan: Layout Plan.
3. Unless otherwise specified in this design guide, all development within the Greytown Development Area shall be in accordance with the residential development standards of the District Plan.

4.4 Infrastructure and Services Provision

1. All mains and services shall be located underground and within road reserve, except as specified in 5 below.
2. Water supply systems shall interconnect with the ring main around Wood, Mole, Kuratawhiti and West Streets and Westwood Avenue.
3. Primary stormwater treatment from roads and sites shall be designed to a 100 year return period and primarily managed via soak pits and/or swales.
4. The water race shall be designed and reformed to provide water retention capacity for stormwater control purposes.
5. A new sewer main through 21 Wood Street or in close proximity to that location shall be provided for and covered by an easement or similar instrument.
6. Unless otherwise specified in this design guide, all services shall be designed in accordance with requirements of the District Plan.

4.5 Financial Contributions

1. While the existing Financial Contributions framework of the District Plan enables Council to recover funding for the actual costs of providing infrastructure (water supply, wastewater disposal, stormwater disposal), open spaces and roads/access to the development Council, in line with recent legislative changes, Council proposes to transfer the financial contributions applicable to the Greytown Development Area to development levies. This will be done as part of the developing the 2018-2028 Long Term Plan under the Local Government Act. In the interim Council will continue to collect the actual cost of any upgrade to infrastructure, reserves and roads/access necessary to service the development area; and a share of the cost where additional capacity has been created in anticipation of future development through financial contributions.
2. The existing Financial Contributions framework provides the overall context for financial contributions within the Greytown Development Area with the actual financial contributions amounts levied (listed below) being based on the actual costs of providing infrastructure, and the works deemed necessary to upgrade Greytown's infrastructure to service the development of the Greytown Development Area.

3. The following Financial Contributions will be levied in the Greytown Development Area:
   a) Wastewater Disposal: $10,400 (excluding GST) per allotment created
      [The cost of upgrading the wastewater system in Greytown was calculated at approximately $6 million plus GST. This was then divided by the maximum likely number of new residential lots within Greytown. This results in 80% of the wastewater upgrades being funded through financial contributions and 20% through rates. This funding split included the 400 additional lots in the Greytown Development Area.]

   b) Water: $3249 (excluding GST) per allotment created
      [As little upgrading of the water supply system is required to accommodate development in the Greytown Development Area, the existing financial contributions levied for water, as specified here, will apply.]

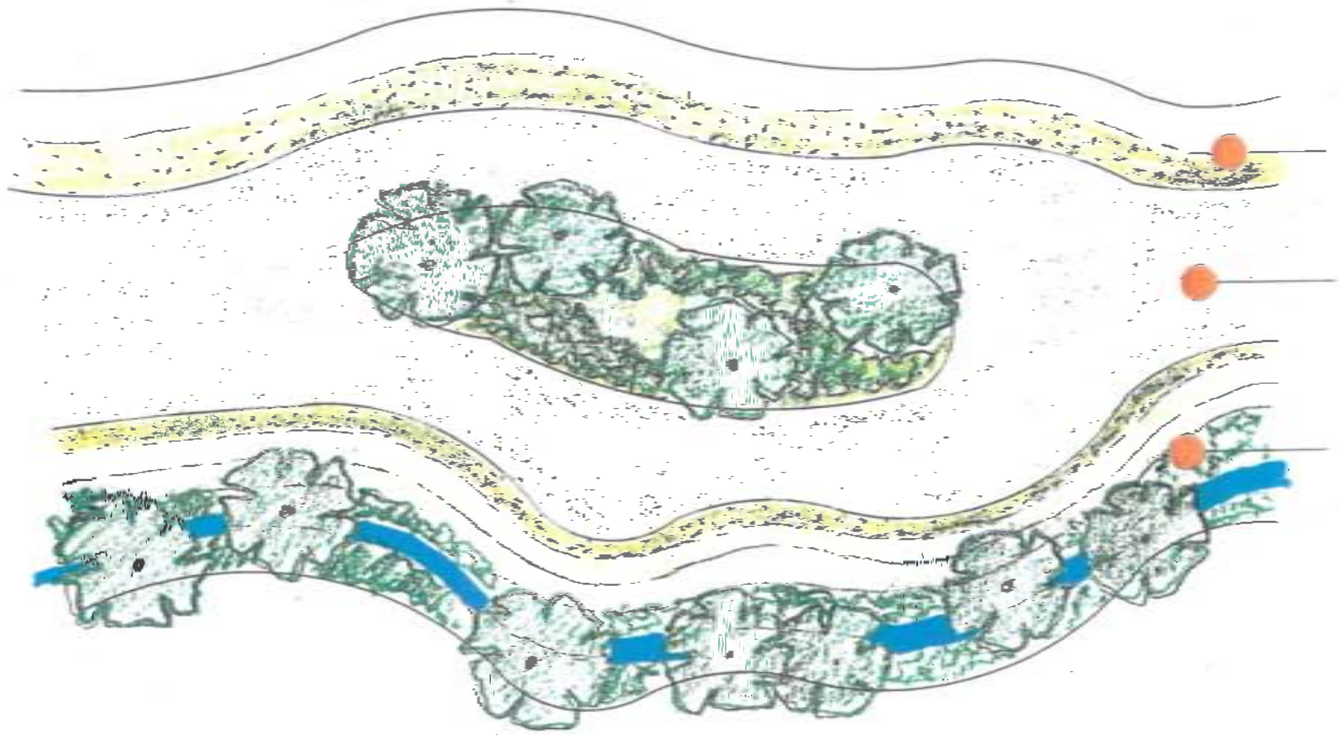
   c) Reserves: 3% of the land value of each allotment created (plus GST)
      [The total cost of the land required for the Greytown Development Area lineal reserve and the lineal reserve development costs including cycle/pedestrian path, landscaping and tree planting, seating and the water race relocation and formation has been calculated at approximately $710,000 plus GST. The yield of reserve contributions from 3% of the land value of the 400 additional lots in the Greytown Development Area is considered sufficient to enable Council to establish the lineal reserve as envisaged.]

   d) Roading: 2% of the land value of each allotment created (plus GST), plus $3260 (excluding GST) per allotment created on properties that are **not** providing land for either the construction of 'spine' road and/or local roads.
      [The total cost of upgrading the roading network around the Greytown Development Area, including necessary upgrades to Wood Street and Mole Street, the cost of the designation over the access off West Street and the construction costs of the increased width of the 'spine' road has been calculated at approximately $1.2 million plus GST. This was then divided by the maximum likely number of new residential lots within the Greytown Development Area that would not be providing land for roading (estimated at 320 lots). The roading contribution recognises the "public good" component that the 'spine' road and connecting local roads provide to the efficient functioning of the overall Development Area.

4. Unless otherwise specified in this design guide, Section 23: Financial Contributions of the District Plan applies to the Greytown Development Area.

Dated 16 October 2017

Greytown Development Area Structure Plan

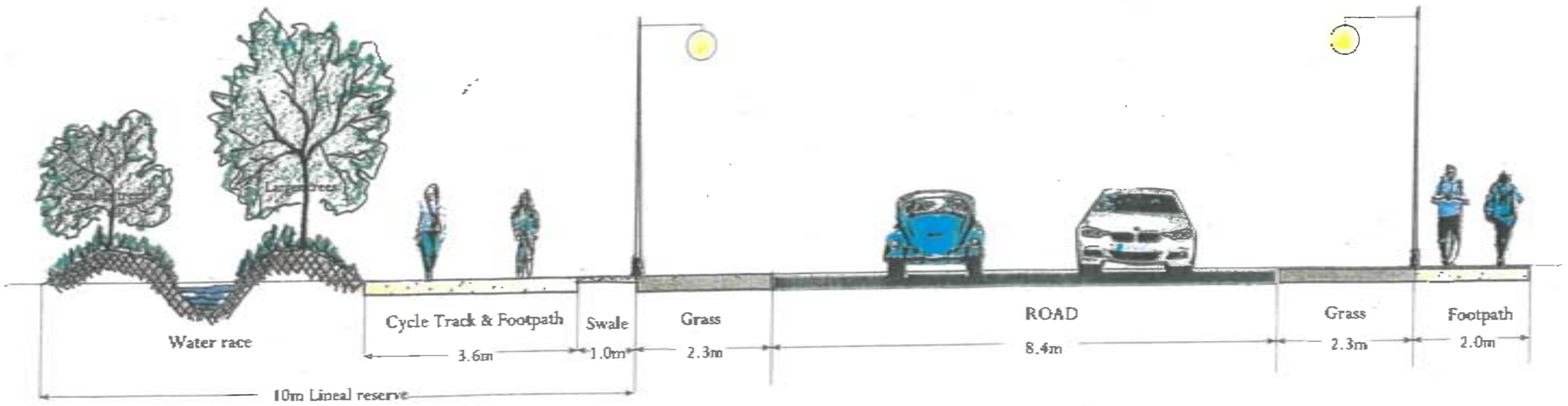


Indicative layout including temporary turn around (s)

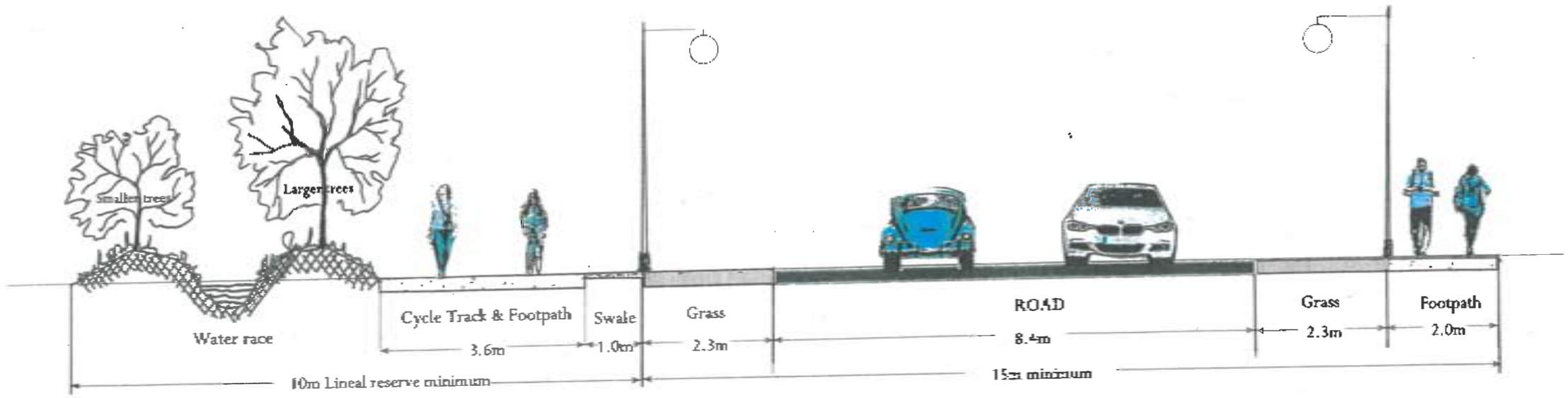
4.0m pedestrian & grass verge

8.4m spine collector road

Trees, water race , cycle & pedestrian foot path



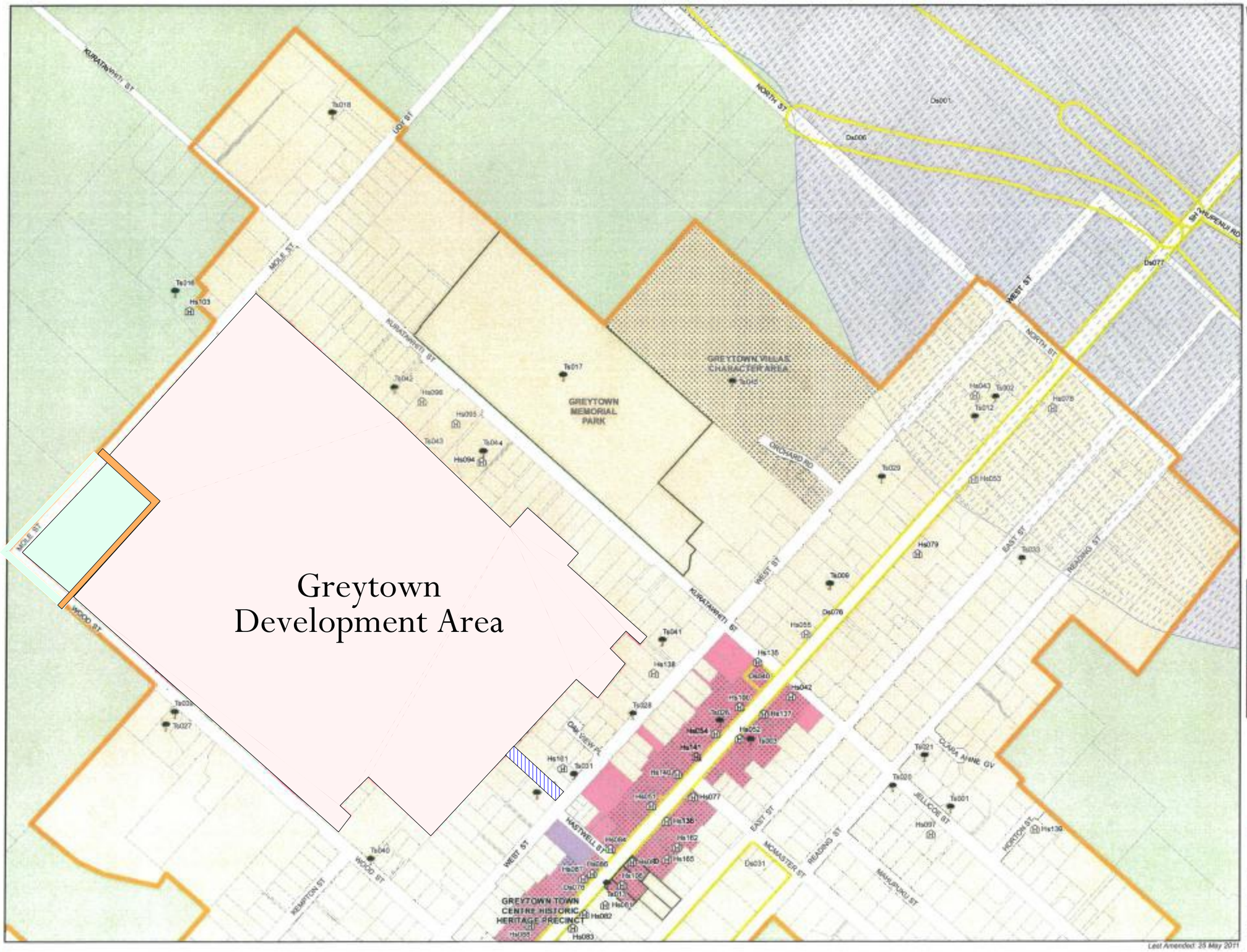
16 10 2017



Cross Section 1
Spine (Collector) Road

Greytown Development Area Structure Plan

Amendment to Planning Map 59



Wairarapa Combined District Plan

South Wairarapa
GREYTOWN

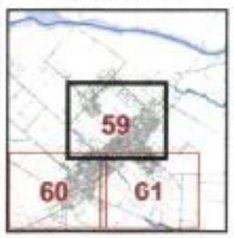
59

N

400
300
200
100
0
Metres

SCALE 1:5,000

LOCATOR MAP



MASTERTON DISTRICT COUNCIL

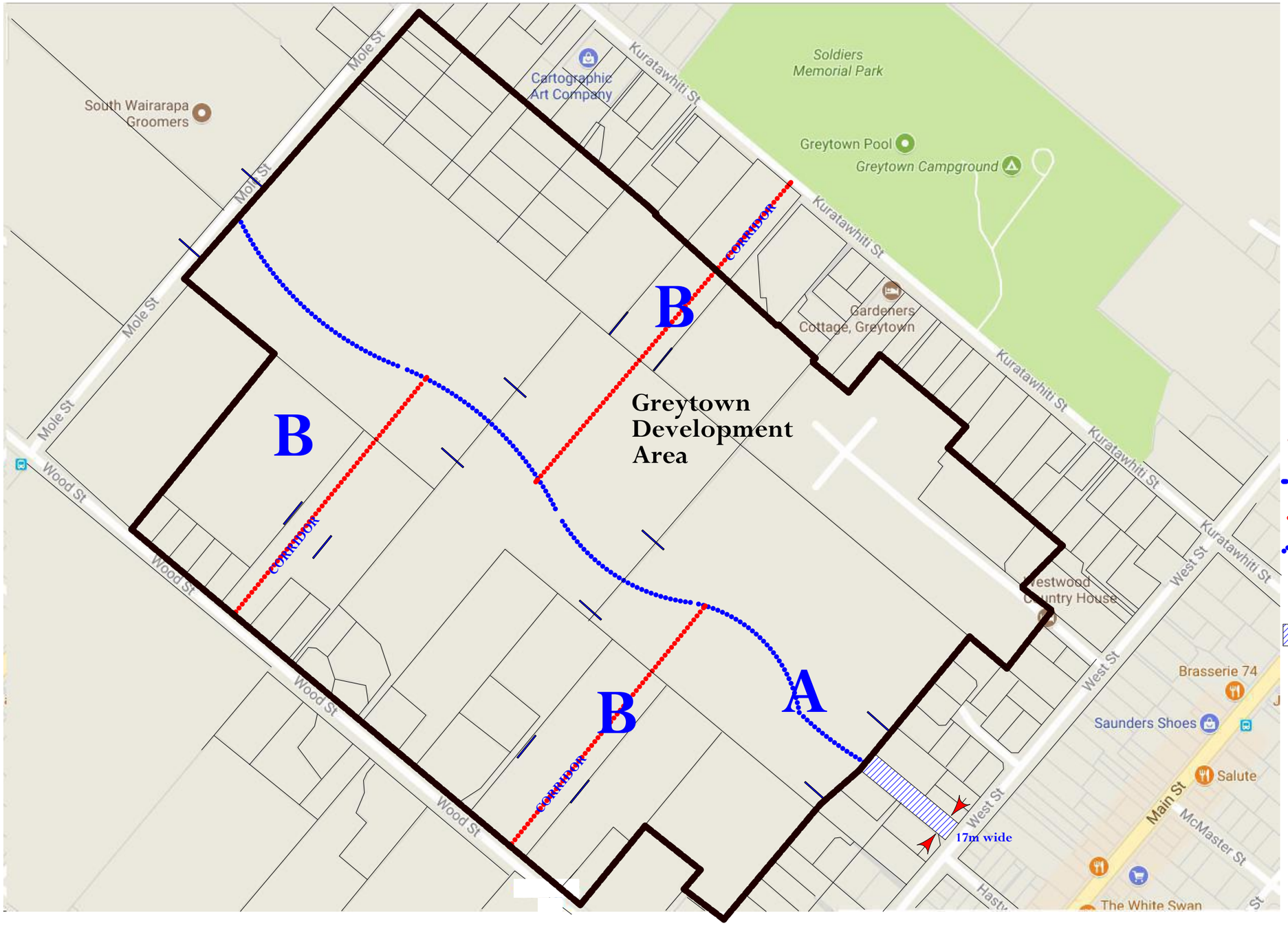
SOUTH WAIRARAPA DISTRICT COUNCIL

17m wide Designated Road

16 10 2017

Greytown Development Area Structure Plan

Layout Plan



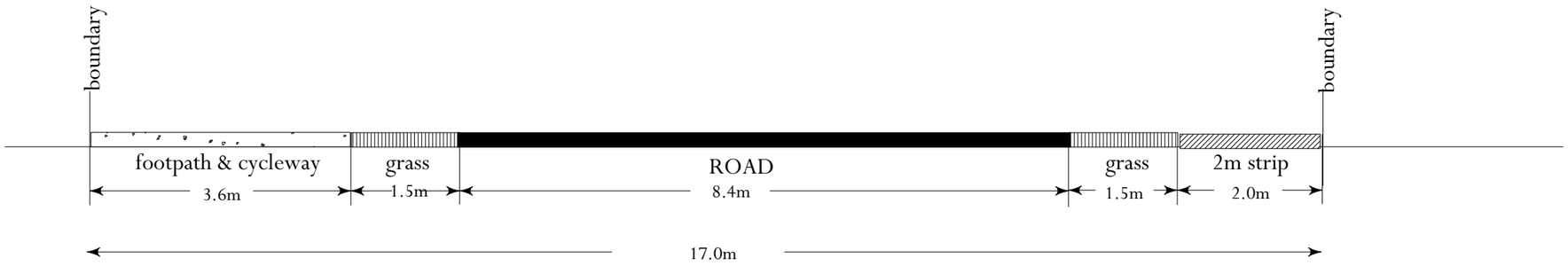
Legend

- Greytown Development Area
- Indicative A Collector Road
- Indicative B Local Road
- Indicative B Local Road
- Connection Point Range
- Designated Road

16 10 2017

Greytown Development Area Structure Plan

Designated Road



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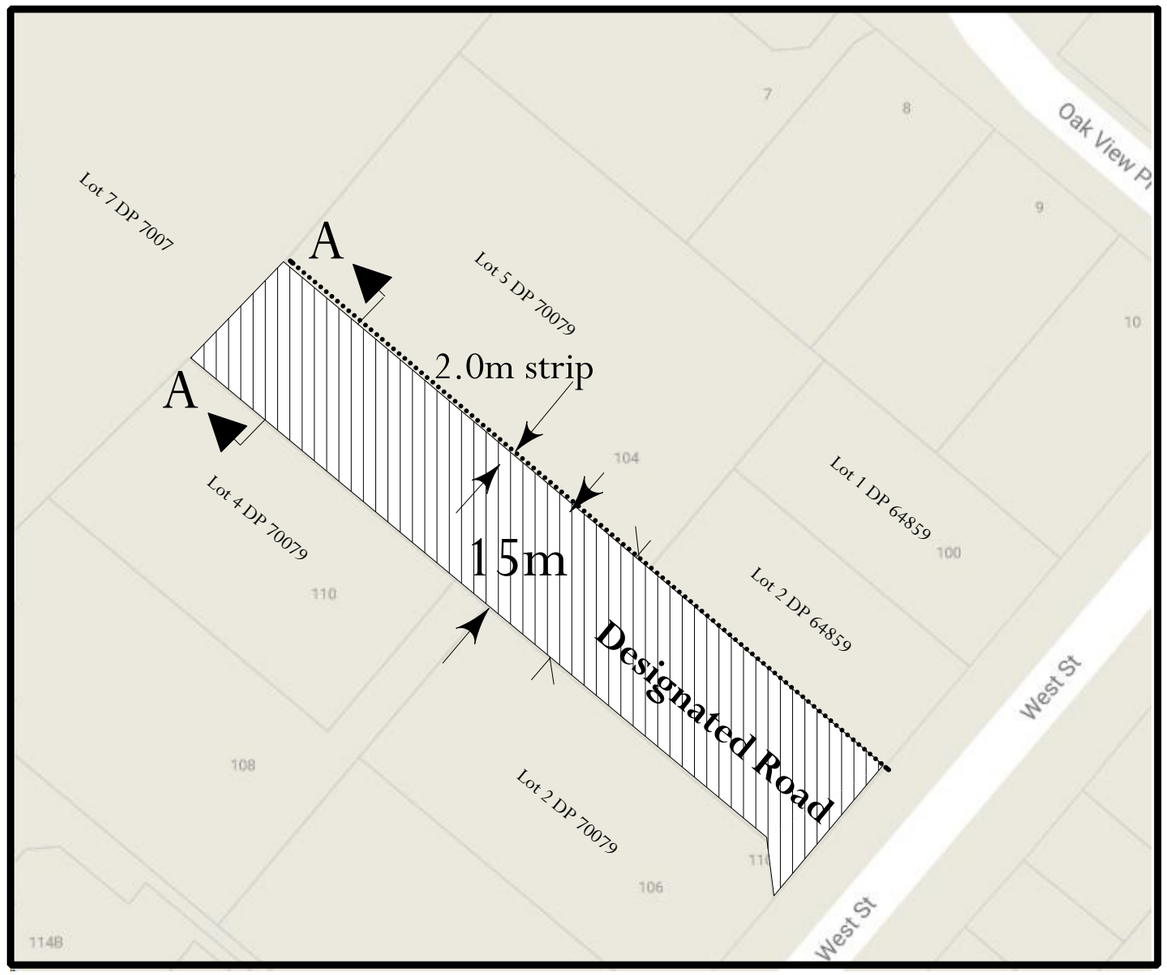

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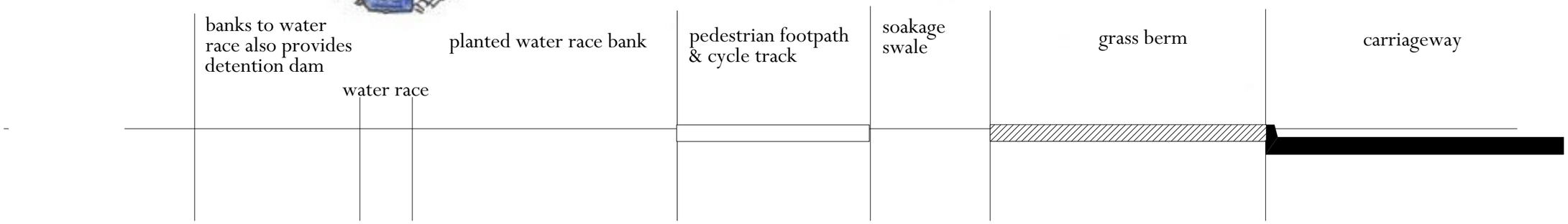
Landscape Perspective Plan



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Appendix 3 – Section 32 Report

Proposed Plan Change No. 9 to the Wairarapa Combined District Plan: Greytown Development Area Structure Plan

Section 32 Resource Management Act 1991 Evaluation Report

16 October 2017

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Report reviewer:

Murray Buchanan, Group Manager Planning and Environment.

For:

Table of Contents

Appendices:

1. Work Brief

1.1 From about 2014 South Wairarapa District Council (Council) has been made aware by developers, surveyors and others involved in land development that the available land for residential development within Greytown was in short supply. Two large private residential subdivision proposals have been lodged with Council which utilise the last available significant areas for development outside of the identified Future Development Area (FDA). In addition, a developer has approached Council wishing to initiate a significant subdivision within the FDA itself.

1.2 Consequently Council decided that it was timely to investigate and complete a structure plan for the Greytown FDA so that the development of this area could proceed and in an orderly and integrated manner.

1.3 A brief of work was prepared which had the primary aim of uplifting the deferred development status currently applied to the FDA in the Wairarapa Combined District Plan (District Plan) and its release for residential development.

1.4 The structure plan was to be designed to ensure there was an integrated approach to the development of the deferred residential land while costs to Council were minimized and/or fully recovered from the developers and high quality infrastructure was put into place to service the area for the long term.

1.5 The key tasks to underpin this structure plan that were set out in the brief included the following;

- An assessment of bulk services requirements (water, stormwater, wastewater)
- A bulk services design (layout, capacity)
- Establishment of the key transport connection points (location of links to network)
- The design of internal arterial/collector roads (layout, capacity)
- The location and design of open space links and areas
- Establishment of applicable design standards for subdivision (lot sizes, land levels, carriageway widths, footpaths, power, communications)
- Establishment of a financial contributions framework (for bulk services/infrastructure)
- Verification that the land is suitable for the proposed use and is not subject to undue risks or costs (require but not limited to information on soils / stability / drainage / vegetation / flooding)
- Preparation of a Plan Change to give effect to all of the above.

2. Statutory Framework

2.1 Prior to the public notification of a plan change, Section 32 of the Resource Management Act 1991 (RMA) requires an evaluation of the Proposed Plan Change. The Section 32 Evaluation Report is to be made available with the Proposed Plan Change.

2.2 Section 32 of the RMA states:

An evaluation report required under this Act must-

- *examine the extent to which the objectives of the proposal being evaluated are the most appropriate way to achieve the purpose of this Act; and*
- *examine whether the provisions in the proposal are the most appropriate way to achieve the objectives by-*
  - *(i) identifying other reasonably practicable options for achieving the objectives; and*
  - *(ii) assessing the efficiency and effectiveness of the provisions in achieving the objectives; and*
  - *(iii) summarising the reasons for deciding on the provisions; and*
- *contain a level of detail that corresponds to the scale and significance of the environmental, economic, social and cultural effects that are anticipated from the implementation of the proposal.*

An assessment must-

- *identify and assess the benefits and costs of the environmental, economic, social and cultural effects that are anticipated from the implementation of the provisions, including the opportunities for-*
  (i) economic growth that are anticipated to be provided or reduced; and
  (ii) employment that are anticipated to be provided or reduced; and
- *assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions.*

2.3 In this case, the "proposal" referred to in Section 32 of the RMA is Proposed Plan Change No. 9: Greytown Development Area Structure Plan to the Wairarapa Combined District Plan, and the "provisions" are any policies, rules or regulations imposed by the Greytown Development Area Structure Plan through Proposed Plan Change No. 9 to the District Plan.

3. Context for Proposed Plan Change No. 9 and Structure Plan

3.1 When the District Plan was publicly notified in 2006 an area of land in Greytown (between Kuratawhiti and Wood Street and between Mole Street and West Street) was rezoned for urban development. This covered approximately 35 hectares of land, in multiple ownerships. Future road or infrastructure connections and development patterns were unknown. As a result, Variation 1 to the District Plan denoted the area as a "Future Development Area" (FDA) (see Figure 1 below) and restricted development within the area until such time as a structure plan was developed.

Figure 1: Part of the Combined District Plan Map 59 showing the Greytown FDA (striped area)

3.2 The District Plan therefore identified the Greytown FDA as an area for urban growth, and the structure plan process was identified as the method to manage urban growth in the area to ensure that good environmental outcomes are achieved. Specifically, Policy 18.3.11(e) of the District Plan states:

"The Greytown Future Development Area has been identified as an area of future urban growth. Growth within this area will be restricted until a Structure Plan has been developed for this area in consultation with the local community and has been approved by the South Wairarapa District Council."

3.3 In addition to this, the explanation in Section 18.3.12 of the District Plan states:

"Large-scale urban development should occur in a planned and structured approach, taking into account the environmental qualities and features of the land, as well as the need to provide strong and efficient connections with the existing urban area. No development should occur within the identified growth

areas until such a comprehensive design process has been undertaken for each area, providing the community with an opportunity to have an input."

3.4 The District Plan also makes provision for a structure plan for the Greytown FDA in Section 20: District Wide Subdivision Rules and Standards. For example, the current lot standards for Controlled Activity subdivisions in Rule 20.1.2(a) Note 2: "Residential Serviced" includes the Greytown FDA; and Controlled Activity Rule 20.1.2(m) states:

"Any subdivision within the Greytown Future Development Area shall be in accordance with the Structure Plan for this area."

Furthermore, Discretionary Activity Rule 20.1.5(e) states:

"Subdivision within the Greytown Future Development Area that Is not consistent with the Structure Plan for this area."

3.5 Additionally, the District Wide Land Use Discretionary Activity Rule 21.6(k) states:

"Any activity within the Greytown Future Development Area that is not consistent with the Structure Plan for this area."

3.6 Other existing references in the District Plan to a structure plan for the Greytown FDA include:

- Chapter 26: Information to be supplied with Resource Consent Applications 26.3.4 Subdivision (xxiv) *"For subdivision within the Greytown FDA, an assessment of how the proposal is consistent or otherwise with the Structure Plan for the area."*
- Chapter 26: Information to be supplied with Resource Consent Applications 26.3.7 Discretionary and Non-Complying Activities *(b) Greytown Future Development Area (i) "Any application for land use consent must include an assessment of how the proposal is consistent or otherwise with the Structure Plan for the area."*

3.7 Through Variation 1 to the District Plan, a number of appropriate provisions were inserted into the District Plan in anticipation of a structure plan being developed for the Greytown FDA. However, until now that structure plan had not been developed.

3.8 The current general rule hierarchy of the District Plan for subdivision within the Greytown FDA is considered satisfactory in enabling development either in accordance or otherwise with the Greytown Development Area Structure Plan.

4. Summary of Proposed Plan Change No. 9

4.1 The proposed changes to the Wairarapa Combined District Plan (District Plan) as part of Proposed Plan Change No. 9 are summarised below as follows:

a) To include the Greytown Development Area Structure Plan as Appendix 15 to the District Plan;

b) Change Planning Map 59 of the District Plan to exclude the property on the corner of Wood Street and Mole Street, Greytown (Lot 15 DP 310) from the Greytown Development Area and re-zone the property back to the Rural Zone (Primary Production) as shown in Figure 2 below;

c) Change Planning Map 59 of the District Plan to uplift the "Future" deferred development status from the Greytown Future Development Area (remove the FDA stripes notation) and rename and denote the area as the Greytown Development Area as shown in Figure 2 below;

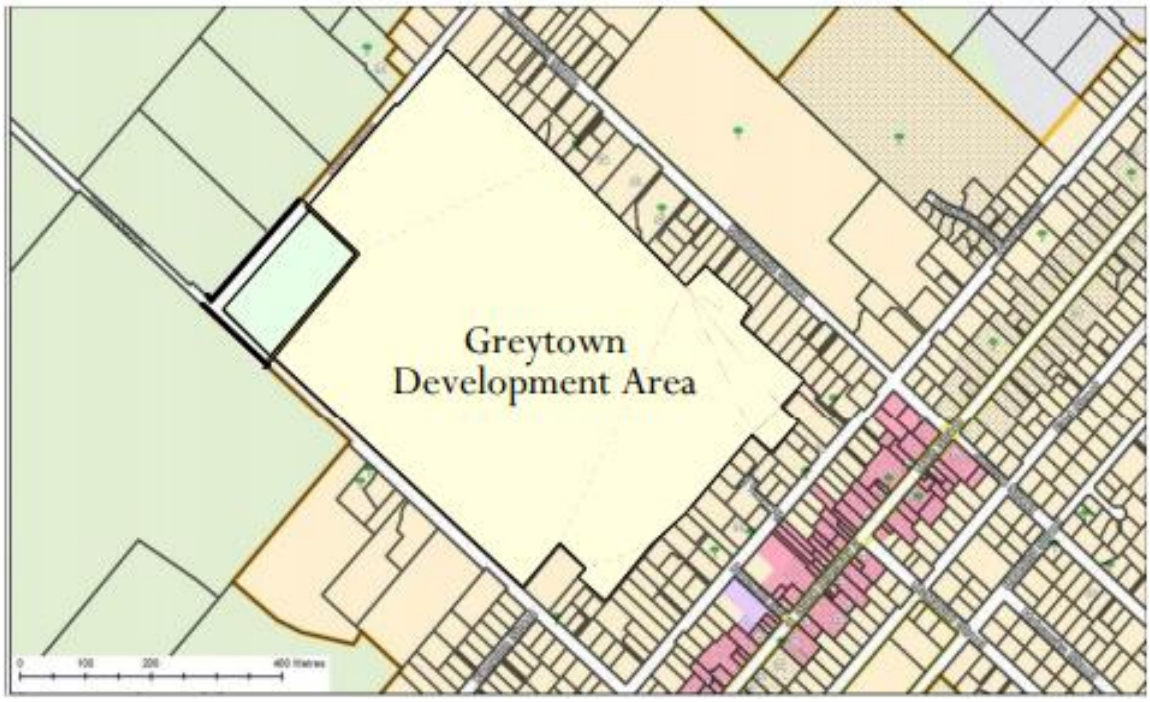

Figure 2: Part of District Plan Map 59 showing the Proposed Plan Changes

d) Remove all references to the Greytown Future Development Area in the District Plan by changing the name to the Greytown Development Area;

e) Amend Policy 18.3.11(e) of the District Plan to read as follows:

"To manage the form and pattern of subdivision and development within the Greytown Development Area to achieve the objectives of the approved Structure Plan for the area."

f) Designate the 15m wide access leg off West Street (Lot 7 DP 70079) and a 2m wide strip on the northern adjoining parcels of land (Lot 5 DP 70079 and Lot 2 64859) shown hatched in the Notice of Requirement as "road" in accordance with Section 168A of RMA as shown in Figure 3 below.

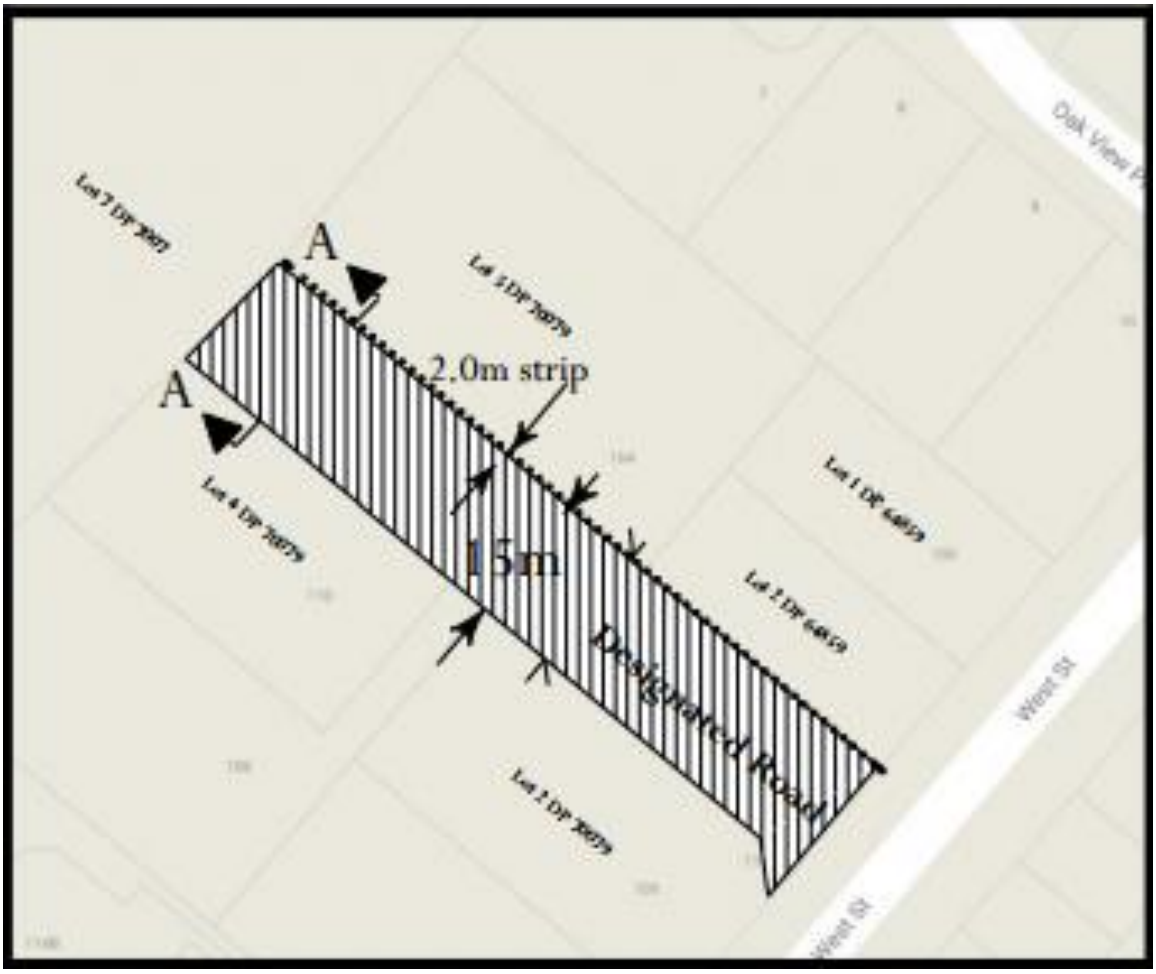

Figure 3: Plan of Notice of Requirement under S. 168A of the RMA: land to be designated as "road"

4.2 The development of the Greytown Development Area Structure Plan is addressed throughout this report.

4.3 The proposed change to Map 59 to exclude the property on the corner of Wood Street and Mole Street, Greytown from the Greytown Development Area is addressed in Section 9 of this report.

4.4 Further proposed changes to Map 59 to rename the area as the Greytown Development Area, and changes to the text to remove all references to the "Future Development Area" are considered appropriate because of the actual development of a Structure Plan for the area as prescribed.

4.5 Furthermore, now that a Structure Plan has been developed for the Greytown Development Area, Policy 18.3.11(e) of the District Plan as it currently reads is

obsolete. It is therefore recommended to amend Policy 18.3.11(e) of the District Plan as outlined in e) above.

4.6 The decision to issue a Notice of Requirement for the first section of legal road from West Street, as outlined in f) above, is considered necessary for the safe and efficient functioning or operation of the road (public work) in accordance with Section 168A(1) of the RMA. It is noted that alternatives to designating the land as road were considered, as were variations in the designation location and width. The proposed road designation over the 15m wide access leg off West Street will provide certainty that access to the Development Area will be maintained as this access into the Development Area is an integral part of the Structure Plan. The additional 2m in width is considered necessary to allow for the safe and efficient functioning of the road and for residential amenity improvements such as footpaths/cycleway and grass verges, which are consistent with the overall Objectives of the Structure Plan and the continuation of the 'spine' road. It was decided not to require an additional 5m width (to create a 20m wide road reserve) for the access leg as this would greatly reduce the amenity to the residential sites adjoining it and potentially encourage speeds and driver behaviour that is not desirable for a residential neighbourhood. The option to designate part of the properties on the southern side of the existing access leg was considered, but discounted as this would require the removal of houses at greater cost to Council. It was also decided not to continue the designation over the entire length of the 'spine' road as there is far more flexibility to the exact location of the road due to the land configuration. It is also desired by Council that the choice of location be left up to the landowners and developers but within a wide corridor.

5. Structure Plan Development Process

5.1 The following diagram outlines the process that has been followed so far in the development of the Greytown Development Area Structure Plan:

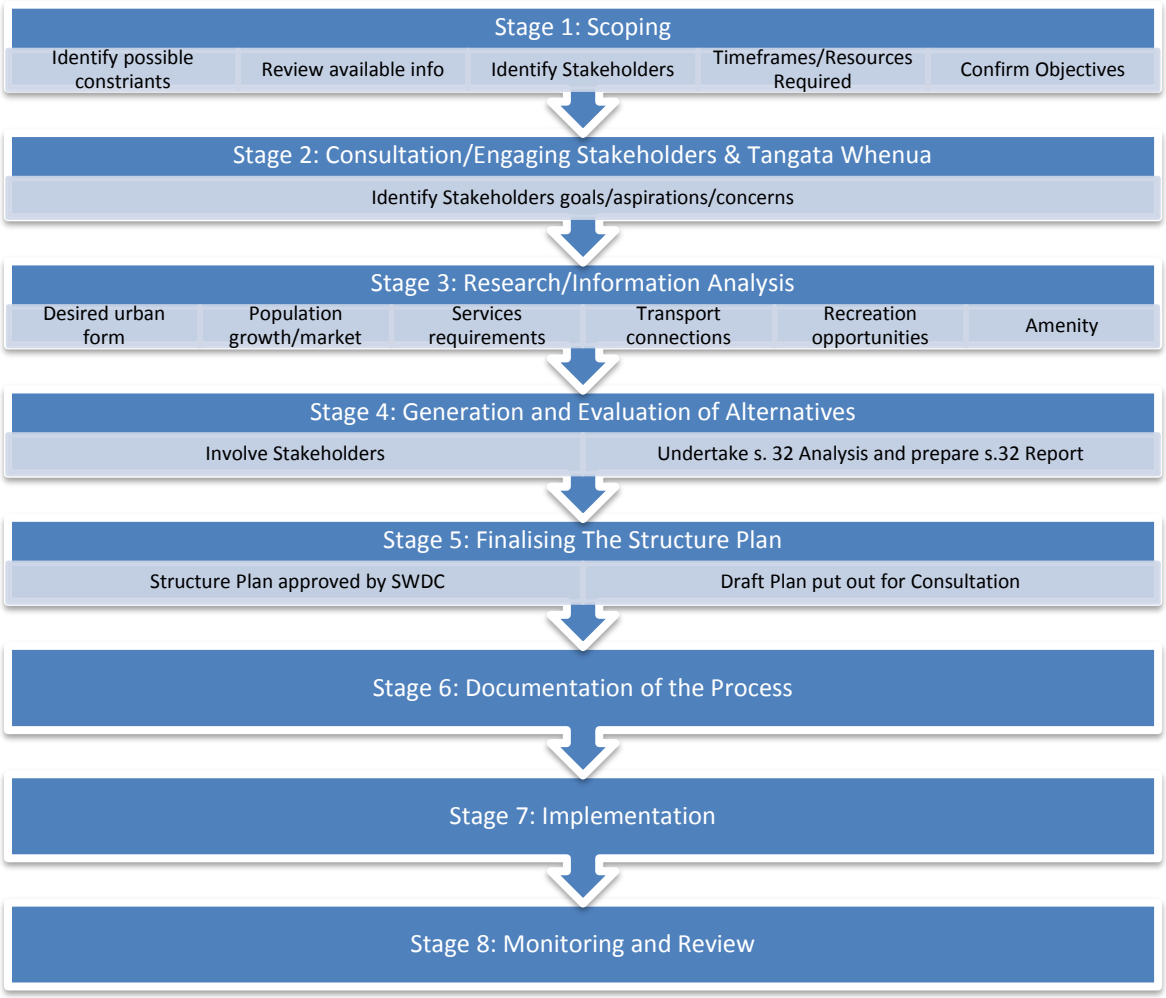

Figure 4: Greytown Development Area Structure Plan Process diagram

5.2 The development of this process was guided by information from the Quality Planning website, which is a resource designed to promote good planning practice in New Zealand, and to meet the requirements of the Council "Brief" which set out the work required.

6.0 Stage 1: Scoping

6.1 The Greytown FDA Structure Plan Stage 1 Scoping Report, dated February 2017 (included as Appendix 1), set out the reasons for developing the Structure Plan for the Greytown Development Area and confirmed that there is a demand for land for residential development in Greytown. The report also stated that the Council wanted to be reassured that the land identified in the FDA was suitable for residential development.

6.2 The report identified a number of possible constraints that may result in an undue level of risk or impose unreasonable costs making residential development in the Greytown FDA impracticable, including:

- soil contamination from previous land uses
- flooding
- soil suitability
- land stability
- heritage features
- vegetation
- waterways, drains

6.3 The formation of the above list of possible constraints was influenced by the first round of consultation with Stakeholders at the landowner meeting in November 2016, including specific work on the load bearing capacity of soils for residential housing development and the commissioning of a Traffic Impact Assessment (TIA).

6.4 With respect to the assessment of risk and hazards, it is noted that the Wellington Regional Policy Statement (RPS) has specific objectives and policies relating to this as follows:

Objective 19 of the RPS seeks to reduce the *risks and consequences to people, communities, their businesses, property and infrastructure from natural hazards and climate change effects.*

Policy 29 is directed towards district and regional plans *avoiding inappropriate subdivision and development in areas at high risk from natural hazards.*

Policy 51 requires the *risks and consequences of natural hazards on people, communities, their property and infrastructure shall be minimised, and/or in determining whether an activity is inappropriate particular regard shall be given to:*

(a) the frequency and magnitude of the range of natural hazards that may adversely affect the proposal or development, including residual risk;
(b) the potential for climate change and sea level rise to increase the frequency or magnitude of a hazard event;
(c) whether the location of the development will foreseeably require hazard mitigation works in the future;

(d) the potential for injury or loss of life, social disruption and emergency management and civil defence implications – such as access routes to and from the site;
(e) any risks and consequences beyond the development site;
(g) avoiding inappropriate subdivision and development in areas at high risk from natural hazards;
(h) the potential need for hazard adaptation and mitigation measures in moderate risk areas; and
(i) the need to locate habitable floor areas and access routes above the 1:100 year flood level, in identified flood hazard areas.

Policy 51 aims to minimise the risk and consequences of natural hazards events through sound preparation, investigation and planning prior to development. This policy reflects a need to employ a precautionary, risk based approach, taking into consideration the likelihood of the hazard and the vulnerability of the development.

6.5 In addition to this, the RPS also has objectives and policies that are relevant to protecting Historic Heritage from inappropriate modification, use and development; managing the design and function of Regional Form; reducing waste; using fresh water efficiently; and controlling activities on contaminated land. These matters have been considered through the Structure Plan development process.

6.6 The Stage 1 Report concluded, based on the analysis undertaken, that the Greytown FDA was not subject to undue public risks or costs that deemed residential development in the area impracticable. The report recommended that the Structure Plan should proceed to the next stage of development.

6.7 Since the release of the Stage 1 Scoping Report, community representatives have been working with the Wellington Regional Council to reassess the current flood hazard modelling for Greytown. Further modelling to a greater degree of detail is likely to be undertaken, resulting in some form of flood protection for the wider Greytown township. It is considered that any potential flood risk for land within the Greytown Development Area may be reduced as a result of this work.

6.8 Also since the release of the Stage 1 Scoping Report, further soil testing has been undertaken on the property on the corner of Wood Street and Mole Street, Greytown (Wilks Block). The results of this testing and the affect the results have on the Greytown Development Area and Structure Plan are addressed in Section 9 of this report.

7.0 Stages 2 and 3: Consultation, Research and Information Analysis

7.1 The Greytown FDA Structure Plan Stage 2: Interim Report, dated June 2017 (included in Appendix 2), summarises the consultation and research undertaken.

7.2 Since the release of the Stage 2 Interim Report in June 2017, further consultation has been undertaken with landowners within the Greytown Development Area, both individually in some cases and at a landowner consultation meeting at the Greytown Community Centre in August; the Greytown Community Board; Wellington Regional Council staff; local iwi representatives; Councillors and Council staff.

7.3 It is noted that the Papawai Marae Committee, the local iwi authority consulted, have raised a concern regarding the effects the additional development may have on the management of the Wastewater Treatment Plant, which is in the Papawai area. Such effects are managed under resource consents that Council requires from the Wellington Regional Council. They have also raised that the development of the Structure Plan area will be a 'greenfield' type development and as such Taonga (treasure or prized possession) or Koiwi (skeletal remains) may be discovered. The standard Maori Heritage conditions of consent can be imposed at time of subdivision, as this is a matter over which Council has control or discretion.

7.4 It is intended to present the Proposed Plan Change to the Papawai Marae Committee and the Council's Maori Standing Committee once it has been approved to proceed by Council.

7.5 Through all the consultation with Stakeholders, including landowners within the Greytown Development Area, local Iwi, local surveyors, local real estate agents, the Greytown Community Board, Councils, and government agencies, the following tasks initially identified by Council were confirmed as the planning objectives for the Greytown Development Area Structure Plan:

- integrated resource management across land in different ownership
- provision of certainty to land owners and Council
- setting of the general layout and form of development recognising owner preferences where possible
- achievement of good urban design
- coordinated infrastructure provision
- setting the level of financial contributions by quantifying the costs of infrastructure, identifying who is responsible for those costs and timeframes
- meeting Councils Section 32 of RMA duties by assessing costs, benefits and alternatives
- development that is consistent with the design adopted by the Structure Plan.

7.6 Also through consultation with stakeholders, the following goals were confirmed for the Greytown Development Area:

- To maintain Greytown's 'village' and heritage character
- To maintain Greytown's landscape character through features including large/mature trees, vegetation, gardens, reserves and openness
- To provide for efficient transport connections – enhance how roads, footpaths and walkways and cycling networks work together and link to existing networks including access to buses and trains
- Allowing for diversity within the area.

7.7 These stakeholder goals have also been included in the Greytown Development Area Structure Plan as objectives.

7.8 The achievement of the above objectives of the Greytown Development Area Structure Plan will certainly go a long way to meeting the purpose of the RMA: *to promote the sustainable management of natural and physical resources. This means managing the use, development and protection of natural and physical resources in a way, or at a rate which enables people and communities to provide for their social, cultural and economic well-being while sustaining those resources for future generations, protecting the life supporting capacity of air, water, soil and ecosystems, and avoiding, remedying or mitigating adverse effects on the environment.* The process of the development of the Structure Plan in itself is consistent with the requirements to promote the purposes of the Act.

7.9 In contrast to the assessment of subdivision proposals, which are developments generally held in the same ownership, the Greytown Development Area involves land that is owned by a number of different people. The Structure Plan, by providing a framework for the management of the Greytown Development Area as a whole, allows for the integrated management of natural and physical resources across property boundaries, and between the Development Area and the existing adjoining residential area. In particular, the Structure Plan provides for the integrated management of infrastructure resources including public services and roading connections. The Structure Plan also provides for a consistent approach to the general layout and form of development within the area, promoting good urban design or form.

7.10 One of the desired ends of the Structure Plan is to achieve good urban design. The Quality Planning website suggests using the NZ Urban Design Protocol, which is a platform to make New Zealand towns and cities more successful through quality Urban Design. The protocol identifies 7 essential design qualities (the 7 c's) that together create quality urban design as follows:

- *Context – seeing that buildings, places and spaces are part of the whole town, have a relationship to their setting, fit with and enhance its surroundings*
- *Character – reflecting and enhancing the distinctive character, heritage and identity of our urban environment*
- *Choice – ensuring diversity and choice for people*
- *Connections – enhancing how different networks link together for people*
- *Creativity – encouraging innovative and imaginative solutions*
- *Custodianship – ensuring design is environmentally sustainable, safe and healthy, manage land wisely*
- *Collaboration – communicating and sharing knowledge across sectors, professions and with communities*

7.11 The following table is a summary of how the 7 design qualities of the New Zealand Urban Design Protocol relate to Greytown, the Greytown Development Area (GDA) and the Structure Plan.

UD Protocol 7 C's	How they relate to Greytown and the GDA
Context	Want the GDA to fit with and enhance its surroundings
Character	GDA to recognise Greytown's distinctive 'village' heritage character. Built heritage and mature trees/ green growth/reserves/gardens/openness/ landscape all form part of town's character
Choice	Ensure Diversity / Flexibility and choice for people – opportunities for all (consider old/young, families/single, varying incomes, people with disabilities)
Connections	Easy to get around/compact/close to town centre – enhance how roading/walking/ cycling networks link together
Creativity	Innovative/ creative citizens – imaginative solutions
Custodianship	Environmentally sustainable design (minimize adverse effects on natural/cultural systems - manage land wisely (maximise efficiency of land use and infrastructure)
Collaboration	Communication /knowledge sharing. Genuine engagement with community/ local iwi

Table 1: NZ Urban Design Protocol 7 C's (Quality Planning Website) relation to Greytown and the Greytown Development Area (GDA)

7.12 The absence of a structure plan for the Greytown Development Area until now has meant Council has been unable to appropriately fulfil its duties under the RMA for the area. Landowners within the area have been largely restricted if wishing to undertake development. The development that has already occurred has been without a structure plan to ensure the integrated

management of the entire area, particularly with respect to roading and infrastructure linkages.

7.13 The Greytown Development Area Structure Plan will provide certainty to landowners within the Development Area as to the type of development that is expected and how that development will link with the existing urban environment. Council also have a greater level of certainty in terms of the infrastructure requirements in the area. In particular, Council now know the actual cost of that infrastructure and any upgrades required, and the likely yield of Financial/Development Contributions from the Greytown Development Area.

7.14 Council also know that, by releasing the area for residential development, there will be a significant benefit to the community. In economic terms, the residential development of the Greytown Development Area to an expected density of around 400 dwelling units will provide approximately $500 million to the local economy over the next 10 to 15 years. This economic benefit reflects the value of the land developed into housing along with the flow on income effects of an increased population (e.g. for Council 400 more ratepayers; for businesses approximately 1000 more consumers).

7.15 The background work undertaken in the scoping exercise, the research and analysis of information gathered through consultation with landowners, local surveyors, local real estate agents, and reports such as the Preliminary Soil Investigations (PSI) for soil contamination, Traffic Impact Assessment (TIA), and land valuation reports all form the foundation for the development of the provisions for the Greytown Development Area Structure Plan.

8.0 Stage 4: Development and Evaluation of Alternatives

8.1 The Quality Planning website also provides some useful guidance information on Section 32 RMA reporting on the development and evaluation of alternatives as follows:

The development of alternatives should be guided by:

- *Consistency with the overall objectives and outcomes wanting to be achieved*
- *The stakeholder goals, concerns and aspirations identified during consultation*
- *The ability to overcome any constraints*
- *The ability to meet statutory duties under the Resource Management Act and Local Government Act*

In evaluating the alternatives the following should be considered:

- *How well each alternative meets the objectives and outcomes wanting to be achieved*
- *How well each alternative achieves stakeholder goals*
- *The degree to which adverse environmental effects are avoided*
- *Which alternative is the most cost effective, especially in the provision of key infrastructure*

8.2 Effects can be classified generally as a cost or benefit. The Quality Planning guidance also states that:

Section 32 does not require the evaluation of the impact of provisions on all individuals. Costs and benefits can be assessed based on generic impacts on Stakeholder groups.

8.3 The following sections of this report assess the provisions that form the Greytown Development Area Structure Plan and Proposed Plan Change No. 9 to the District Plan.

9.0 Extent of Greytown Development Area Structure Plan

9.1 As outlined in the Stage 1 Scoping Report, Council engaged Esther Dijkstra of EcoAgriLogic Limited to undertake a Preliminary Site Investigation (PSI) of potential soil contamination across the Greytown FDA. This investigation assessed the soils for their intended residential use and meant analyzing the previous land use and undertaking soil sampling.

9.2 Activities such as soil disturbance, change of use or subdivision of potentially contaminated land are regulated under the Resource Management Regulations 2011 (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) ('the NES'). Under the NES, land is considered to be actually or potentially contaminated if an activity or industry on the Ministry for the Environment's Hazardous Activities and Industries List (HAIL, 2011) is more likely than not to have been undertaken on that land. The Wellington Regional Council's (WRC) Selected Land Use Register (SLUR) shows parts of the Greytown FDA as having a verified history of hazardous activity or industry (refer Figure 5 below).

9.3 The Stage 1 Scoping Report concluded that all but one site tested within the FDA, that being the Wilks Block on the corner of Wood Street and Mole Street, Greytown (Lot 15 DP 310), shown with the blue line in Figure 5 below, had concentrations of the analysed contaminants that do not exceed applicable residential NES standards.

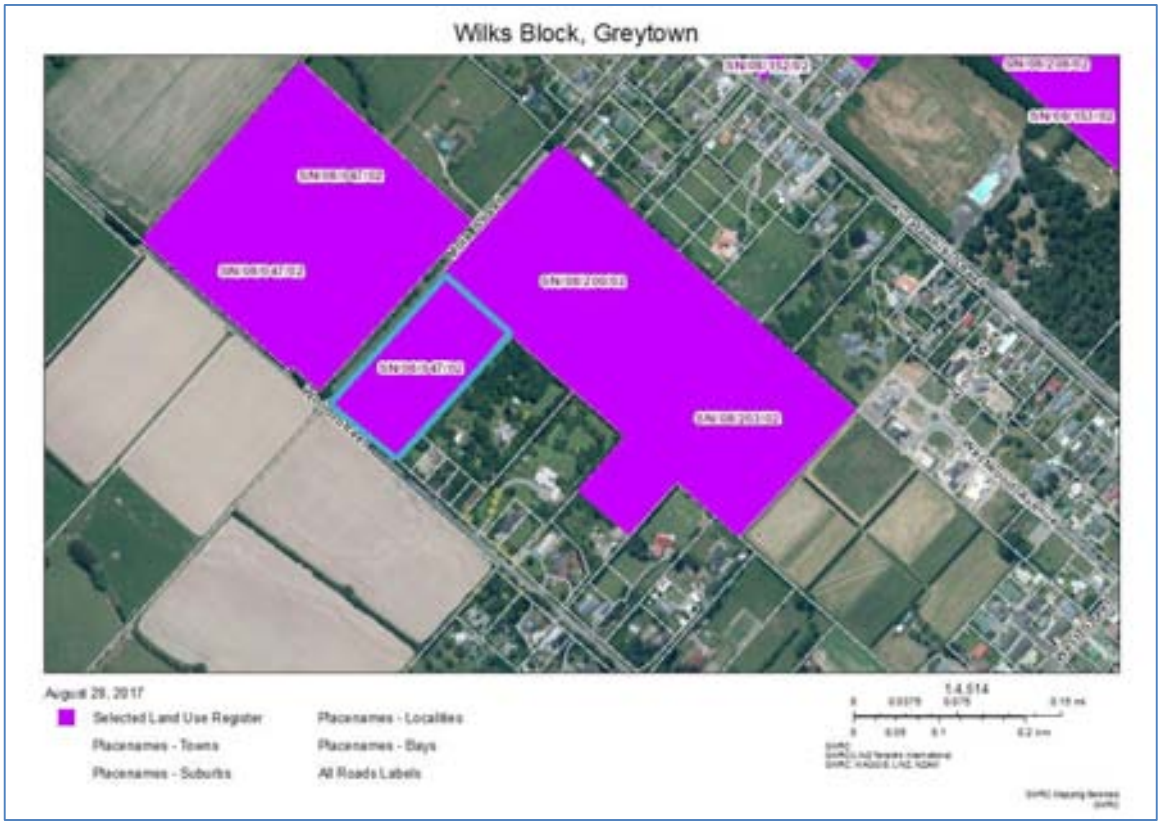

Figure 5: Location of SLUR sites within and relative to the GDA and showing the Wilks Block (blue line)

9.4 Due to the initial findings from the composite samples from the Wilks Block, particularly the levels of arsenic that well exceeded the applicable NES (National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 for residential development, a more detailed site investigation was considered necessary to determine whether in fact the site on the corner of Wood Street and Mole Street, Greytown is suitable for the intended residential use. A further Preliminary Soil Investigation (PSI) Report prepared by EcoAgriLogic Limited, dated 8 September 2017 (included in Appendix 3), outlines the additional testing of soils that was undertaken at the site (Refer to summary in Figure 6 and corresponding Table 2 below).

Figure 6: Wilks Block sampling grid 16 August 2017. Blue sampling locations represent sampling depth 0-15 cm, yellow sampling locations represent sampling depth 0-15 cm, 15-30 cm and 30-45 cm

9.5 The table below provides a summary of the levels of total recoverable arsenic levels (mg/kg) detected from the further testing of the site on the corner of Wood Street and Mole Street, Greytown.

Sampling sites (refer Figure 6)	Sampling depths and levels of arsenic found (mg/kg)		
	0-15cm	15-30cm	30-45cm
1.1	78		
1.2	106	72	14
1.3	92		
2.1	88		
2.2	90	38	10
2.3	72		
3.1	79		
3.2	81	35	8
3.3	117		
4.1	76		
4.2	74	46	9
4.3	66		
5.1	81		
5.2	85	57	9
5.3	105		
6.1	64		
6.2	63	61	32
6.3	61		

Table 2: Arsenic levels found on the Wilks Block, Greytown (Source: PSI Report prepared by EcoAgriLogic Limited, 8 September 2017)

9.6 The results show that arsenic concentrations in the top soil (0-15cm) of all the sample locations is well above the arsenic soil contamination standard for residential use (based on the scenario of 10% of all produce consumed is home-grown), which is 20 mg/kg (MfE 2012). The arsenic concentration in the subsequent layer (15-30cm) is also above the soil contamination standard (MfE 2012). The arsenic concentrations in the layer from 30-45cm is below the soil contaminant standard (MfE 2012) for all samples apart from sampling location 6.2.

9.7 The recommendation of the same PSI Report states:

After a site inspection and considering the previous site activities and soil testing results, this investigation concludes that the soil at Wilks Block Greytown, at least to a depth of 30 cm, is significantly contaminated with arsenic and to a lesser extent with lead, with respect to applicable residential National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES, 2012). The arsenic concentrations detected pose a potential risk to future users of the site contacting and ingesting the soil. It is recommended that the site is remediated before land use changes to

residential use. At this point in time, the only effective remediation technique to lower the arsenic concentration in the soil of the site to the applicable residential National Environmental Standard for arsenic is physical remediation by removing the soil and replacing it with clean topsoil. The contaminated soil will need to be disposed of in a certified landfill.

9.8 Further explanation of remediation options within the same PSI Report states that:

Physical remediation by removing/excavating the contaminated soil and replacing it with clean top soil is the most thorough and quick, but also very expensive. To remove the soil to a depth of 30 cm over the entire block the total volume will be approximately 5700 m^3.

9.9 Other possible remediation options to achieve the safe arsenic concentration of 20mg/kg for residential use investigated in the PSI Report include: capping the contaminated soil with a clean layer of soil of at least 30cm and putting a protective foil between the layers; vertical mixing to a depth of 2.2m; biological remediation; soil screening and soil washing; or chemical remediation. All of these methods were discounted as viable remediation options within the PSI report due to risk factors or the unsuitability for residential use after remediation, the prohibitive cost, or impracticability or ineffectiveness.

9.10 It is noted that the NES for Assessing and Managing Contaminants in Soil to Protect Human Health applies when a change in the use of land occurs. Currently the site on the corner of Wood Street and Mole Street is still planted in apple trees, a use consistent with the historic Rural zoning of the land and adjoining properties. Although the implementation of the Structure Plan will not immediately result in a change of use of the land i.e. from the current use as an orchard to a residential use, the intention of the Structure Plan is to facilitate residential development, uplifting the "deferred development" status and release the land for that purpose. Based on the PSI, the limited remediation options available to achieve the NES standard for residential use, and bearing in mind that the contamination is spread over the entire site, it is considered that the potential risk from soil contamination on residential use is too high to zone the site Residential.

9.11 The assessment provided in the PSI report also states that arsenic is not very mobile, so there is little concern of contamination to adjoining properties from arsenic leaching through surface and groundwater. Any change in activity on the site that would include the removal of the trees i.e. cropping, which may result in dust, is considered to be satisfactorily managed by the NES. Furthermore, the PSI report states that any contamination risk from contaminated wind-blown soil particles and dust is low.

9.12 With respect to potential reverse sensitivity issues from rural activities such as noise, odour or spray drift on adjoining residential properties, it is noted that

only a small part of the Structure Plan Area will directly adjoin the Rural Zone. The residential dwelling on the property at 73 Wood Street is also owned by Mr Wilks. The existing shelter belt trees along the boundary between the Wilks Block and the adjoining property at 71 Wood Street provide a degree of physical separation and the existing water race and future road planned to the north-east of this property also provides some physical separation between the Rural and Residentially zoned sites. Furthermore, horticultural and agricultural industries in New Zealand are now subject to a number of best practice regulations such as "Growsafe" and "Assure Quality" which better manage any such potential adverse effects from activities such as spraying.

9.13 It is therefore recommended that the Wilks Block, the site on the corner of Wood Street and Mole Street, Greytown (Lot 15 DP 310), be excluded from the Greytown Development Area Structure Plan and the site revert back to the Rural Zone (Primary Production). Proposed Plan Change No. 9 therefore includes a change to Planning Map 59 of the District Plan to change the boundary of the Rural and Residential Zones as shown in Figure 2 of this report.

9.14 As the Wilks Block is at the far extent (corner) of the Greytown Development Area, with Rural zoned properties directly across Wood Street and Mole Street, and a total area of approximately 1.9 hectares (development potential of 20/30 residential lots) its removal from the Greytown Development Area does not affect the overall workability of the Greytown Development Area Structure Plan.

10.0 Vehicle, cycle and pedestrian connectivity

10.1 Concerns about connectivity were raised at the November 2016 landowner meeting and during individual meetings with a number of different landowners. With limited obvious existing access points into the Greytown Development Area, and the overall potential for development within the area, GHD Transport Planners, Hastings were engaged to prepare a Traffic Impact Assessment (TIA) for the Greytown Development Area. This assessment was asked to focus on the effects of traffic from the Greytown Development Area out onto existing roads and some advice as to where new traffic routes might be located.

10.2 The GHD TIA report, dated 14 July 2017 (included in Appendix 4), provided the following conclusions and recommendations:

- *This assessment has shown that the proposed development can be supported by the existing road network from a traffic engineering perspective and is unlikely to compromise the safety and efficiency of surrounding roads or intersections.*
- *At this stage, with taking the intensification of the FDA with having 400 lots (recognising the desire to have a mixture of lot sizes ranging from 500 – 1000m2 and keeping consistency with the character of Greytown), the current configuration of the supporting road network at the intersecting roads to SH2 would practically absorb the predicted trip movements during the peak hours.*
- *If the proposed trip distribution logic is followed, access points onto the bordering roads will have sufficient sight distances to allow for safe access and egress to the site. Any proposed roads in the FDA should reflect their level and be of similar character as previous developed subdivisions and previous structure plans in the Combined District Plan.*
- *Also giving good access/permeability through-out the FDA for walking and cycling will be beneficial to the connectivity of the FDA to the surrounding infrastructure for those modes.*
- *Existing streetscape on Wood Street should be considered for upgrading to help provide greater consistency of this road.*
- *No other significant affects are anticipated outside the assessment area as a result of the proposed development.*

10.3 The TIA calculates that the predicted traffic generated from 400 lots to be 3600 vehicle movements daily, with a peak hour generation of 340 (vph).

10.4 With respect to trip distribution, the TIA notes:

The development should provide a connection running through the middle, parallel with Kuratawhiti and Wood Streets (connecting West and Mole Streets)... Connectivity from the middle of the FDA and onto either Kuratawhiti or West Street would be critical in providing a level of permeability and

distribution for generated trips, without solely focusing on one point of access into the FDA. Figure 7 below *shows this distribution logic as to which the FDA should cater for.*

Figure 7: Trip Distribution Logic (Source: Traffic Impact Assessment prepared by GHD, 14 July 2017)

10.5 The Council's Roading Manager has provided estimated costings on necessary upgrades to Wood Street and Mole Street, and internal roading costings which are addressed in Section 14: Financial/Development Contributions of this report.

10.6 The roading pattern and design of roads required by the Greytown Development Area Structure Plan reflect the consultation undertaken, and include components suggested by GHD, landowners, developers, surveyors and the Greytown Community Board.

10.7 Below is an evaluation table of the specific connectivity provisions of the Greytown Development Area Structure Plan Design Guide:

Specific Connectivity Provision	Benefits and Costs of including the Provision
'Spine' road (collector road) connecting West Street to Mole Street	Benefits: • Reflects the Traffic Distribution Logic prepared by GHD • Provides for connectivity to the existing urban environment, across property boundaries, and through the entire Development Area – consistent with the Objectives of the Structure Plan • Provides degree of certainty to landowners, developers and Council

	• Adjoining lineal reserve provides for recreational opportunities for residents • Amenity improvements • Incorporating the water race on land adjacent to the road corridor increases stormwater retention capacity • Planted bunds on adjacent lineal reserve will help maintain landscape values and openness – consistent with Objectives of the Structure Plan Costs: • Estimated (2017) cost of land for 'spine' road = \$45/m^2 = \$945,000 (Source: Baker Ag Report dated 28 August 2017) • Road design, including moving water race, creating bunds and planting = increased cost of construction to developer which would need to be compensated by Council • 'Spine' road through properties for a "public good" will result in less development potential on those properties
'Spine' road to be named "Farley Avenue" (N.B. Council is empowered to name roads under S. 319A of the LG Act 1974)	Benefits: • The name "Farley Avenue" reflects the historic connection the Farley family have with the land as previous owners, the location of the Farley Oak tree near the West Street entrance to the road (has significant local meaning) and that trees are to be planted on either side of the road • The Farley family had previously requested that the access leg into 104A West Street have their name attached to it • The Farley family are very happy with the suggestion of the name • The proposed road name meets the guidelines for the selection of new road names in Section 4.3 of Council's "Policy on Naming Public Roads, Private Roads and Rights-of-Way" • The Greytown Community Board and local iwi authority have been consulted over the proposed road name and have no concerns with it • As the road will cross properties in different ownership, consistency of a name for the road is sought and will be provided by the proposed naming at this time Costs: • Other options for the name of the 'spine' road will be foregone • As the road name has not been approved as part of a subdivision, Council will bear the cost of the road sign
'Spine' road to have a minimum legal width of 17 metres	Benefits: • Designation over land under S. 166 of the RMA for a public road provides certainty of access into Development Area

through the access leg from West Street (Designation)	• Road width will ensure the road is able to cater for traffic from the overall development = forward planning • Road width allows for amenity improvements • Sensible to include option to Designate under S. 168A of the RMA in the Plan Change – time and cost saving benefits Costs: • Compensation will be required to landowners which the designation affects • Road greater than minimum standard normally required to service immediately accessed block of land = increased cost to developer which would need to be compensated by Council
Limiting the number of access points off the 'spine' road	Benefits: • Better continuality of the lineal reserve = less uninterrupted visual corridor • Safer for motor vehicle divers, pedestrians and cycle users = less side friction • Reduce crossings/piping of the water race • Lower long term maintenance costs for lineal reserve due to easier access (i.e. mowing) Costs: • Possibly more roading required to access properties at a greater cost to developers
Access from the 'spine' road through to Westwood Avenue	Benefits: • Better connectivity through the entire Development Area - particularly pedestrian access which extends through to Kuratawhiti Street and Soldiers Memorial Park • Options for the distribution of traffic from Westwood Avenue - traffic from the south/heading south more likely to use the 'spine' road than Westwood Avenue • Doesn't change the conclusions of the TIA by GHD (confirmed in email dated 27 September 2017 – included in Appendix 5) Costs: • The exclusiveness character of Westwood Avenue may be reduced
Side roads (local roads) forming connections from the 'spine' road to Wood Street, and Kuratawhiti Street	Benefits: • Reflects the Traffic Distribution Logic prepared by GHD • Further GHD comment *"ensuring at least one access road provided from both Wood Street and Kuratawhiti Street into a spine road would be the key to retain egress and permeability through-out the FDA"* (email dated 27 September 2017 – included in Appendix 5)

	• Provides for connectivity to the existing urban environment, across property boundaries, and through the entire Development Area – consistent with the Objectives of the Structure Plan • Provides degree of certainty to landowners, developers and Council Costs: • Access through properties for the "public good" will result in less development potential on those properties
Heritage type streetlights	Benefits: • Consistent design with the development in Westwood Avenue and Greytown Main Street Heritage Precinct • Reflection of the town's heritage character • Suggestion of the Greytown Community Board Costs: • Potentially more expensive than standard streetlights
Proposed local roads, right-of-way names	Benefits: • Suggested names reflect the history of and have significance to the Greytown area • Input from the Greytown Community Board into names Costs: • Consultation with the Greytown Community Board/Council required
Connections to adjoining land	Benefits: • Provides for connectivity across property boundaries – consistent with the Objectives of the Structure Plan Costs: • Increased cost to developer
Temporary turnarounds	Benefits: • Allows for the safe and efficient flow of traffic • Turnarounds can become features in the road that make roads more interesting Costs: • More land required for roading

Table 3: Assessment of the Costs and Benefits of proposed Connectivity Provisions of the Design Guide

11.0 Reserves Provision

11.1 A main feature of the Greytown Development Area Structure Plan design is a lineal reserve aligned with the 'spine' road running through the land from West Street to Mole Street. This reserve incorporates public facilities and open spaces including a cycle path, pedestrian footpaths, planting bunds, swales, and the water race with planted banks. The reserve will provide public access, amenity improvements and a recreation opportunity, while also helping to control stormwater and incorporating the water race. The long term development of this reserve will benefit all owners within the Greytown Development Area and Greytown as a whole, by maintaining the landscape values and features and openness that are so important to Greytown's character.

11.2 Greytown is considered to be well serviced by reserves acting as passive and active green or open spaces. It is noted that within close proximity of the Greytown Development Area there are the following existing public reserve areas:

- Soldiers Memorial Park, Kuratawhiti Street – which has good access to the Greytown Development Area via a walkway onto Westwood Avenue
- Collier Reserve, West Street – which is not far south of the Greytown Development Area
- Stella Bull Park, Main Street – which is easily accessed from the Greytown Development Area via Hastwell Street
- Kowhai Reserve on East Street
- Arbor Reserve off Main Street

11.3 Section 23.2.5 of the District Plan provides direction for the *purpose* of reserves as:

(a) To provide for the acquisition and development of reserves and open spaces in response to the needs arising from subdivision and development.

(b) To protection conservation values of riparian and coastal margins, and associated water quality and aquatic habitat.

(c) To provide opportunities for public access to and along water bodies including the coast.

(d) To provide recreational opportunities near water bodies.

11.4 The proposed lineal reserve meets all 3 purposes that are relevant (a, c and d above). It is therefore considered that a lineal reserve is very desirable in preference to the provision of further general open space in the form of amenity and passive parks.

11.5 An important point which was considered in relation to this proposal was; for the lineal reserve to function well, the number of vehicle crossing points directly from the 'spine' road would have to be limited or avoided. This issue is addressed above in the connectivity provisions.

12.0 Bulk Services Provision

12.1 Water Supply:

12.1.1 There is a 300 mm diameter main running from Woodside into the southern edge of the urban area. This narrows to a 100 mm diameter main at about East Street. A ring main along Wood, Mole, Kuratawhiti and West Streets serves the Greytown Development Area. In addition, further interconnections to the ring main has been initiated with the provision of a new main in Westwood Ave.

12.1.2 There is a well in the Kuratawhiti Street Park that supplements the water supply of Greytown. This well is not viable in the long run without further investment to meet the full potable water supply standard. Such investment is better utilised and more cost efficient through an increased groundwater take and treatment system at Woodside.

12.1.3 Modelling work undertaken for Council in 2006/2007 confirmed that, with the Greytown Development Area included in the network, Council had provided through earlier investments sufficient water pressure and volume to supply the Greytown Development Area. There are however, potential pressure and fire fighting supply issues around the north western, northern and north eastern extremities of the urban area. While some upgrading of the main is therefore needed, this work has not progressed while the park well remains in use. The modelling work completed around 2007 thus confirmed that the prior investments in the current supply system were more or less adequate.

12.1.4 Having said that, upgrading the 100mm main along West Street between Humphries Street and Kuratawhiti Street to a 200mm main is proposed so as to maintain pressure and supply to all of Greytown.

12.2 Wastewater Disposal:

12.2.1 Council has determined that wastewater infrastructure upgrades in Greytown are required as this infrastructure is running at, or near, full capacity. In its present condition the wastewater infrastructure cannot accommodate further growth in Greytown (including the Greytown Development Area) without creating actual or potential adverse environmental effects.

12.2.2 Council has consequently assessed the development capacity of Greytown. This indicated that approximately 600 additional lots could be created under the current residential zoning of the District Plan (including the Greytown Development Area), however with a more likely level of “infill” level factored in, the anticipated number of new lots was adjusted to 400-450 lots. The services required and cost of upgrading wastewater to service this development in Greytown was calculated.

12.2.3 The following works are deemed necessary to upgrade Greytown's wastewater system, at a cost of approximately $6 million:

- Upgrading the 225mm sewer main from Papawai Road to the Wastewater Treatment Plant
- Extending the sewer main up Papawai Road to East Street, to allow diversion of flows at the south end of Greytown.
- Increasing the pumping flow rate and UV treatment for increased flows.
- Constructing an additional pond at the Wastewater Treatment Plant for increased biological load.
- Developing additional land treatment with associated irrigation equipment for stages 1 and 2 to treat the increased flows.
- Constructing additional deferred storage from increased flows during winter when ground conditions are not suitable for irrigation.

12.2.4 Additionally, the section of 150mm sewer main at the intersection of Market Road and East Street which flows across and into Wood Street is old and high up on the renewal list. It is considered that the best option for servicing the Greytown Development Area is to replace and at the same time upgrade this old section of main with a 225mm main all the way up to Kempton Street. Rather than running all the flow into the 150mm network on West Street, a better option is to connect through 21 Wood Street or close by to that property, to what would become a new 200mm main in Wood Street.

12.2.5 The work done recently to establish the upgrades required for wastewater disposal in Greytown (summarized above) will meet the additional demand on wastewater arising from development within the Greytown Development Area, provided the overall level of development remains within the envisaged level.

12.3 Stormwater:

12.3.1 Greytown does not have a purpose built stormwater disposal network. There is no easy opportunity to form a stormwater system to service the Greytown Development Area that either by-passes the residential area or that could be run through the urban area. Therefore on-site disposal of stormwater is required. Council uses the standards set out in NZS 4404:2010 to "size" such systems. For residential development a primary stormwater system (on site) must be provided which is designed for a 100 year event as there are no secondary flow paths available. Typically, roads have been accepted as secondary flow paths, but in this case they do not lead to a stormwater system or to land beyond the township.

12.3.2 The soakage rate in this area is around 500 mm/hour making it a suitable means of dealing with stormwater from houses. This reflects the one natural advantage of Greytown, which is the generally deep layer of silts/sand over lying gravels at varying depth with the water table typically being around 4 – 5m down.

12.3.3 The capacity of the water race network to naturally capture overland flows and convey stormwater through and from the Greytown Development Area (two branches of the Moroa Water race flowing west-east more or less parallel with Kuratawhiti Street) is not large. There is a reasonable fall along the length of the overall site (parallel to Kuratawhiti Street) and an advantage would be gained by incorporating the water race corridor alongside the road corridor and increasing its potential storage capacity by using a combination of small banks toward the downstream end and scalloping of the sides toward the upstream end.

12.3.4 To help with the overall management of stormwater within the Greytown Development Area it is proposed to have a stormwater soakage swale or similar run alongside the 'spine' road, as shown in Cross Section 1. This has an estimated construction cost of $350,000. This stormwater soakage swale or similar can be designed to ensure the relevant standards (NZS 4404:2010) be applied, such that all stormwater systems are to be designed to provide for a 100 year event. This standard will also be applied to sites within the Development Area.

12.4 The provisions in the Design Guide relating to Infrastructure and Services provision have been kept to a minimum and reflect the summary provided here. More on the costs of providing for services is addressed in Section 14: Financial/Development Contributions of this report below.

13.0 Site Development

13.1 The standards for development prescribed in the District Plan are important in shaping the nature and scale of development and managing the potential adverse effects of future development.

13.2 There are a number of current development standards in the District Plan that shape the level and nature of development in the residential area, such as:

- The minimum lot size and average lot size standards for subdivision
- each lot having to have a building area with minimum dimensions of 15m by 12m (clear of any right-of-way or other easements)
- maximum building coverage of 30% (excluding accessways and right-of-ways in this calculation) – equates to only a 120m^2 dwelling on a lot of 400m^2
- maximum building height of 10m
- maximum height to boundary
- minimum building setbacks

13.3 However, the main development standard controlling the density of residential subdivision is the minimum and/or average lot size requirements. There are a number of options or alternatives available to Council when setting the lot size development standards for the Greytown Development Area. These include leaving the minimum residential subdivision lot size standards as they are, increasing the minimum average lot size requirement to reduce the overall density of development, or varying the requirements across the Greytown Development Area to reflect the urban character closer to the town centre and the more open character away from the town centre.

13.4 The following table shows the existing relevant District Plan subdivision standards, with possible options for subdivision standards in the Development Area. The calculations for the maximum number of allotments has been worked out on a Net area of 26.82 ha (75% of the total FDA, allowing for roading, reserves, and infrastructure to be deducted before lots are counted):

	Minimum Lot Area	Minimum Ave Lot Area	Overall Development Potential – Max number of lots
Current District Plan Subdivision Standards (leave as is):	400m^2	500m^2	536
Higher Minimum Average:	400m^2	700m^2	383
Increase Minimum Average lot size with distance from town centre:	400m^2 700m^2 1000m^2	500m^2 700m^2 1000m^2	120 117 84 Total = 321

Table 4: Subdivision Standards Options considered

13.5 The following diagram roughly depicts where the minimum average lot size requirement could increase with distance from the town centre.

Figure 8: Increasing minimum average shown indicatively

13.6 The following table provides a summary of the benefits and costs of each of the 3 options or alternatives considered:

- Leaving the subdivision standards as they are, with a 400m² minimum lot size and 500m² minimum average lot size
- Requiring a higher minimum average lot size of 700m² across the entire Greytown Development Area
- Increasing the minimum average lot size requirement within the Greytown Development Area with distance from the town centre, with 500m² closest to town, 700m², and then 1000m² furthest from the town centre (near Mole Street).

Lot Size Alternative:	Benefits and Costs:
Keep Current Standards	Benefits: • Flexible: the smaller the standards the more choice = consistent with Objectives of the Structure Plan • Market demand driven • 'Tried and True' • Consistency of provisions across the district • Current District Plan Objectives/Policies still apply – no changes needed Costs: • Possibly denser development at a cost of

	environmental conditions • Possible adverse effects on traffic/infrastructure/ character/amenity
Higher Average	Benefits: • More open development = possibly less effects • Some flexibility • Simple to implement Costs: • Change from the current standards • May result in less development than is economically desirable within the GDA – affects financial/ development contributions • Possible wastage of residentially zoned land
Increasing Average	Benefits: • Very open development = possibly less effects • Reflection of existing character • Supported by Surveyors/ Real Estate Agents Costs: • Change from the current standards • More difficult to implement – where to make splits of increasing requirements, question of fairness • Less flexibility, especially those properties affected by the higher standards • May result in less development than is economically desirable within the GDA • Wastage of residentially zoned land

Table 5: Assessment of the Costs and Benefits of proposed Subdivision Standards of the Design Guide

13.7 With respect to the current standards of the District Plan, it appears owners and developers do not necessarily wish to push development to the minimum limits for subdivision. As examples, the recent 13 lot subdivision within the Greytown Development Area (at 104A West Street) has a smallest lot size of 685m^2 and an average lot size of 795m^2; and the Westwood development has an average lot size of 1370m^2. Furthermore, all the examples given in the Baker Ag report (included in Appendix 6) of recent sales of newly developed sections within the wider Greytown area (sites all subject to the current District Plan standards) have lot sizes of 929m^2, 1099m^2, 1000m^2, 1255m^2 and 950m^2, which are all well above the current minimum lot size standard of 400m^2. It is noted that 1000m^2 is the equivalent of the historic ¼ acre section, which is typical of a number of New Zealand townships.

13.8 If the remainder of the site at 104A West Street (4.2ha @ 75%) was developed to the current District Plan standards, a maximum of 63 additional lots could be created. Comparing "apples with apples", if the remainder of the site at 104A West Street was to be developed to an average minimum lot size of 700m^2, a maximum of 45 additional lots could be created.

13.9 Using an Assessment Matrix, the different alternatives (Options 1, 2 and 3) can be given a score from 1 to 10 (1 being the lowest, 10 the highest) with respect to how well the alternatives meet the overall objectives, Stakeholder goals, avoid adverse environmental effects and its cost effectiveness. An overall score out 70 can then be given to ascertain the best alternative.

Different Development Standards Options	Meets Objectives	Stakeholder Goal 1: Retention of "Village" Character /Heritage	Stakeholder Goal 2: Maintain Landscape Features	Stakeholder Goal 3: Transport Connectivity	Stakeholder Goal 4: Flexibility "choice"	Ability to avoid environmental effects	Cost Effectiveness	Overall Score Alternative
Option 1: Current Standards	8	7	8	9	9	7	9	57
Option 2: Higher Ave	7	8	9	9	7	8	6	54
Option 3: Varying Lot sizes	9	9	9	9	5	8	6	55

Table 6: Greytown Development Area Structure Plan Development Standards Assessment Matrix

13.10 An important aspect regarding development standards that came through clearly from the landowners, surveyors and real estate agents is the need to ensure that the standards allow flexibility. This is also one of the 7 c's of the Design Protocol "choice". The option that provides for the greatest degree of flexibility when designing a subdivision is to leave the standards as they are, as the current minimum requirements leave more choice to the developer.

13.11 Based on the assessment matrix above, it is recommended that the subdivision standards within the Greytown Development Area stay the same as the standard residential subdivision standards. It is noted that the development standards could be amended within the Greytown Development Area if thought necessary at a future time. Having said that, there would have to be sound reasons to impose higher standards than those for adjoining residential areas (question - what is fair and reasonable?). Furthermore, the consistency of standards across the district is a lot easier for Council to implement.

14.0 Financial/Development Contributions

14.1 It is important to note that as of 2021, Financial Contributions will no longer be able to be levied under the Resource Management Act. Council will be required to use Development Contributions under the Local Government Act.

14.2 Development Contributions can be levied at any time development occurs, i.e. at Building Consent where infill occurs without the need for a subdivision consent; at subdivision consent stage, or through a land use consent. Levying contributions will no longer depend on a condition of a resource consent that is able to be challenged to the Environment Court. However alternate review processes are available. Development Contributions will be set in Council's Long Term Council Community Plan.

14.3 Bearing this in mind, it is anticipated that any Financial Contribution framework specific for the Greytown Development Area Structure Plan will have a limited 'life'. It is expected that a substantial amount of development will occur within the Greytown Development Area in the next 10 years, so it is important to quantify the costs of infrastructure required for the Greytown Development Area and identify who is responsible for those costs so that ongoing Development Contributions can be levied.

14.4 Under the existing framework of the District Plan, Financial Contributions ensure that the adverse effects on the environment and communities arising from development are avoided, mitigated or remedied and that any necessary improvements to services are made to achieve those ends. Section 23 of the District Plan provides the basis for levying financial contributions (i.e. when they are levied and when they can be waived). Contributions can be in the form of money, land, works or services, and may include roads and services, the protection of an important historic or natural feature, visual enhancement through landscape treatment or access to a river or stream.

14.5 This Financial Contribution framework enables Council to recover funding for the actual cost of providing the infrastructure (water supply, wastewater, stormwater disposal systems) or open spaces and road/access to the development; the actual cost of any upgrade to infrastructure and road/access necessary to service the development; and a share of the cost where additional capacity has been created in anticipation of future development.

14.6 The table below provides a summary of the current amounts levied under the Financial Contributions framework of the District Plan for subdivision development in the South Wairarapa District including Greytown (Residential Zone):

Type of Contribution	Amount (+GST)
Reserves Contributions Standard	3% of the land value of each allotment created
Infrastructure Contributions Standard	$5000 per allotment that connects with public infrastructure and services (previously split as Water $3736.83 incl GST and Sewer $2013.17* incl GST)
Roads/Access Contributions Standard	2% of the land value of each allotment created

Table 7: Financial Contributions currently levied for residential subdivision in Greytown (Source: Section 23 of the District Plan)

*The cost of upgrading the wastewater system in Greytown to cope with permitted growth was calculated at approximately $6 million. This now equates to each new lot paying a sewerage disposal upgrade contribution of $11,960 (incl GST). On current estimates of lot creation, this will fund approximately 80% of the cost of the required wastewater system upgrade, with up to 20% funded through rates. This amount is already being levied on development across Greytown.

14.7 Wastewater Disposal Contributions:

14.7.1 The work done recently on the upgrades required for wastewater disposal in Greytown (summarized in Section 12 of this report above) is designed to meet the additional demand on wastewater from development within the Greytown Development Area, provided the overall level of development remains within the envisaged level (between 400-450 lots).

14.7.2 Additionally, the section of 150mm sewer main at the intersection of Market Road and East Street which flows across and into Wood Street is old and high up on the renewal list.

14.7.3 It is considered that the adjusted contributions for wastewater of $11,960 (incl GST) are sufficient and reasonable.

14.8 Water Contributions:

14.8.1 As referred to in Table 7 above, Council levies $3736.83 (incl GST) per additional allotment to connect to the urban water supply. This figure has remained unchanged since 2003.

14.8.2 With very little upgrade of the water network required for servicing the development of the Greytown Development Area, the existing contributions Council levies for water are considered sufficient and reasonable.

14.9 Reserve Contributions:

14.9.1 As referred to in the Table 7 above, currently Council requires 3% of the land value of each allotment created as a Reserve Contribution. Current estimated values of sections of different sizes within the Greytown Development Area have been provided by Baker Ag (Report attached in Appendix 6). The table below provides a summary of the Baker Ag estimates and the amount of Reserve Contributions that could be levied at 3% of those forecast values (N.B. the upper value of section used in calculation):

Section Size:	Estimated Value	3% Reserve Contribution
400-500m^2	$170,000 - $190,000	$5700
700-800m^2	$230,000 - $245,000	$7350
1,000-1200m^2	$270,000 - $300,000	$9000

Table 8: Reserve Contributions based on current estimated section values (Source: Baker Ag Report, 15 August 2017)

14.9.2 For example, in the case of future development potential at 104A West Street, if the remainder of the site (4.2ha @ 75%) was to be developed to the current District Plan standards (500m^2 average minimum lot size), 63 further allotments could be developed. This level of development would generate approximately $359,000 in Reserve Contributions based on the above estimated values (note the 13 lots approved for development have contributed approximately $95,000 or $7308 per lot already). The length of the lineal reserve through 104A West Street would be approximately 300m long.

14.9.3 It is noted that the cost to the developer for providing the 10m wide lineal reserve, with work required to form and plant the bunds, would be more expensive than normally gifting land for reserves. With the provision of the lineal reserve as envisaged, there may not be a need for further reserve contributions by the developer. In fact, there may be a positive financial offset required to be made by Council. Council does allow for the remission or waiver of reserve contributions in some cases. Section 23.2.3 of the District Plan sets out assessment criteria for this. It is thought that, if landowners are going to provide for a lineal reserve through their land as envisaged, then reserve contributions for those owners could be largely offset.

14.9.4 The estimated maximum yield of Reserve Contributions from 400 allotments within the entire Development Area at 3% of the current land value is $2,280,000. The 3% of the land value is considered sufficient to enable Council to establish the lineal reserve as envisaged with any balance used to upgrade existing reserves in Greytown.

14.10 Road Contributions:

14.10.1 As referred to in the Table 7 above, currently Council requires 2% of the land value of each allotment created for Road Contributions. Current estimated values of sections of different sizes within the Greytown Development Area have been provided by Baker Ag (Appendix 6).

14.10.2 The table below provides a summary of the Baker Ag estimated valuations and the amount of Road Contributions that would be levied at 2% (N.B. the upper value used):

Section Size:	Estimated Value	2% Roading Contribution
400-500m^2	$170,000 - $190,000	$3800
700-800m^2	$230,000 - $245,000	$4900
1,000-1200m^2	$270,000 - $300,000	$6000

Table 9: Road Contributions based on current estimated section values (Source: Baker Ag Report, 15 August 2017)

14.10.3 Similar to the calculations for Reserve Contributions, the same level of development at 104A West Street would generate $239,400 in Roading Contributions based on the above estimated values.

14.10.4 Baker Ag have also provided a value for the land required for the 'spine' road (attached in Appendix 7). The cost per metre has been estimated at $45/m^2, with a total cost of $945,000.

14.10.5 In order to service the Greytown Development Area, Council's Roading Manager has provided estimated costings on the necessary upgrades to Wood Street and Mole Street at $785,000, the internal roading cost for the greater standard of construction for the 'spine' road of $225,000 (costing is over and above what the developer would pay for the construction of a standard local road), and an estimated cost of $232,000 for the access off West Street (designation of access strip to form roadway, including construction, the land value and necessary compensation). This equates to a total cost estimate of approximately $1.2 million.

14.10.6 Looking at the proportion of "public good" i.e. allowing access over land to provide better transport links/connectivity, the current roading contributions need to be adjusted. However, in normal circumstances the developer would be liable for the greater part of this cost as part of servicing their development. The difference will require an adjustment payment to made by the developer.

14.10.7 It was therefore considered appropriate that properties within the Greytown Development Area that do not provide for transport connectivity, by either having the 'spine' road or local roads running through them, be required to pay an additional roading contribution. It was estimated that 320 lots would not be providing land for such roading. The cost of upgrades of $1.2 million was then

divided by the 320 likely new lots not providing for connectivity, which equates to each of the 320 new lots paying an additional $3750 (incl GST) for roading contributions. The roading contribution recognises the "public good" component that the 'spine' road and connecting local roads provide to the efficient functioning of the overall Development Area.

14.11 Stormwater Contributions

14.11.1 As the cost of providing for stormwater disposal within the Greytown Development Area would be met by the developer, including the cost of the road side soakage swale alongside the 'spine' road which will be formed as part of the road construction, Council will not levy financial contributions for stormwater.

Appendix 1:

Greytown Future Development Area Structure Plan

Stage 1 Scoping Report

Eastern Consulting Ltd

February 2017

EASTERN CONSULTING LTD

Greytown Future Development Area Structure Plan Stage 1 Scoping Report

February 2017

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Report sponsor and reviewer:

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SOUTH WAIRARAPA DISTRICT COUNCIL

1.0 Background

1.1 Why a Structure Plan is being developed for the area

When the Wairarapa Combined District Plan was publicly notified in 2006 land in Greytown (between Kuratawhiti and Wood Street and between Mole Street and West Street) was rezoned for urban development (see Figure 1 below). This covered approximately 35 hectares of land, in multiple ownerships. Future road or infrastructure connections and development patterns were unknown as there was not a structure plan for the area. As a result, Variation 1 to the District Plan denoted the area as a "Future Development Area" (FDA) until such time as a structure plan was developed.

Figure 1: Part of the Combined District Plan Map 59 showing the Greytown FDA

1.2 What a Structure Plan for the Greytown FDA will do

- Integrated management across land in different ownership
- provides certainty to land owners and Council
- sets out the general layout and form of development recognising owner preferences where possible
- Achieves good urban design
- Coordinated infrastructure provision
- Set level of financial contributions – can quantify the costs of infrastructure, identify who is responsible for costs and timeframes

- Section 32 of RMA duties – assessment of costs, benefits and alternatives
- Development that meets the standards specific to the Structure Plan which are being created as part of this process
- Development that is consistent with the design adopted by the Structure Plan

The main aim of the Structure Plan is to enable the uplifting of the current "deferred development" status over the land and release it for residential development.

2.0 Managing Urban Growth

2.1 The Wairarapa Combined District Plan

Section 18: Subdivision, Land Development and Urban Growth of the Wairarapa Combined District Plan (The District Plan) provides guidance on managing future urban growth. Section 18.3.10 Objective SLD4 – Managing Urban Growth states:

"To provide for urban expansion adjoining existing urban areas where such growth does not adversely affect the safe and efficient use and development of land, roads and infrastructure."

Policy 18.3.11(e) of the District Plan says:

"The Greytown Future Development Area has been identified as an area of future urban growth. Growth within this area will be restricted until a Structure Plan has been developed for this area in consultation with the local community and has been approved by the South Wairarapa District Council."

In addition to this, the explanation in Section 18.3.12 says:

"Large-scale urban development should occur in a planned and structured approach, taking into account the environmental qualities and features of the land, as well as the need to provide strong and efficient connections with the existing urban area. No development should occur within the identified growth areas until such a comprehensive design process has been undertaken for each area, providing the community with an opportunity to have an input."

The District Plan identified the Greytown FDA as an area for urban growth, and the Structure Plan process is identified as the method to manage urban growth to ensure that good environmental outcomes are achieved.

2.2 Existing Character and Development within the FDA

The FDA is largely characterised by "ribbon" residential development along Kuratawhiti and Wood Streets, with dwellings fronting these streets with areas of bare land to the rear. The land in the middle of the FDA is used for agriculture and is accessed off Mole Street. The Mole Street end of the FDA has a rural character.

Since the creation of the FDA, one larger development has occurred within the area, a 17 lot residential subdivision accessed off West Street, now known as Westwood Avenue. Development of this subdivision is largely complete. Other minor subdivisions (2 or 3 lots) have also occurred within the FDA, particularly along Wood Street.

2.3 Increased Development Pressure

The district is experiencing more pressure from developers and potential purchasers to free up land, particularly in Greytown for residential development, as a shortage of supply appears to exist. It is stated by developers that the restricted supply of residential land is pushing up the price of residential and lifestyle properties and sites for development. The Government has also prioritised the supply of land for urban development through the NPS for Urban Capacity.

Council has undertaken a desktop study to assess the urban development potential of large areas of land within Greytown. The table below provides a summary for Greytown. The number of possible lots has been calculated at 500m^2 per allotment, which is the average allotment size for residential subdivision. The net area is 75% of the total area, allowing for roading, reserves and other infrastructure to be deducted before lots are counted.

Area	Gross ha	Net ha	Max No of Lots	Notes
Greytown FDA	35.76	26.82	536	Subject to the Structure Plan – 500m2 may not be the subdivision standard
Greytown Villas	6.84	5.13	88	Approved Plan Change has total limit of 100 buildings – includes 12 sites already created
63 Kuratawhiti St	1.64	1.23	15	Rezone to Residential - Has consent issued for 15 lots
Old 'Stella Bull Park' (off end of Cotter St)	6.73	5.05	100	

Table 1: Potential Urban Development of large lots in Greytown – Information provided by SWDC

From this table it is clear that the Greytown Future Development Area makes up the largest area of land "earmarked" for future residential development in Greytown.

At the 2013 Census (Source: Statistics New Zealand) Greytown had a population of 2202. The census data also recorded that Greytown had 1122 dwellings with an average household size of 2.26. Since the census on 5 March 2013, the Council has issued 68 additional building consents for new dwellings (including relocates) within Greytown. This equates to approximately a 6% increase in the total number of dwellings in Greytown in less than 4 years.

3.0 Possible Constraints to Residential Development

As part of the scoping stage of the Structure Plan development process, the Council wanted to be reassured that the land within the identified in the FDA is suitable for residential development.

A number of possible constraints that may result in undue level of risks on development or impose unreasonable costs that make residential development impracticable needed to be reviewed. The Council identified the following possible constraints;

- soil contamination from previous land uses
- flooding
- soil suitability
- land stability
- heritage features
- vegetation
- waterways, drains
- infrastructure location, levels and capacity.

A landowner meeting held on 22 November 2016 was attended by 21 property owners. Two Greytown Ward Councillors also attended the meeting. The above matters were briefly covered at the meeting and additional concerns were raised by landowners relating to soils.

4.0 Specific Investigations

The next part of this report summarises the specific investigations undertaken to date to assess possible constraints to residential development in the FDA and includes landowners concerns raised at the November meeting. It also identifies what further investigative work may be required.

4.1 Potential Soil Contamination

Council engaged Esther Dijkstra of EcoAgriLogic Ltd to undertake a Site Investigation (SIR) of potential soil contamination.

This investigation assessed the soils for their intended residential use. This meant analysing previous land use, intended land use and soil sampling results.

Activities such as soil disturbance, change of use or subdivision of potentially contaminated land are regulated under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 ('the NES'). Under the NES land is considered to be actually or potentially contaminated if an activity or industry on the Ministry for the Environment's Hazardous Activities and Industries List (HAIL, 2011) is more likely than not to have been undertaken on that land.

The Wellington Regional Council's (WRC) Selected Land Use Register (SLUR) records parts of the Greytown FDA as having a verified history of hazardous activity or industry (Figure 2).

Figure 2. Location of SLUR sites within and relative to the FDA

The Regional Council indicates that these areas have been used for persistent pesticide bulk storage or use, including sport turfs, market gardens, orchards, glass houses or spray sheds (HAIL A10, 2011).

4.1.1 Soil Investigation Method

Aerial photographs of the area were reviewed to identify changes in land use activities. The following years were examined as part of the desktop study: 1943, 1963, 1995 (archive WRC) and 2004 (Google Earth). The following land uses were identified:

- 1943 The area shows agricultural/pasture land – large area is the Farley family dairy farm.
- 1963 No changes.
- 1995 The area has been planted in orchard trees. The Cooke's planted apple trees in 1992.
- 2004 No changes to areas indentified on the SLUR map – still planted in apples and operated by JR Orchards Ltd known as Molewood Orchard.

Council's property files were reviewed for all properties. The property files provided little information regarding soil contamination.

The area was also sampled in September/October2016. The location of the sampling blocks are shown in figure 3 below.

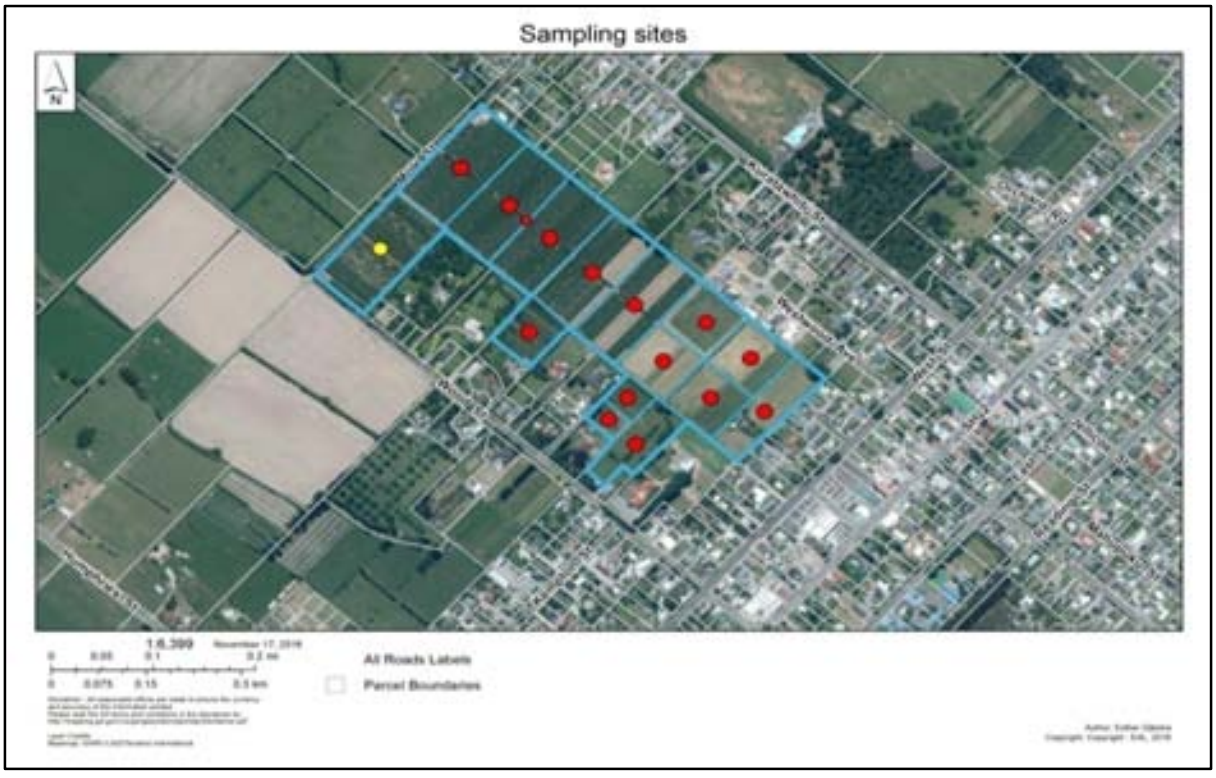


Figure 3: Soil sampling sites

Composite samples were taken from each of the orchard blocks. Each composite sample consists of 20 subsamples. The subsamples were taken in a zig-zag pattern to a depth of 15

cm. One composite sample was taken from around the unused shed in the middle of the Molewood Orchard. This composite sample consists of 6 subsamples.

All soil samples were taken with a stainless steel hand auger with a diameter of 2.5 cm. The sampling method was selected after a site investigation indicated that low concentration heavy metals and herbicides and pesticides were to be expected, related to historic and current horticultural land use (MfE, 2011).

The samples were sent to Hill Laboratories for testing. The soil samples were analysed for heavy metals and organochlorine pesticides (OCPs). These contaminants are typical for (past) horticultural land use (MfE, 2004). All EAL 2016-PSI 8 standard laboratory procedures were adhered to by Hill Laboratories who are accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised. The tests reported in this document have been performed in accordance with the terms of accreditation.

4.1.2 Results to date

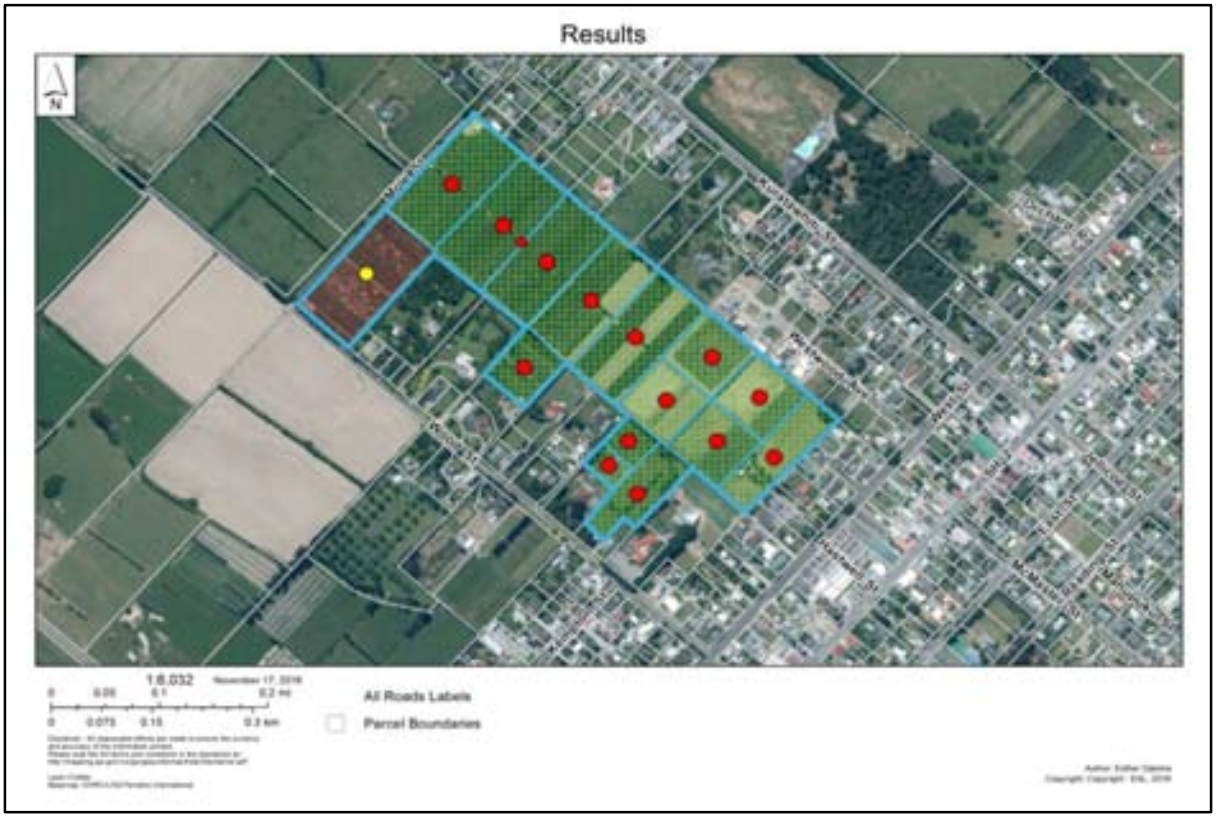


Figure 4: Soil test results

The green shaded sites indicate that the concentrations of the analysed contaminants do not exceed applicable residential NES standards. The level of heavy metals and OCPs are

not anticipated to impact on future use of the site for residential or rural residential purposes.

The red shaded site (73 Wood Street) showed concentrations of arsenic and lead that exceed the applicable residential NES standards. The level of arsenic in the 0-15 cm sample is above the Soil Contaminant Standard for residential or lifestyle block use (MfE, 2011). The 15-30 cm sample is slightly above the Soil Contaminant Standard for arsenic.

The level of lead in the 0-15 cm sample is also slightly above the Soil Contaminant Standard for residential or lifestyle block use (MfE, 2011). The 15-30 cm sample is well below the Soil Contaminant Standard for lead.

There is no immediate risk to human health from elevated levels of arsenic and lead in the soil, as long as the soil is not disturbed. The pathway for arsenic and lead is through soil ingestion. Remediation of the site can take place by mixing the top and sub soil. As the site is currently planted in an apple orchard, no immediate action is recommended. Further testing of the soil should be undertaken at the time of changing the use of the land.

4.1.3 Soil Testing of the Possible Plan Change Area

Council has received a request for a Private Plan Change from the owners of the property at 116 Kuratawhiti Street to rezone the properties at 90 to 116 Kuratawhiti Street and 18 Mole Street, Greytown from Rural to Residential. This is to facilitate residential subdivision. As this is an area of land across Mole Street from the FDA, Council has requested that some preliminary investigation of this area occur parallel to work on the FDA Structure Plan.

A Site Investigation (SIR) on the property at 116 Kuratawhiti Street was undertaken. After a site inspection and considering the previous site activities (Tate's Orchard) and soil testing results, this investigation concluded that the topsoil of the site up to a depth of 30 cm contains concentrations of arsenic above the rural residential/lifestyle block and residential soil contaminant standard (NES, 2012). The level of arsenic in the soil layers deeper than 40 cm is below the soil contaminant standard (NES, 2012).

Aerial photographs indicate that all neighbouring properties within the possible plan change area, were once part of Tate's Orchard. It is very likely therefore that the topsoil of all these properties have similar levels. Arsenic is considered relatively immobile in soil and has a limited plant uptake. The controlling pathway of arsenic is dominated by ingestion of contaminated soil. The level of heavy metals and OCPs are not anticipated to impact on future use of the site for residential or rural residential purposes.

Remedial action is recommended for the site however and possibly the neighbouring properties to reduce the soil concentrations of arsenic and thus decrease the health risk.

Further testing of neighbouring properties may be required. The remedial actions could include In situ soil mixing; vertically mixing the contaminated soil with the underlying uncontaminated soil to reduce the arsenic concentrations to below the Soil Standard Concentration. In situ soil mixing is recommended for areas with contaminant concentrations less than two to three times the Soil Standard Concentration and where the contamination is restricted to the surface with underlying clean, silt loam to provide a satisfactory mixed soil (MfE, 2006).

The level of contamination of the top soil (0-30 cm) at the site is 27 mg/kg, which is less than two times the Soil Standard Concentration of 17 mg/kg for arsenic. The underlying soil layers are a clean silt loam. After remedial action has been undertaken, the top soil of the site will need to be assessed to establish that arsenic soil concentration does not exceed the applicable NES standard for the residential land use scenario.

4.2 Flood Risk

Parts of the Greytown FDA are subject to flooding from the nearby Waiohine River. Consultation with the WRC Flood Protection Department has resulted in the following information being obtained.

4.2.1 1-in-100 Flood Level

The 1-in-100 year flood level, with allowance for climate change, ranges from around 60.2m at the upstream extent to around 55.9m, at the downstream extent of the FDA, given in metres above the local Mean Sea Level datum (Wellington 1953). In the event of a 1-in-100 year flood, parts of the FDA are predicted to have approximate flood depths of up to 0.5m. Much of the area covered by the lightest blue has a predicted flood depth range on the below plan (Figure5), as less than 100mm. The predicted flooding depth varies across the area, based on actual ground levels. A large area of land through the middle of the FDA is predicted to be above the 1-in-100 year flood level.

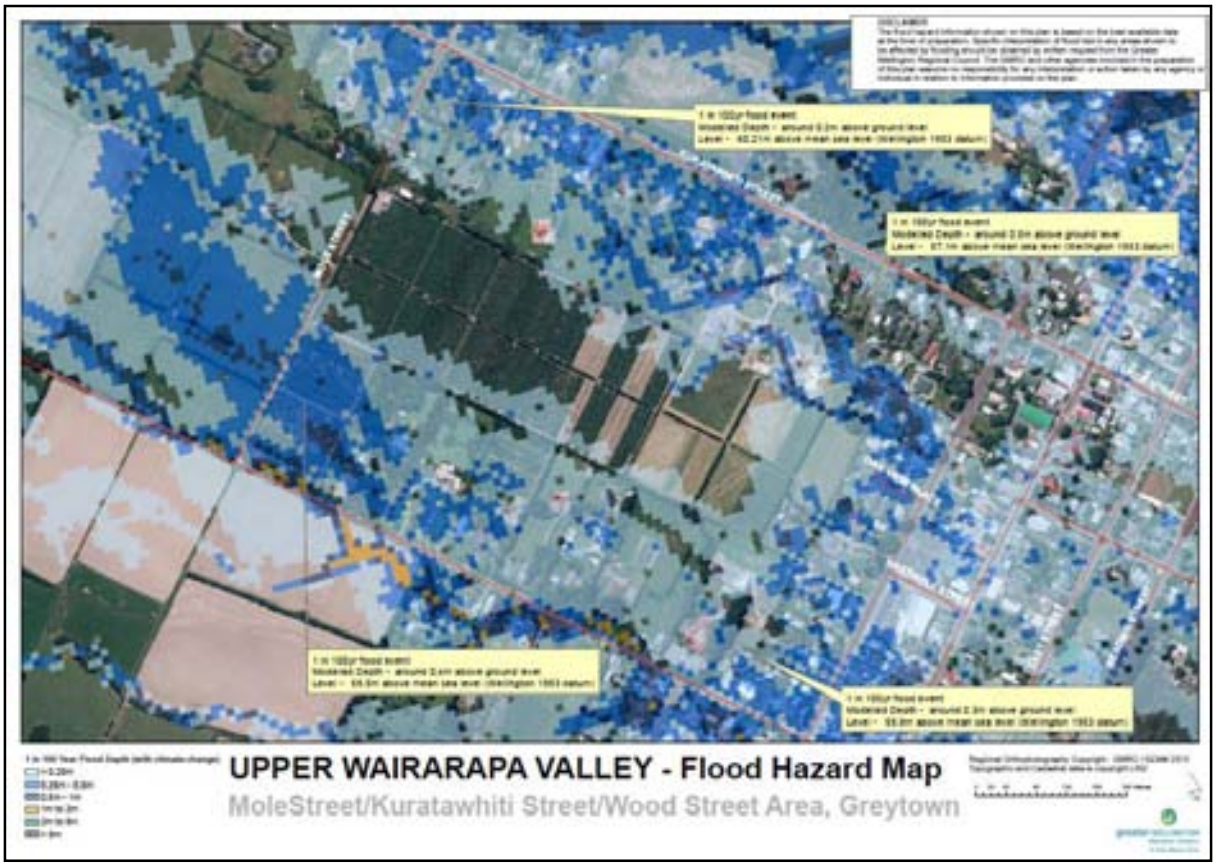


Figure 5: Flood Hazard Map showing predicted flood depths for the Greytown FDA. Source: WRC

To manage the risk to any future building development it is necessary to compare the predicted flood level against any proposed future building floor level, both measured against the same datum.

The WRC Flood Protection Department recommends:

- that new habitable development on the property is built above the predicted 1-in-100 year flood level as a minimum;
- during construction, flood level should be set at the underside of floor joists or to the base of a concrete floor slab;
- that owners inform their insurance company of the flood risk specific to their property.

4.2.2 Flood Mitigation

WRC are working towards providing a 1-in-100 year level of flood protection to the majority of the Greytown urban area. A 1-in-100 year flood means that a very large flood is statistically likely to happen once every 100 years; in everyday terms it means that there is a 1% chance of such a flood happening in any given year. The Regional and local councils (SWDC, CDC) are currently working together on reviewing the current proposed Floodplain Management Plan for the Waiohine River. Significant funding has been allocated in WRC's LTP to construct new infrastructure to protect Greytown from the 1 in 100 year flood risk. Should this work proceed the risk of flooding from a 1-in-100 year flood will be removed from the FDA.

4.2.3 Other Flooding risk

The FDA may be subject to other flooding sources, such as stormwater or groundwater. Although the Moroa Water Race runs through the area, there is no historic information that flooding has occurred from it or local stormwater or groundwater.

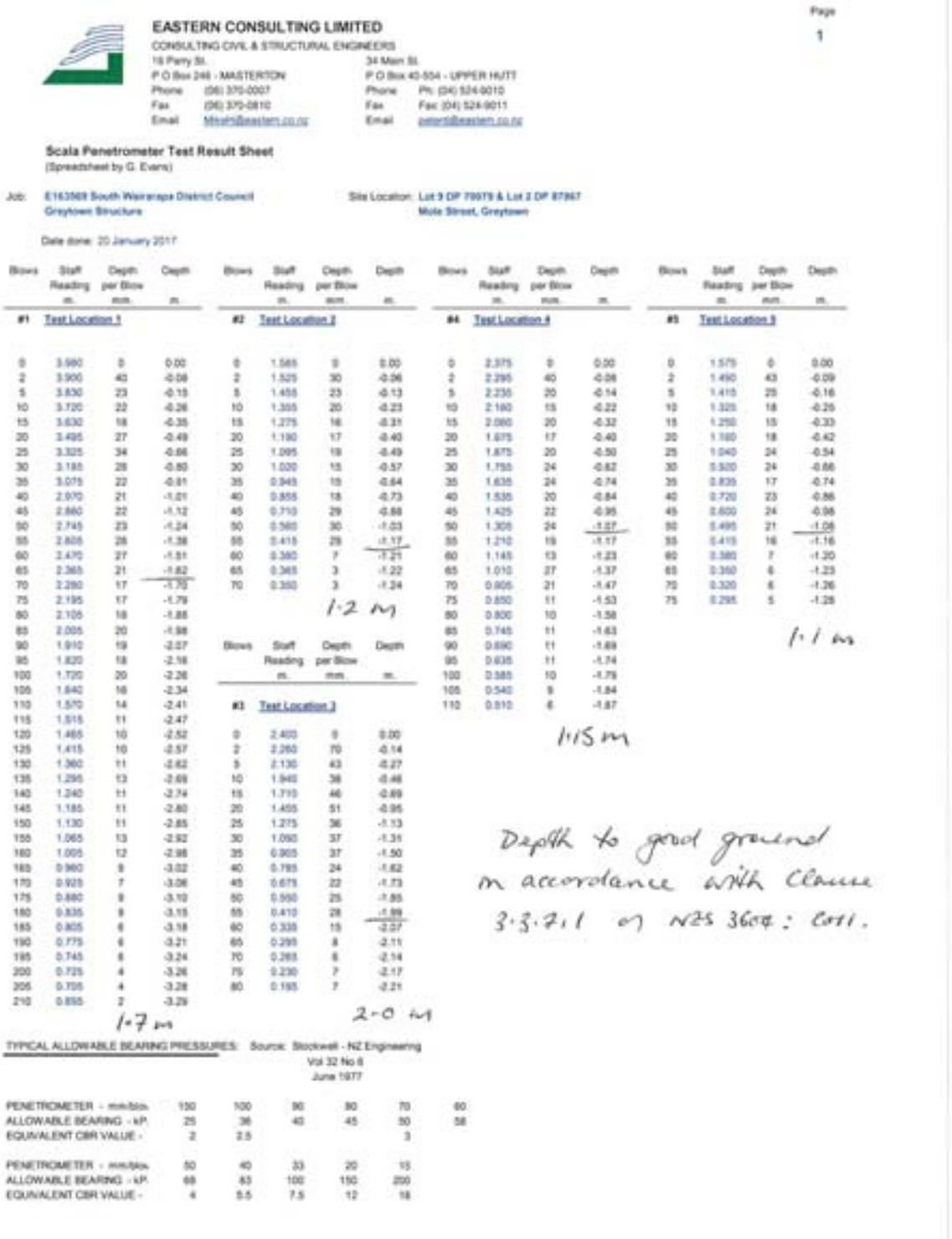
However local flooding from stormwater is an issue that needs further consideration when the structure plan design is developed.

4.3 Soil Suitability for residential development

It was raised at the Landowner meeting that the FDA soil may not be suitable for residential development due to poor load bearing capacity. It was queried whether this would mean the depth of foundations required to find "good ground" on which to build residential dwellings, would make it too costly. NZ Standard 3604 requires material with a bearing capacity of 300 kpa. Eastern Consulting, Civil and Structural Engineers have undertaken penetrometer testing within the FDA shown on the attached photo, Figure 6 below.

Figure 6: Photo showing test locations for Penetrometer tests

The results of the penetrometer tests are shown in the Figure 7 below, which shows "good ground" varying in the range of 1.1 – 2.0 metres below existing ground level.



Page 1

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Scala Penetrometer Test Result Sheet
(Spreadsheet by G. Evans)

Job: E163569 South Wairarapa District Council — Greytown Structure
Site Location: Lot 9 DP 79075 & Lot 2 DP 87867 — Mole Street, Greytown

Date done: 20 January 2017

Blows	Staff Reading m.	Depth per Blow mm.	Depth m.
#1 Test Location 1			
0	3.980	0	0.00
2	3.900	40	-0.08
5	3.830	23	-0.15
10	3.720	22	-0.26
15	3.630	18	-0.35
20	3.495	27	-0.49
25	3.325	34	-0.66
30	3.185	28	-0.80
35	3.075	22	-0.91
40	2.970	21	-1.01
45	2.860	22	-1.12
50	2.745	23	-1.24
55	2.605	28	-1.38
60	2.470	27	-1.51
65	2.365	21	-1.62
70	2.280	17	-1.70
75	2.195	17	-1.79
80	2.105	18	-1.88
85	2.005	20	-1.98
90	1.910	19	-2.07
95	1.820	18	-2.16
100	1.720	20	-2.26
105	1.640	16	-2.34
110	1.570	14	-2.41
115	1.515	11	-2.47
120	1.465	10	-2.52
125	1.415	10	-2.57
130	1.360	11	-2.62
135	1.295	13	-2.69
140	1.240	11	-2.74
145	1.185	11	-2.80
150	1.130	11	-2.85
155	1.065	13	-2.92
160	1.005	12	-2.98
165	0.960	9	-3.02
170	0.923	7	-3.06
175	0.880	9	-3.10
180	0.835	9	-3.15
185	0.805	6	-3.18
190	0.775	6	-3.21
195	0.745	6	-3.24
200	0.725	4	-3.26
205	0.705	4	-3.28
210	0.695	2	-3.29

1.7 m

Blows	Staff Reading m.	Depth per Blow mm.	Depth m.
#2 Test Location 2			
0	1.585	0	0.00
2	1.525	30	-0.06
5	1.455	23	-0.13
10	1.355	20	-0.23
15	1.275	16	-0.31
20	1.190	17	-0.40
25	1.095	19	-0.49
30	1.020	15	-0.57
35	0.943	15	-0.64
40	0.855	18	-0.73
45	0.710	29	-0.88
50	0.560	30	-1.03
55	0.415	29	-1.17
60	0.380	7	-1.21
65	0.365	3	-1.22
70	0.350	3	-1.24

1.2 m

Blows	Staff Reading m.	Depth per Blow mm.	Depth m.
#3 Test Location 3			
0	2.400	0	0.00
2	2.260	70	-0.14
5	2.130	43	-0.27
10	1.940	38	-0.46
15	1.710	46	-0.69
20	1.455	51	-0.95
25	1.275	36	-1.13
30	1.090	37	-1.31
35	0.905	37	-1.50
40	0.785	24	-1.62
45	0.675	22	-1.73
50	0.550	25	-1.85
55	0.410	28	-1.99
60	0.330	15	-2.07
65	0.295	8	-2.11
70	0.265	6	-2.14
75	0.230	7	-2.17
80	0.185	7	-2.21

2.0 m

Blows	Staff Reading m.	Depth per Blow mm.	Depth m.
#4 Test Location 4			
0	2.375	0	0.00
2	2.295	40	-0.08
5	2.235	20	-0.14
10	2.160	15	-0.22
15	2.080	20	-0.30
20	1.975	17	-0.40
25	1.875	20	-0.50
30	1.755	24	-0.62
35	1.635	24	-0.74
40	1.535	20	-0.84
45	1.425	22	-0.95
50	1.305	24	-1.07
55	1.210	19	-1.17
60	1.145	13	-1.23
65	1.010	27	-1.37
70	0.905	21	-1.47
75	0.850	11	-1.53
80	0.800	10	-1.58
85	0.745	11	-1.63
90	0.690	11	-1.69
95	0.635	11	-1.74
100	0.585	10	-1.79
105	0.540	9	-1.84
110	0.510	6	-1.87

1.15 m

Blows	Staff Reading m.	Depth per Blow mm.	Depth m.
#5 Test Location 5			
0	1.575	0	0.00
2	1.490	43	-0.09
5	1.415	25	-0.16
10	1.325	18	-0.25
15	1.255	15	-0.33
20	1.160	19	-0.42
25	1.040	24	-0.54
30	0.920	24	-0.66
35	0.839	17	-0.74
40	0.720	23	-0.86
45	0.600	24	-0.98
50	0.495	21	-1.08
55	0.410	18	-1.16
60	0.380	7	-1.20
65	0.350	6	-1.23
70	0.320	6	-1.26
75	0.295	5	-1.28

1.1 m

Depth to good ground in accordance with Clause 3.3.2.1 of NZS 3604 : 2011.

TYPICAL ALLOWABLE BEARING PRESSURES: Source: Stockwell - NZ Engineering Vol 32 No 6 June 1977

PENETROMETER - mm/blow	150	100	90	80	70	60
ALLOWABLE BEARING - kP	25	36	40	45	50	58
EQUIVALENT CBR VALUE -	2	2.5			3	
PENETROMETER - mm/blow	50	40	33	20	15	
ALLOWABLE BEARING - kP	68	83	100	150	200	
EQUIVALENT CBR VALUE -	4	5.5	7.5	12	18	

Figure 7: Penetrometer Result Sheet from tests undertaken within the FDA

The following table also shows results from penetrometer tests already undertaken by Eastern Consulting Limited for Building Consents for new dwellings in the wider Greytown area.

Address or Area	Depth of "good ground" (m below ground level)
59A Wood Street*	1.6 - 2.2m
65 Wood Street*	1.9 – 2.4m
Governors Green Subdivision	0.2m
141 West Street	0.9 – 1.4m
80 West Street	0.2 – 0.9m
39 North Street	2.5m
Cnr North and West Street	1.5 – 2.6m
81 Reading Street	1.4 – 1.6m
11A Reading Street	1.9 – 2.2m
32 Reading Street	1.5 – 1.8m
11D Reading Street	1.6 – 2.2m
13A Reading Street	1.2 – 1.45m
37 Reading Street	1.5 – 2.1m
81 Reading Street	0.8 – 2.3m
30-30A Wood Street	1.1 – 1.5m
209 Wood Street	1.8 – 2.2m
Top end of Wood Street	0.8 – 1.4m
Cnr Wood and West Street	1.9 – 2.4m

Table 2: Examples of Depth of "Good ground" in Greytown (*Sites within FDA)

The above information indicates that there is quite a variation in the depth of "good ground" all over Greytown. The FDA results show that the range of results within it are typical of other areas within the Greytown. All of the above depths would be suited to wooden driven piles or RibRaft foundations. Either of these options would not result in real issues regarding additional or unreasonable costs for building foundations.

4.4 Land Stability

The land within the FDA is generally flat. There are no known fault lines within the vicinity of the FDA. The nearest fault line shown in the District Plan (Map 19) is the Wairarapa Fault, which is approximately 4.5km to the north of the FDA. The "Waiohine Faulted Terraces" are also depicted in the District Plan, again approximately 4km from the FDA.

A desktop study of historical maps and aerial photographs has been undertaken and has shown that the area is not subject to any land stability issues or any noticeable erosion.

4.5 Heritage Features

Greytown is well known for its early European history as the first planned inland town in New Zealand, however there are very few listed "heritage features" in the District Plan within the FDA. The table below shows the listed items:

Heritage Item No.	Address	Details of Item
Hs105	35 Wood Street	Fence
Ts038	35 Wood Street	Tree – Querus robur (English Oak)
Ts043	46 Kuratawhiti Street	Tree – Fagus sylvatica purpurea (Copper Beech)
Hs095	46 Kuratawhiti Street	Maata Mahupuku House (house fronts Kuratawhiti Street, only rear part of site is within FDA)
Hs096	54 Kuratawhiti Street	Villa (house fronts Kuratawhiti Street, only rear part of site is within FDA)
Ts040	21 Wood Street	Trees (5) – Ulmus campestris (English Elm) (only rear part of site is within FDA)

Table 3: Listed Heritage Features within the FDA. Source: District Plan

These items need to be considered when designing infrastructure such as roads, and services. None of these heritage items are considered at risk from development within the FDA.

4.6 Vegetation

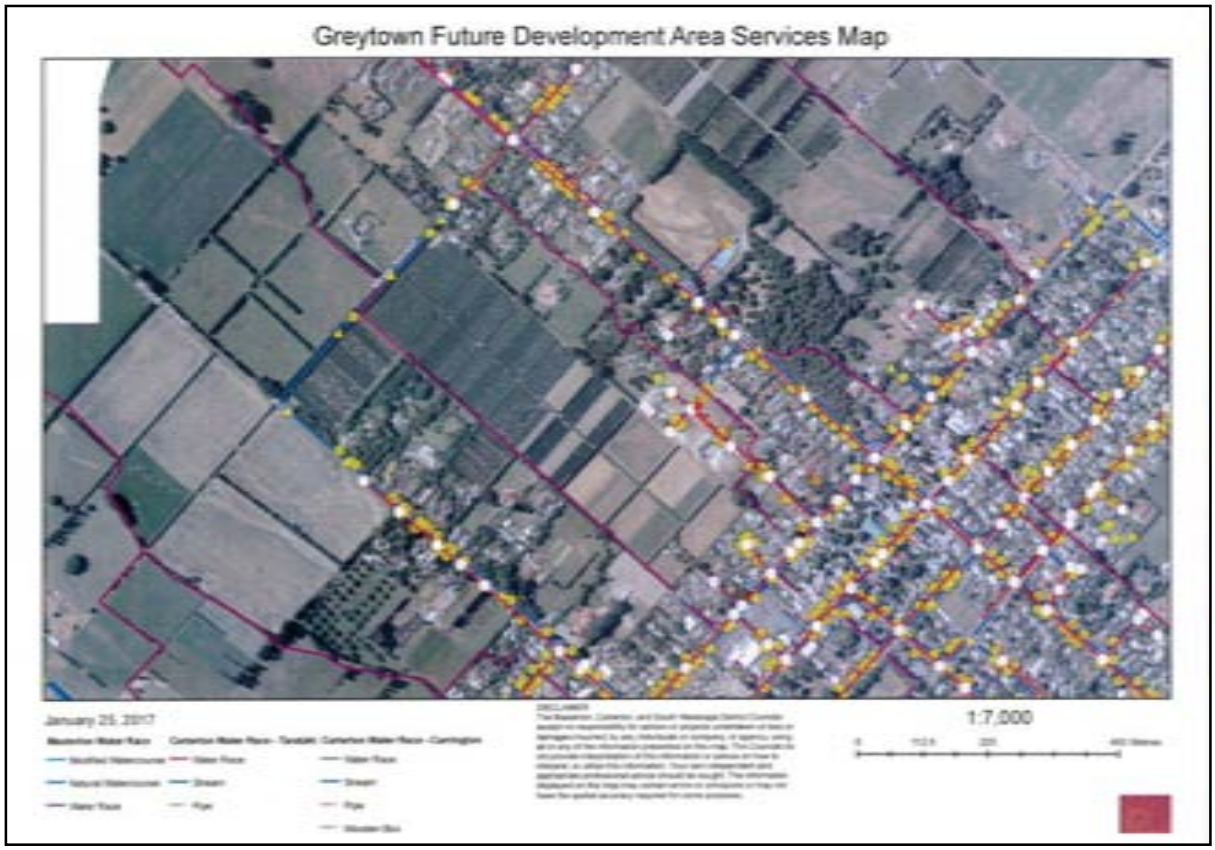
Apart from those heritage trees listed above, a number of other substantial trees exist on properties within the FDA. A large proportion of the FDA is also planted in apple trees and operated as commercial orchard (approximately 12.3 hectares). Orchard trees have been removed from 104A West Street (approximately 5.4 hectares of land adjoining the Westwood subdivision).

4.7 Waterways

The FDA does not have any significant watercourses running through it. The Moroa Water Race does however run alongside the orchard area, roughly along the rear boundary of the properties fronting Wood Street. It is not anticipated to cause any significant issues in the FDA.

4.8 Existing infrastructure location, levels and capacity

Figure 8 below shows the location of water mains, sewer mains, water race and stormwater. The mains typically follow roads, while the water race flows through properties or along boundaries. Typically the water race is an open channel, with some piped areas.



4.8.1 Water

Although water usage is relatively high per capita in Greytown, future water supply is not considered to be an issue. Water supplies are metered and water users pay for what they use. Water storage facilities may need to be increased.

Further investigations will be required to assess the additional water usage and then what additional water storage facilities may be needed. Estimated costs of this will also be required to calculate what level of financial contributions may be required.

4.8.2 Sewer

The 225mm sewer main that runs down Papawai Road is a concern as it is running at near capacity now. An additional sewer main will be required, which could run parallel to existing lines.

Access to existing sewer lines through Westwood, off West St and off Wood St. Levels are good, with minimal pumping required. The renewal of line from Kempton St through to Church St is programmed, which could take some additional load.

The sewerage plant will require work, but aeration and new pipes could help plant efficiency.

Further investigations and costings of the additional sewer main and work at the plant will be required to calculate what level of financial contributions may be required.

4.8.3 Roading

There are limited access points available to relatively large pieces of land within the FDA. For example, the site at 104A West Street (5.4ha in area) has access off the end of Westwood Ave and via a 15m wide access leg directly off West Street.

Concerns about connectivity, particularly where new roads might go and link out to existing roads, were raised at the Landowner meeting. This is something that will require a lot of consideration through the Structure Plan development process. West Street and Kuratawhiti Street provide access points to the FDA. Wood Street narrows after the intersection with Kempton Street making it less preferable. The Council want to see lots of linkages, off all sides if possible, including pedestrian accesses.

4.8.4 Stormwater

Harvesting and volumes of stormwater is a potential issue. On-site storage of and re-use of stormwater would be the best option.

Run-off from roads will need to be satisfactorily dealt with.

Water race - would be easier if road reserve ran where water races run for maintenance.

Stormwater is something that will require a lot of consideration through the Structure Plan development process.

5.0 Recommendation

Taking into account the above analysis; it is considered that investigations should now move to the next phase for the Greytown FDA structure plan, design and costing and market demand. In this regard the development of the FDA is not considered to be subject to undue public risk or costs. There are residual matters to be worked through, but nothing exists to date to halt the Structure Plan process.

6.0 Next Steps

- Present findings to SWDC Councillors
- Develop a Consultation Strategy
- Present findings to SWDC Maori Standing Committee and initiate Iwi consultation
- Present findings to Greytown Community Board
- Assessment of bulk services requirements (water and sewer in particular) – develop a financial contributions framework
- Generate alternative plan designs – include transport links, services, subdivision standards, open space areas etc

Report Authors:

Honor Clark, Consultant Resource Management Planner

Michael Hewison, Engineer, Eastern Consulting Limited

Esther Dijkstra, EcoAgriLogic Ltd.

Report sponsor and reviewer:

Murray Buchanan, Group Manager Planning and Environment.

Appendix 2:

Greytown Future Development Area Structure Plan

Stage 2: Interim Report

Eastern Consulting Ltd

June 2017

EASTERN CONSULTING LTD

Greytown Future Development Area Structure Plan
Stage 2: Interim Report

June 2017

Report Authors:

Honor Clark, Consultant Resource Management Planner

Michael Hewison, Engineer, Eastern Consulting Limited

For:

SOUTH WAIRARAPA DISTRICT COUNCIL

1.0 Background

The Stage 1 Scoping report sets out the reasons for developing a Structure Plan for the Greytown Future Development Area (FDA), confirms that there is a demand for land for residential development in Greytown, and identifies possible constraints that may have resulted in undue level of risks or impose unreasonable costs on development, including:

- soil contamination from previous land uses
- flooding
- soil suitability
- land stability
- heritage features
- vegetation
- waterways, drains
- infrastructure location, levels and capacity.

After investigating the above matters, the report concluded that the Greytown FDA is not subject to undue public risk or costs, and recommended that the Structure Plan continue to design phase.

2.0 Confirming the Planning Objectives of the Greytown FDA Structure Plan

A Structure Plan for the Greytown FDA will achieve the following objectives:

- Integrated resource management across land in different ownership
- certainty to land owners and Council
- sets out the general layout and form of development recognising owner preferences where possible
- Achieves good urban design
- Coordinated infrastructure provision including transport links
- Sets level of financial contributions – quantify the costs of infrastructure, identify who is responsible for costs and timeframes
- Section 32 of RMA duties – assessment of costs, benefits and alternatives
- Development that is consistent with the design adopted by the Structure Plan

3.0 Consultation Outcomes

Through consultation with landowners within the FDA, local iwi, Council staff, Transport Planners and Government agencies such as the NZ Transport Agency, the Structure Plan development phase has had a variety of inputs. Following is a

summary of the consultation undertaken to date, which outlines a number of the fundamentals necessary to include in the Structure Plan design.

3.1 Consultation with Landowners

Following the landowner meeting in November 2016, it was decided that further consultation was required with the landowners of larger landholdings within the FDA to understand their goals and aspirations for their land and any concerns they may have about the development of the FDA. Individual meetings/discussions have been held with landowners over the last two months. The following is a summary of matters that are important to these landowners:

- Flexibility in development standards – Development of the area closest to town will proceed as soon as possible with a mix of smaller lots. Most other owners want to retain their dwellings on a larger allotment with the possible future development of smaller allotments on the remainder of their properties.
- Openness/ reserve areas/ trees /green growth /gardens all important to Greytown – forms part of the town's identity. What people like about Greytown.
- Existing built character of Greytown maintained – minimise 2 storey dwellings/A frames - adversely affect privacy and are out of character.
- Traffic/infrastructure
- Connectivity/roading links
- Wood Street needs to be upgraded – not wide enough, needs footpath & lighting
- Make a feature of the water race

3.2 Consultation with Local Surveyors

Subdivision in the Wairarapa is mainly undertaken by three Surveying firms: Adamson Shaw; Tomlinson and Carruthers Surveyors in Masterton, and The Surveying Company, which has a satellite office in Carterton. Conversations with representatives from these firms have provided some points that the Surveyors think are appropriate to shape development in the FDA:

- Believe there is little or no demand for sites of 500m2 or below in Greytown
- Suggested minimum lot size around 700m2. More demand for around 1000m2 or larger – historical size
- Size of houses being built are much bigger – 250m2 to 300m2, so sites have to be bigger accordingly
- Consider smaller lots closer to town and progressive size increase with distance from the centre
- Families moving into Greytown. Seen as a cheaper option than Wellington. Want decent size sections providing space for families so kids can run around their own yard.

- To maintain town's character of trees/gardens, sections need to be large enough to accommodate trees (mature trees take up a lot of space)
- Looking at development from a slightly different angle than real estate agents or valuers – driven by their client's demands/desires. Gave examples where a subdivision could have been more intensive but because the owner wanted to retain some land and still live there, they didn't want to subdivide down to the minimum.
- In part they respond to what the client wants – to maximise the income from the site (need to get the most from the site to cover council fees – balancing to ensure the 'big' picture is also thought through by 'averaging' the contributions to provide a neutral environment where the developer can see that they may have a lower cost of fees if they also consider the mix that suits surrounding neighbours) and the mix that they think will sell the quickest.

3.3 Consultation with Local Real Estate Agents

Representatives from Real Estate firms in Greytown, including Harcourts, Ray White, Property Brokers, Mike Pero Real Estate and Bayleys have been spoken to on an individual basis to get their feel for the property market. Below is a summary of their comments:

- Village feel is very much part of Greytown's character
- See future of Greytown as "high-end" of the market. Want to retain "exclusiveness"
- See a demand for mixture of lot sizes. Some demand at the small end, and see sections getting a little smaller
- Believes big demand around 700m2 and 1000m2-1200m2 sections
- Smaller lots closer to West Street a good idea (retiree market / people down-sizing with easy walking/mobility scooter access) with progressively larger lots as you move away from town centre.
- A lot of single people (widowers etc) moving to Greytown. Want smaller size houses and sections
- Families wanting traditional ¼ acre size section, some can't afford bigger
- Big commuter market
- Still a lot of 2nd dwellings, owners might have an apartment in Wellington
- Want certainty

3.4 Local Iwi Consultation

Advice was sort as to the appropriate course of iwi consultation. Contact has been made with the Papawai Marae committee as the representative of iwi in the wider

Greytown Area. Information has been sent to the Chair of the Marae Committee with the understanding that the matter will be discussed at their next meeting. Initial comments were that the area is not known to have any special features or significance to iwi. Background information and draft Structure Plan material will also be presented to the Council Maori Standing Committee at a forthcoming meeting.

3.5 Greytown Community Board

Contact has been made with the Chair of the Greytown Community Board. An informal meeting/information sharing exercise was envisaged with the Community Board and hopefully this can take place in the near future. Background information and draft Structure Plan material will also be presented to the Board at a forthcoming Community Board meeting.

3.6 NZ Transport Agency

Contact has been made with the NZ Transport Agency, Wellington Regional Office regarding the effect of the development of the FDA on the transport network. Initial consultation included information on the FDA.

4.0 Good Urban Design Outcomes

One of the objectives of the Structure Plan is to achieve good urban design outcomes. The New Planning Institute Quality Planning website suggests using the NZ Urban Design Protocol, which is a platform to make New Zealand towns and cities more successful through quality Urban Design. The protocol identifies 7 essential design qualities (the 7 c's) that together create quality urban design:

- Context – buildings, places and spaces are part of the whole town, fit with and enhance surroundings
- Character – reflect and enhance the distinctive character, heritage and identity
- Choice – ensuring diversity and choice for people
- Connections – enhancing how different networks link together
- Creativity – encouraging innovative and imaginative solutions
- Custodianship – ensuring design is environmentally sustainable, safe and healthy
- Collaboration – communicating and sharing knowledge

In summary, the protocol outlines that successful towns are:

- Competitive – thriving economic hubs with a rich cultural life that attract dynamic and innovative people

- Livable – places where people choose to live with high environmental quality, effective transport systems, good leisure and recreational opportunities
- Environmentally responsible – account for needs of present and future generations. Growth is sympathetic of natural environment and cultural heritage. Minimize adverse impacts on natural and cultural systems and waste, energy and resources use. Maximize efficiency of land use and infrastructure
- Opportunities for all – inclusive, celebrates diversity, strong sense of community
- Distinctive Identity – strong identity that builds on unique characteristics
- Shared vision and good governance – genuine engagement. Decision makers work in partnership with businesses, local communities and iwi

Greytown already has these qualities as a town. The challenge is to maintain and enhance the distinctive and special qualities of Greytown and reflect them where possible in further development and in this case the Structure Plan for the FDA.

5.0 Infrastructure Provision – Bulk Service Requirements

5.1 Water

Modeling undertaken for Council in 2006/2007 shows that the demand for water in Greytown, including the additional demand from development within the FDA, was able to be met by the available supply. This work also indicated new mains running through the FDA from Mole St to West Street. Water supply is still not considered to be an issue.

It has been recognized that increased water storage facilities are required. This is recommended to be buffer storage at the water take site. How much extra storage capacity is required needs further assessment. How much it will cost to increase storage capacity also needs to be determined and used to calculate what level of financial contributions may be required to cover these costs.

5.2 Sewer

The existing 225mm sewer main from town running down Papawai Road out to the sewerage treatment plant is running near capacity now. It is clear that an additional main to the plant is needed with or without the pressure from additional development within the FDA. It is expected that this will be a 300mm diameter main running parallel to the existing main. Council Engineering staff have costed the additional main and re-set the financial contributions for Greytown wastewater accordingly.

There will be a need for more than one new sewer main through the FDA. There is a high point in West Street which enables waste to run two ways once it gets to West Street, thereby spreading the load.

More work on the overall cost of the new mains needs to be determined and used to calculate what level of financial contributions may be required. The re-set contributions will form part of a Plan Change.

5.3 Stormwater

Overall there is considered to be "good" soakage in Greytown. The main road ways within the FDA can also be used as secondary flow paths if required.

The level of soakage required needs to be determined and then soakpits within the road reserve areas designed accordingly. For example, a new green field development in Masterton has required design specifications for a 1-in-100 yr event plus 20% for climate change. This may be too strict a requirement here, bearing in mind the "good" amount of ground soakage.

6.0 Transport Links

With limited existing access points into the FDA, and the overall potential for development within the FDA, concerns about connectivity were raised at the landowner meeting and during individual meetings with a number of different landowners. As a result of this, GHD Transport Planners Hastings have been engaged to prepare a Traffic Impact Assessment (TIA) for the FDA. This assessment was asked to focus on the effects of traffic out onto existing roads and some advice as to where new traffic routes might be located.

The following is a summary of GHD's findings:

- *With taking the intensification of the FDA with having 350 lots (recognising the desire to have a mixture of lot sizes ranging from 500 – 1000m2 and keeping consistency with the character of Greytown), the current configuration of the supporting road network at the intersecting roads to SH2 would practically absorb the predicted trip movements during the peak hours.*
- *No adverse traffic impacts are foreseen at this stage.*
- *Trips on West Street have multiple route options in getting to Main Street (SH2) – In our opinion (depending on travelling / commuting north or south during the peak hours), this will be from either Humphries Street, Kuratawhiti Street and North Street.*

- *In terms of catering for the depth of the FDA, it would be recommended that a significant promotion of lots should have access direct / main road through the middle of the FDA (accessed off West Street – this road does not raise any concerning safety issues due to the good sight distances, wide carriageway and other such existing provisions).*
- *Consideration should be given to have supplementary road access into the FDA from the two parallel roads and also Mole Street to allow for greater permeability into the development – and take a proportion of trips away from the proposed central main road.*
- *Existing streetscape on Wood Street should be considered for upgrading to help provide greater consistency of this road.*
- *The proposed roads in the FDA should reflect their level and be of similar character as previous development blocks and previous structure plans in the District Plan. Also give good access / permeability through-out the FDA for walking and cycling.*

7.0 Development Standards

Although the Structure Plan can provide a framework for future development, subdivision of the land must still go through a Council process, as no subdivision is a permitted activity under the District Plan.

As a result of this, the standards for development prescribed by the District Plan are important in shaping the nature and scale of development and managing potential adverse effects of development.

An important aspect regarding development standards that is coming through clear from the landowners, Surveyors and Real Estate Agents is the need to ensure that the standards allow flexibility. This is also one of the 7 c's of the Design Protocol "choice".

There are a number of options available to Council when setting the development standards, including leaving the minimum residential subdivision standards as they are, varying them across the FDA to reflect owner preferences, or increasing the minimum requirements to reduce the overall density of development.

The development standards proposed will be subject to a Plan Change and include a Section 32 evaluation.

8.0 Draft Structure Plan

Attached in Appendix 1 is a cross section design proposed for the Greytown Structure Plan. Something similar to this will form part of the Structure Plan. The cross section indicates areas for vehicular traffic movement (carriageway), cycle path, bunds with reserve planting (big enough for trees to grow large), a pedestrian footpath, water race and the treatment of the water race banks with planting.

An additional plan view will form part of the Structure Plan, showing mainly the transport connections.

9.0 Financial Contributions Framework

Financial Contributions are a tool for ensuring that the adverse effects from development on the environment and communities are minimized and improvements to services are made. The existing Financial Contributions framework of the Combined District Plan (Section 23) provides the basis for demanding contributions, i.e. when they are levied, when they can be waived. Currently, contributions can be in the form of money, land, works or services.

Based on the services requirements assessments above and looking at the proportion of "public good" i.e. allowing access over land to provide better transport links/connectivity, infrastructure contributions particularly for water and wastewater provision and roading need to be adjusted.

10.0 Plan Change

Section 18: Subdivision, Land Development and Urban Growth of the Wairarapa Combined District Plan (The District Plan) provides guidance on managing future urban growth. Policy 18.3.11(e) of the District Plan states:

"The Greytown Future Development Area has been identified as an area of future urban growth. Growth within this area will be restricted until a Structure Plan has been developed for this area in consultation with the local community and has been approved by the South Wairarapa District Council."

It is noted that the District Plan in its current form makes provision for a Structure Plan for the area and subdivision in accordance with the Structure Plan. The standards for a Controlled Activity subdivision in Rule 20.1.2(m) states:

"Any subdivision within the Greytown Future Development Area shall be in accordance with the Structure Plan for this area."

Furthermore, Discretionary Activity Rule 20.1.5(e) states:

"S*ubdivision within the Greytown Future Development Area that Is not consistent with the Structure Plan for this area."*

The current general rule hierarchy of the District Plan is considered satisfactory in enabling development either in accordance or otherwise with the Structure Plan. Changes will however have to be made to the District Plan policies and specific standards for subdivision within the area if a change in the standards ensues. The financial contributions amounts for subdivision will also require change to reflect the actual cost of connecting to public infrastructure and services as discussed above.

11.0 Section 32 Analysis

It is a requirement under Section 32 of the Resource Management Act for Council to provide an assessment of costs, benefits and alternatives. Stage 1 Scoping Report considers the possible constraints of the development of the Greytown FDA and forms part of this assessment. A formal Section 32 evaluation will have to accompany the proposed Plan Change.

12.0 Recommendations

- To proceed with the Structure Plan
- To proceed with a Plan Change including a Section 32 evaluation report to reflect the Structure Plan

Appendix 1: A possible cross section design for the Greytown Structure Plan

Appendix 3:

Preliminary Soil Investigation Report for Wilks Blocks Greytown

EcoAgriLogic Ltd

8 September 2017

Preliminary Soil Investigation Report for Wilks Block Greytown

Report EAL SWDC Wilks Block Greytown 2017-PSI V3

EcoAgriLogic Limited
Leaders in agri-ecological research & development

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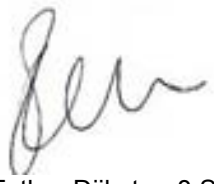
Abbreviations

GWRC	Greater Wellington Regional Council
HAIL	Hazardous Activities and Industries List (October 2011)
MfE	Ministry for the Environment
NES:CS	National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (2011)
PSI	Preliminary Site Investigation
SWDC	South Wairarapa District Council

Certification

This report is certified by Dr. Esther F. Dijkstra of EcoAgriLogic Ltd. PO Box 190, Carterton 5743, who has not less than 15 years of experience as a soil and contaminated site professional, whose highest qualification is PhD Environmental Sciences, University of Amsterdam (1997).



Esther Dijkstra, 8 September 2017

Disclaimer
The information contained in this report by EcoAgriLogic Ltd (EAL) is based upon the best information available to EAL at the time it was drawn up and all due care was exercised in its preparation.
The conclusions and recommendations conveyed in this document are based on information supplied by the Client and the analytical results of representative soil sampling at the time of investigation. While the soil sampling was carried out according to best scientific practice, no guarantee of public health risk due to contamination at the site is given. The analytical results are directly related to the soil cores taken, which are representations of the total area of the subject land. The results are an interpolation of ground conditions between the sampling points and it is possible that undetected contamination exists in locations not directly sampled.
EAL accepts no responsibility for site conditions that were not evident based on the analysis results of representative sampling performed during this investigation. This report was prepared for the single specific purpose of investigating the soil contamination status of the herein described subdivision proposed by the Client. EAL is not responsible for the use of this document for any other purpose. This report is intended for the use of the Client only.

Contents

Preliminary Site Investigation (PSI) Report

Summary

EcoAgriLogic Ltd was engaged by South Wairarapa District Council to determine the National Environment Standard (NES) soil contamination status of Wilks Block, Greytown. The site is a commercial orchard, leased to JR Orchards.

This Preliminary Site Investigation (PSI) Report intends to identify areas where significant soil contamination has resulted from previous land use activities. EcoAgriLogic Ltd collected representative soil samples from the site and tested them for a range of heavy metal contaminants and organochlorine pesticides (OCPs).

After a site inspection and considering the previous site activities and soil testing results, this investigation concludes that the soil at Wilks Block Greytown at least to a depth of 30 cm, is significantly contaminated with arsenic and to a lesser extent with lead, with respect to applicable residential National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (MfE, 2012).

The arsenic concentrations detected pose a potential risk to future users of the site contacting and ingesting the soil.

It is recommended that the site is remediated or a management plan put in place before land use changes to residential. At this point in time, the most effective remediation technique would be the removal of the contaminated soil to a depth of 30 cm and replacing it with clean top soil. The contaminated soil will need to be disposed of in a certified landfill.

1 Introduction

South Wairarapa District Council engaged Esther Dijkstra of EcoAgriLogic Ltd to undertake a preliminary site investigation (PSI) of potential soil contamination for Wilks Block, Greytown ('the site').
The site is part of the Greytown Proposed Future Development Area and will form part of a larger investigation. As such the PSI for the site will be an interim report.

The location of the site is presented in Figure 1.

The purpose of this document is to assess the suitability of the soils for their intended use at the subject site through consideration of previous land use, intended land use and soil analysis results.

This report has been prepared in general accordance with the requirements for a preliminary site investigation (PSI), referred to in the NES soil regulations and as outlined in the MfE's Contaminated Land Management Guidelines (MfE, 2011).

Activities such as soil disturbance, change of use or subdivision of potentially contaminated land are regulated under the Resource Management (National

Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 ('the NES'). The NES is administered by territorial authorities; in respect of the site the relevant territorial authority is South Wairarapa District Council (SWDC). Under the NES, land is considered to be actually or potentially contaminated if an activity or industry on the Ministry for the Environment's Hazardous Activities and Industries List (HAIL, 2011) is more likely than not to have been undertaken on that land.

Greater Wellington Regional Council's (GWRC) Selected Land Use Register (SLUR) records parts of the Greytown Proposed Future Development Area as having a verified history of hazardous activity or industry (figure 1). GWRC understands that these areas have been used for persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds (HAIL A10, 2011).

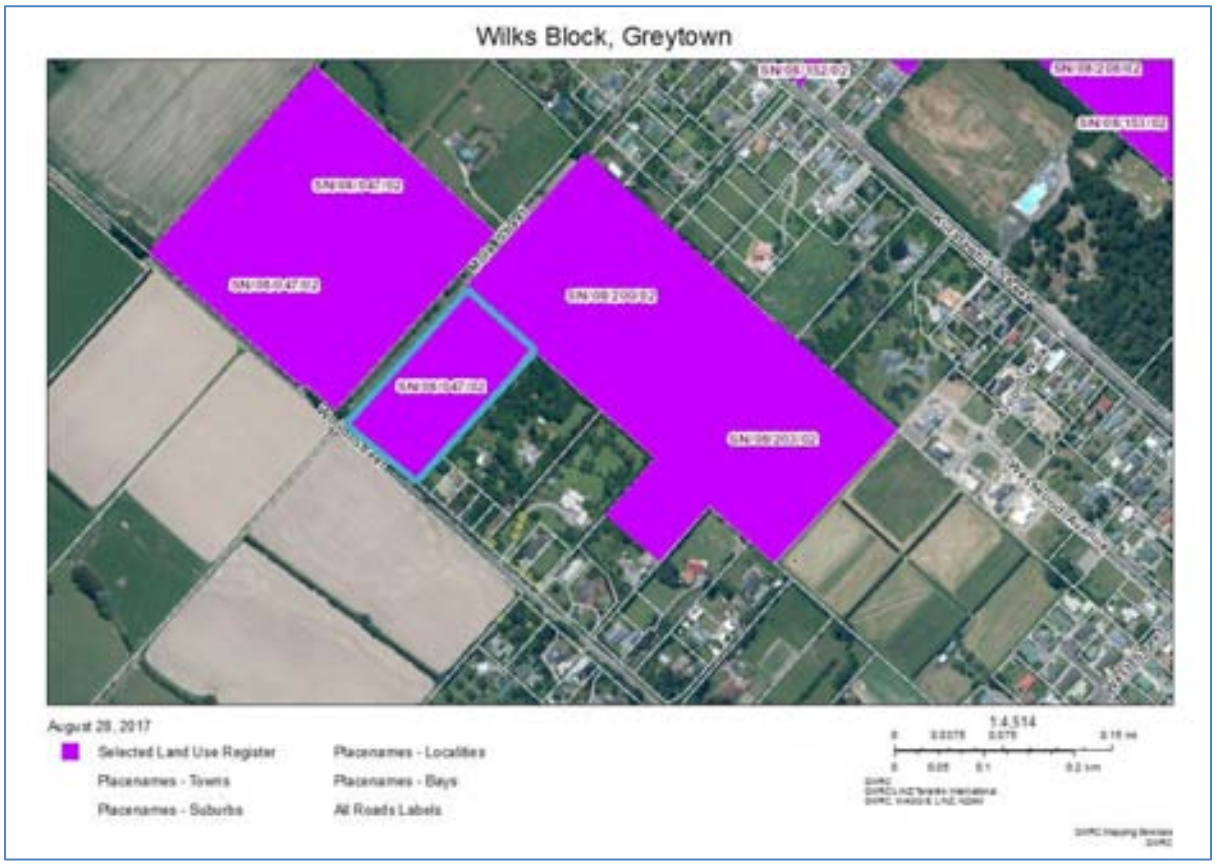


Figure 1. Wilks Block, Greytown (blue line) in relation to other SLUR areas.

2 Site Description

2.1 Site identification and current land use

The site is located on the outskirts of Greytown, Wairarapa and is included in the Greytown Proposed Future Development Area.

The entrance to the site is from Mole Street. The area of the site is approximately 1.9 Ha.

The Moroa water race runs along the entire north eastern boundary of this site.

The address and legal description are provided in Table 1.

Table 1. Site identification

Street Address	Mole Street, Greytown
Legal Description	LOT 15 DEEDS PLAN 310 Certificate of title 336/111
Site Area	Approximately 1.96 Ha
Zoning	Residential (Wairarapa Combined District Plan)

Observations from the site walk over on Tuesday 6 of September 2016:

- The site is planted with a number of apple varieties.
- Within the block there is a variability in tree health with some rows not performing well. In one area, in the middle of this block the trees have been cut
- No visual indications of soil pollution (no hot-spots) were observed during the inspection.
- At the time of sampling the orchard was sprayed with limesulphur.

2.2 Surrounding land use

The site is located in the township of Greytown, and zoned residential under the Combined Wairarapa District Plan, as are the surrounding properties.

The site is recorded on the Greater Wellington Regional Council (GWRC)'s Selected Land Use Register (SLUR) as having a verified history of hazardous activity or industry (figure 1).

The area immediately to the north east of the site is land used as a commercial orchard.

The land use to the south east is (rural) residential.

2.3 Historical information

Aerial photographs of the site were reviewed to identify changes in land use activities on the site. The following years were examined as part of the desktop study:

- 1943, 1963, 1995 (archive GWRC)
- 2004 (Google Earth)

The aerial photograph of 1943 shows that site was planted in orchard trees. This has not changed since then.

2.4 Council property files

South Wairarapa District council property files were obtained and reviewed. The property file gave little information regarding soil contamination.

3 Sampling method

The site was first sampled on Tuesday 6 September 2016. Two composite samples were taken from the Wilks orchard block.
The subsamples were taken in a zig-zag pattern. One composite sample was taken to a depth of 15 cm and consisted of 20 subsamples. The other composite sample was taken from a depth between 15 and 30 cm and consisted of 10 subsamples. All soil samples were taken with a stainless steel hand auger with a diameter of 2.5 cm. The soil samples were analysed for heavy metals and organochlorine pesticides (OCPs) (MfE, 2004). The samples were sent to Hill Laboratories for testing.

Figure 2 Wilks Block sampling grid 16 August 2017. Blue sampling locations represent sampling depth 0-15 cm, yellow sampling locations represent sampling depth 0-15 cm, 15-30 cm and 30-45 cm

Subsequent sampling took place on 16 august 2017 using a sampling grid of approximately 25m by 25 m. 24 locations were sampled with a stainless steel hand auger to a depth of 15 cm, 15-30 cm and 30-45 cm (Figure 2). In total 30 samples were analysed for arsenic only. Table 2 shows the samples that were analysed and those that are on hold.

Table 2 Samples Wilks block 16 august 2017

Sampling sites	Sampling depths		
	0-15 cm	15-30 cm	30-45 cm
1.1	√	hold	hold
1.2	√	√	√
1.3	√	hold	hold
2.1	√	hold	hold
2.2	√	√	√
2.3	√	hold	hold
3.1	√	hold	hold
3.2	√	√	√
3.3	√	hold	hold
4.1	√	hold	hold
4.2	√	√	√
4.3	√	hold	hold
5.1	√	hold	hold
5.2	√	√	√
5.3	√	hold	hold
6.1	√	hold	hold
6.2	√	√	√
6.3	√	hold	hold

√ - samples analysed for arsenic
hold – samples stored till 15 September 2017 for future analysis if necessary

The sampling method was selected after a site investigation indicated that low-concentration heavy metals and herbicides and pesticides was to be expected, related to historic and current horticultural land use (MfE, 2011).

Details of the analytical methods used by Hill Laboratories and laboratory accreditation for analytical methods are in the attached Hill Laboratories report. All standard laboratory procedures were adhered to by Hill Laboratories who are accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised. The tests reported in this document have been performed in accordance with the terms of accreditation.

4 Results

Table 3 summarises the heavy metal results and the OCPs results of the samples taken on 6 September 2016.

Figure 3 shows the arsenic concentrations of the samples taken on 16 August 2017

The full arsenic analysis report of the samples taken on 16 august 2017 can be found in appendix A.

4.1 Heavy metal screen results 6 September 2016

The level of arsenic in the Wilks 0-15 cm sample is above the Soil Contaminant Standard for residential or lifestyle block use (MfE, 2012). The Wilks 15-30 cm sample is slightly above the Soil Contaminant Standard for arsenic.

The level of lead in the Wilks 0-15 cm sample is also slightly above the Soil Contaminant Standard for residential or lifestyle block use (MfE, 2012). The Wilks 15-30 cm sample is well below the Soil Contaminant Standard for lead.

Heavy metals can also occur naturally in soils. The background levels of heavy metals in Wairarapa alluvial soils are given in the table 3 below. There currently are no guideline values for nickel or zinc. The nickel and zinc concentrations found in the samples compare to the background concentration for nickel and zinc in Wairarapa alluvial soils (GWRC, 2005).
The level of copper is well above the background values found in Wairarapa soils. There is no limit for copper in soils.

4.2 Organochlorine pesticides screen

DDT and its metabolite DDE (referred to as ΣDDT), were detected in the sample. The ΣDDT level in the sample is well below the guideline value for residential or lifestyle use.
There is no background value for DDT and its metabolites in soils as DDT doesn't occur naturally in the soil.

Terbuthylazine was also detected in both samples. Terbuthylazine (e.g. Gardoprim®) is a selective residual herbicide for grass and broadleaf weed control in forestry, maize, sweet corn, peas, certain orchard crops, and long-term non-selective weed control in non-crop situations (FAR, 2007)
Terbuthylazine has a low aqueous solubility and does not appreciably penetrate below 5-10cm of the soil profile (again dependent soil texture and organic matter content). The similar low concentrations of terbuthylazine in the Wilks samples do suggest that these are the result of historic use of this herbicide.
No soil standard for terbuthylazine could be found.
Terbuthylazine is of relatively low acute toxicity, and is classified as a Group D carcinogen because there is inadequate evidence to determine its carcinogenicity in humans (USEPA).

Table 3. Heavy metal Screen and OCP results 6 September 2016

	Wilks 0-15 cm	**Wilks 15-30 cm**	**Soil Contaminant Standard[1]** (mg/kg)	**Background Concentrations[2]** (mg/kg)
Total Recoverable Arsenic (mg/kg)	71	22	20	<2-7
Total Recoverable Cadmium (mg/kg)	0.30	0.11	3	<0.1-0.2
Total Recoverable Chromium (mg/kg)	20	19	460	11-21
Total Recoverable Copper (mg/kg)	132	51	NL	7-19
Total Recoverable Lead (mg/kg)	240	65	210	9-34
Total Recoverable Nickel (mg/kg)	20	20	-	6-21
Total Recoverable Zinc (mg/kg)	122	81	(300)[3]	44-121
ΣDDT (mg/kg)	3.7	1.00	45	-
Terbuthylazine	0.05	0.04	-	-

[1] Soil Contaminant Standard for residential use (based on scenario of 10% of all produce consumed is home-grown); MfE, 2012
[2] Background soils concentration ranges in soils in the Wellington Region; Main soil Type 4 (Wairarapa Alluvium). GWRC (2005)
NL No Limit

4.3 Arsenic results 16 August 2017

Figure 3 shows the arsenic concentrations in the soil of Wilks block. The arsenic concentrations in the top soil of all sample locations (0-15 cm) is well above the arsenic soil contaminant standard, which is 20 mg/kg (MfE, 2012). The arsenic concentration in the subsequent layer (15-30 cm) is also about the soil contaminant standard (MfE, 2012).
The arsenic concentrations in the layer from 30-45 cm is below the soil contaminant standard (MfE, 2012) for all samples apart from sampling location 6.2.

The arsenic concentrations show a more or less homogeneous contamination pattern caused by spraying of horticultural chemicals, in this case lead arsenate.

Figure 3 Levels or Arsenic (mg/kg) in Wilks Block, Greytown. Blue sampling locations represent sampling depth 0-15 cm, yellow sampling locations represent sampling depth 0-15 cm, 15-30 cm and 30-45 cm

5 Discussion

5.1 CSM

This section presents a conceptual site model (CSM) based on information collected during the SIR.

The CSM has been developed based on an assessment of soil contamination (source), potential routes of exposure associated with the development (pathways), and sensitive receptors that may be present in current and future use of the site. The site only presents a risk if there is one or more linkages by which a contaminant could migrate from a source along a pathway and affect a sensitive receptor.

Based on readily available historical information, the site has been used as a horticultural site at least since 1943 when an orchard was clearly visible on the aerial photograph.

Up until the 1970s a range of persistent organochlorine (like DDT and dieldrin) and metal based pesticides such as lead arsenate were extensively used on horticultural crops in New Zealand. A study of horticultural properties established prior to 1975 in the Auckland region indicates that the levels of arsenic, copper, lead, DDT and dieldrin in the soil exceeded the guideline values (Gaw et al., 2002). It is likely that horticultural soils elsewhere in New Zealand will also contain elevated levels of contaminants.

Soil contamination from historic agrichemical use may pose risks to human health and the environment when these properties are developed for residential subdivisions.

After a site inspection and considering the previous site activities and soil testing results, this investigation concludes that the topsoil of the site up to a depth of 30 cm contains concentrations of arsenic above the applicable residential National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (MfE, 2012).

Arsenic is very toxic to humans and is a known human carcinogen (MfE, 2006). Toxic effects associated with exposure to arsenic include irritation of the stomach and intestines, skin changes, reduced nerve function and damage to blood vessels. Repeated exposures to lower concentrations of arsenic can result in concentrations in the body that are fatal or can cause serious health effects. Direct skin contact with high concentrations of arsenic can irritate the skin.
Young children are particularly at risk, due to their size, and ingesting soil due to hand to mouth behaviour behavioural patterns, an average child up to 100 mg of soil per day.

The level of arsenic found in the samples of the site are more likely to cause a chronic, long term risk (e.g. over 30 years) from lower exposure and hence do not apply to stock.
The main exposure pathway for residential occupants is by touching and breathing in contaminated soil or dust when gardening and eating vegetables, in particular root crops, grown in a contaminated area. This is a medium and longer term risk.

Neighbours of the subdivision development might also be at risk by breathing in wind-blown contaminated soil particles and dust form the site redevelopment for housing. This risk is low.

The risk to surface and groundwater is deemed to be low as arsenic is not very mobile. Arsenic binds very strongly to soil and so leaching into surface and groundwater is expected to be limited. Surface runoff is also considered a low risk.

5.2 Options for remediation

The soil testing results concluded that the soil at Wilks Block Greytown is significantly contaminated with arsenic and to a lesser extent with lead at least to a depth of 30 cm, with respect to applicable residential National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (MfE, 2012).

The contamination is spread over the entire site, more or less evenly and no hotspots were detected.
It is recommended that the site is remediated or a management plan put in place before land use changes to residential use.

Physical remediation by removing/excavating the contaminated soil and replacing it with clean top soil is the most thorough and quick, but also very expensive. To remove the soil to a depth of 30 cm over the entire block the total volume will be approximately 5700 m^3.

Capping the current contaminated soil with a layer of clean soil of at least 30 cm and a protective foil between the contaminated and the clean soil could possibly an option. This option will need a management plan as there will always be a risk of someone digging through into the contaminated soil. It is possibly not a preferred option for a residential area, but it might be and option for a recreational area or industrial area.

Vertical mixing is not recommended if the estimated depth of mixing requires to achieve a safe contaminant concentration is greater than 0.5 m (NSW EPA, 2003).

To estimate the necessary vertical mixing the following equation has been applied:

$$y = \frac{x(a-b)}{0.9H-b}$$

y = estimated vertical mixing depth (mm)
x = depth of soil profile in mm in which concentration is 'a' (mg/kg)
a = maximum concentration for the principal contaminant (mg/kg)
b = background concentration of the principal contaminant (mg/kg
H = National Environmental Standard (mg/kg) (NES, 2012)
0.9 = safety factor which takes into account inefficiencies in the mixing process

x (mm)	a* (mg/kg)	b (mg/kg)	H (mg/kg)	y (mm)	y (m)
300	89	7	20	2236	2.2
300	89	7	80	378	0.38

*average maximum arsenic value of the 0-15 cm layer and the 15-30 cm layer (sampling location 1.2)

The above table shows that the soil needs to mixed vertically to a depth of 2.2 m to achieve the safe arsenic concentration of 20 mg/kg for residential use. This is far greater than the recommended 0.5 m by NSW EPA (2003).

The table also shows that vertical mixing could be possible if remediated to the arsenic standard for recreational use, which is 80 mg/kg. In that case the mixing depth needed would be 0.38 m.

Biological remediation is not very effective and not considered for arsenic E. Hood, 2006). It will also need to be managed and monitored and it will take a long time for a site to be cleaned up in this way.

Soil screening and soil washing according to particle size is a process whereby the contaminants are physically separated from the rest of the soil. Contaminants are

often contained in the finer clay and silt particles. This method is not cost-effective for soils with high clay and silt contents (>30%), such as the soil type at the site. Chemical remediation (washing or flushing the soil with /or chemicals and retrieving the leachate) could be an option in the future.

6 Recommendation

After a site inspection and considering the previous site activities and soil testing results, this investigation concludes that the soil at Wilks Block Greytown at least to a depth of 30 cm, is significantly contaminated with arsenic and to a lesser extent with lead, with respect to applicable residential National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (MfE, 2012).

The arsenic concentrations detected pose a potential risk to future users of the site contacting and ingesting the soil.

It is recommended that the site is remediated before land use changes to residential use. At this point in time, the only effective remediation technique to lower the arsenic concentration in the soil of the site to the applicable residential National Environmental Standard for arsenic is physical remediation by removing the soil and replacing it with clean topsoil. The contaminated soil will need to be disposed of in a certified landfill.

7 References

Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health. Ministry for the Environment, 2011.

Contaminated Land Management Guidelines No. 2. Hierarchy and Application in New Zealand of Environmental Guideline Values. Ministry for the Environment, 2003.

Contaminated Land Management Guidelines No. 5. Site Investigation and analysis of Soils. Ministry for the Environment, 2011.

Gaw (2002) Pesticide Residues in Horticultural Soils in the Auckland Region, Working Report No. 96, Auckland Regional Council, February 2002.

The Apple Bites Back: Claiming Old Orchards for Residential Development. Ernie Hood. Environ Health Perspect, 2006.

User's Guide: National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health. Ministry for the Environment, 2012.

Appendix A - Laboratory results 16 August 2017

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Hamilton 3240 New Zealand
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W www.hill-laboratories.com

ANALYSIS REPORT

Client:	Eco AgriLogic Limited	Lab No:	1826985	SPv1
Contact:	Dr E Dijkstra	Date Received:	17-Aug-2017	
	C/- Eco AgriLogic Limited	Date Reported:	24-Aug-2017	
	PO Box 190	Quote No:		
	Carterton 5743	Order No:		
		Client Reference:		
		Submitted By:	Dr E Dijkstra	

Sample Type: Soil

	Sample Name:	Wilks 5.1 0-15 16-Aug-2017	Wilks 5.2 0-15 16-Aug-2017	Wilks 5.2 15-30 16-Aug-2017	Wilks 5.2 30-45 16-Aug-2017	Wilks 5.3 0-15 16-Aug-2017
	Lab Number:	1826985.1	1826985.2	1826985.3	1826985.4	1826985.5
Total Recoverable Arsenic	mg/kg dry wt	81	85	57	9	105

	Sample Name:	Wilks 6.1 0-15 16-Aug-2017	Wilks 6.2 0-15 16-Aug-2017	Wilks 6.2 15-30 16-Aug-2017	Wilks 6.2 30-45 16-Aug-2017	Wilks 6.3 0-15 16-Aug-2017
	Lab Number:	1826985.6	1826985.7	1826985.8	1826985.9	1826985.10
Total Recoverable Arsenic	mg/kg dry wt	64	63	61	32	61

	Sample Name:	Wilks 1.1 0-15 16-Aug-2017	Wilks 1.2 0-15 16-Aug-2017	Wilks 1.2 15-30 16-Aug-2017	Wilks 1.2 30-45 16-Aug-2017	Wilks 1.3 0-15 16-Aug-2017
	Lab Number:	1826985.11	1826985.12	1826985.13	1826985.14	1826985.15
Total Recoverable Arsenic	mg/kg dry wt	78	106	72	14	92

	Sample Name:	Wilks 2.1 0-15 16-Aug-2017	Wilks 2.2 0-15 16-Aug-2017	Wilks 2.2 15-30 16-Aug-2017	Wilks 2.2 30-45 16-Aug-2017	Wilks 2.3 0-15 16-Aug-2017
	Lab Number:	1826985.16	1826985.17	1826985.18	1826985.19	1826985.20
Total Recoverable Arsenic	mg/kg dry wt	88	90	38	10	72

	Sample Name:	Wilks 3.1 0-15 16-Aug-2017	Wilks 3.2 0-15 16-Aug-2017	Wilks 3.2 15-30 16-Aug-2017	Wilks 3.2 30-45 16-Aug-2017	Wilks 3.3 0-15 16-Aug-2017
	Lab Number:	1826985.21	1826985.22	1826985.23	1826985.24	1826985.25
Total Recoverable Arsenic	mg/kg dry wt	79	81	35	8	117

	Sample Name:	Wilks 4.1 0-15 16-Aug-2017	Wilks 4.2 0-15 16-Aug-2017	Wilks 4.2 15-30 16-Aug-2017	Wilks 4.2 30-45 16-Aug-2017	Wilks 4.3 0-15 16-Aug-2017
	Lab Number:	1826985.26	1826985.27	1826985.28	1826985.29	1826985.30
Total Recoverable Arsenic	mg/kg dry wt	76	74	46	9	66

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil

Test	Method Description	Default Detection Limit	Sample No
Environmental Solids Sample Preparation	Air dried at 35°C and sieved, <2mm fraction. Used for sample preparation. May contain a residual moisture content of 2-5%. Analysis performed at 1 Clyde Street, Hamilton.	-	1-30
Total Recoverable digestion	Nitric / hydrochloric acid digestion. Analysed at 1 Clyde Street, Hamilton. US EPA 200.2.	-	1-30
Total Recoverable Arsenic	Dried sample, sieved as specified (if required). Nitric/Hydrochloric acid digestion, ICP-MS, screen level. Analysed at 1 Clyde Street, Hamilton. US EPA 200.2.	2 mg/kg dry wt	1-30

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

This report must not be reproduced, except in full, without the written consent of the signatory.

Ara Heron BSc (Tech)
Client Services Manager - Environmental

Appendix 4:

Greytown Future Development Area

Report for South Wairarapa District Council

Traffic Impact Assessment

GHD Limited

14 July 2017

CLIENTS | PEOPLE | PERFORMANCE

Greytown Future Development Area

Report for South Wairarapa District Council

Traffic Impact Assessment

July 2017

INFRASTRUCTURE | MINING & INDUSTRY | DEFENCE | PROPERTY & BUILDINGS | ENVIRONMENT

Contents

1. Introduction

1.1 Background

GHD Ltd has been commissioned by Eastern Consulting Ltd (on behalf of their client South Wairarapa District Council, SWDC) to prepare a Traffic Impact Assessment (TIA) in support of the Greytown Future Development Area (FDA) and in aid for a Structural Plan amendment to the Combined District Plan.

This TIA considers and evaluates the overall traffic impact of the proposed development on the surrounding road network. The level of impact is reported in terms of anticipated affects in respect operational performance and safety.

The assessment considers previously submitted documentation with regards to the Greytown FDA and the initial scoping of the suitability of the FDA with being rezoned for urban development *("Greytown Future Development Area Structure Plan Stage 1 Scoping Report, Eastern Consulting Ltd, February 2017").*

1.2 Locality

The proposed Greytown FDA is located between Kuratawhiti and Wood Street and between Mole Street and West Street – it comprises of approximately 35 hectares of land, in multiple (legal) ownerships (Figure 1 and Figure 2 shows the locality of the FDA).

Greytown is a town in the Wairarapa region of New Zealand, on State Highway 2 approximately 25 kms southwest of Masterton and 80 kms northeast of Wellington. Due to the image and character of the town, Greytown has become an increasing popular weekend and holiday destination – with increasing pressure on the residential property market.

The proposed FDA has recently (2006) been rezoned for urban development, and as such, assessing the traffic impact of the development and its predicted intensification will (in addition to Section 1.1) give guidance as to the general layout and form of which the FDA should consider.

"The FDA is largely characterised by "ribbon" residential development along Kuratawhiti and Wood Streets, with dwellings fronting these streets with areas of bare land to the rear. The land in the middle of the FDA is used for agriculture and is accessed off Mole Street. The Mole Street end of the FDA has a rural character."[1]

[1] Greytown Future Development Area Structure Plan Stage 1 Scoping Report, Eastern Consulting Ltd, February 2017

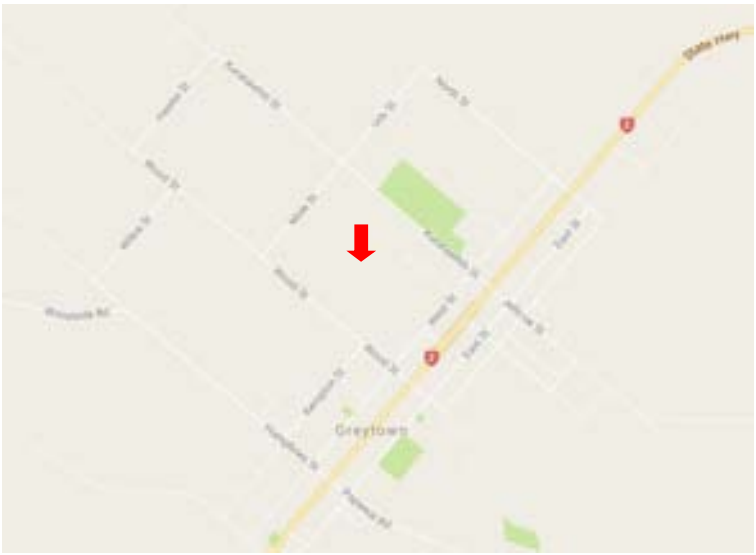

Figure 1 – Locality Plan

Figure 2 - Diagram of the Greytown FDA – Map 59, Combined District Plan

1.3 Existing Development in the FDA

As noted in the Stage 1 Scoping Report (Eastern Consulting Ltd) and from on-site observations, a proportion of development has occurred within the FDA.

"Since the creation of the FDA, one larger development has occurred within the area, a 17 lot residential subdivision accessed off West Street, now known as Westwood Avenue."[2]

This development, with the addition of a recent approved Resource Consent Application[3] (for a 13 lot subdivision, accessed off the end of Westwood Avenue), is considered to be complete with no further predicted traffic movements using Westwood Avenue nor continuation of the road into the larger sections of the FDA.

[2] Greytown Future Development Area Structure Plan Stage 1 Scoping Report, Eastern Consulting Ltd, February 2017

[3] 1735 – M & J Searle Family Trust

2. Existing Road Environment

2.1 Road Network

As stated above, the proposed FDA is located between Kuratawhiti and Wood Street and between Mole Street and West Street.

The following sub-sections give a brief summary of the existing characteristics for the surrounding road network to the FDA.

2.1.1 Kuratawhiti Street

Kuratawhiti Street is situated on the northeast side of the FDA (parallel with the development) and runs perpendicular from SH2. Residential dwellings front the street with areas of bare land to the rear (into the development area).

The existing carriageway is sealed and comprises of relatively wide (un-marked) lane widths of 4 m. The road has an average daily traffic volume (ADT) of 769 vehicles per day (Source: Mobile Road). The alignment of the street is straight and flat with good sight distances along the entire length.

There is footpath provision on one side of the road, as seen in Figure 3.

The road arrangement is consistent for Kuratawhiti Street between West Street and Mole Street.

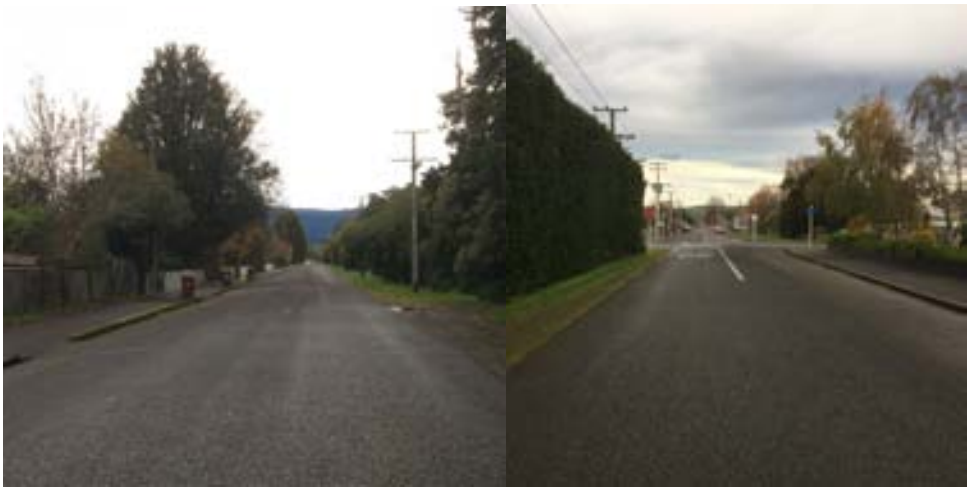

Figure 3 – Kuratawhiti Street (approximately 30 m northwest from West Street)

Soldiers Memorial Park is located off Kuratawhiti Street (between West Street and Mole Street) – an existing zebra crossing is present to access the swimming pool and sports grounds.

Of interest for the FDA, Kuratawhiti Street forms intersections with SH2 / Jellicoe Street and with West Street. At these intersections the following observations are made:

- Kuratawhiti Street traffic yields to West Street under Stop conditions;

- There has been additional layout changes done at the Kuratawhiti Street / West Street intersection to further enhance the Stop yield conditions and approaching visibility constraints with the hedge-line (yellow painted kerb build-outs);
- Kuratawhiti Street traffic yields under Give-Way conditions at the SH2 / Jellicoe Street / Kuratawhiti Street intersection;
- No formal right turn bays are present on SH2 (for traffic turning either into Jellicoe Street or Kuratawhiti Street);
- The posted speed limit is 50 km/hr;
- There is good presence of signage to each approach of the intersections; and
- Street lighting is present on existing power-poles.

2.1.2 Wood Street

Wood Street is situated on the southwest of the FDA, running parallel with the development and perpendicular to SH2. Residential dwellings front the street with areas of bare land to the rear (into the development area) – with larger land lots and / or agriculture lots at the rear of the development (closer to Mole Street). The street has an ADT of 362 vehicles / day (Source: Mobile Road)

Characteristics of this street change whilst travelling between West Street and Mole Street:

- From SH2 to West Street – carriageway is approximately 6 m wide, with no on-street parking and confining street frontage (see Figure 4, left);
- West Street to Kempton Street – this portion of Wood Street has similar characteristics as Kuratawhiti Street - sealed with un-marked lane widths of 4 m and a footpath provision on one side of the street;
- Kempton Street to Mole Street – carriageway widths decrease significantly through-out the section (approximately 5.2 – 5.5 m in width) and no formal roadside kerbs and footpath provisions – road has a ‘rural’ character as seen in Figure 5;
- Hewson Lane (approximately half-way between West and Mole Street) is a current (minor) development that has access from Wood Street – Hewson Lane is 8 m wide with a footpath on one side – this has limited connectivity to the existing characteristics and / or layout of Wood Street.

At this stage, due to the confining section of Wood Street between SH2 and West Street, it is not anticipated that any generated trips from the FDA would commute along this proportion.

Figure 4 – Wood Street (at West Street, looking towards SH2 and Kempton Street, respectively)

Figure 5 – Wood Street (looking from Hewson Lane to Mole Street)

2.1.3 Mole Street

Mole Street is at the northwest side of the FDA and is the extents of the development area. Mole Street is currently a narrow sealed carriageway (with no kerbs and lane markings, approximately 4.8 m wide in total) and connects Wood Street and Kuratawhiti Street.

The land in the middle of the FDA is used for agriculture and is accessed off Mole Street.

It is a low volume road with an ADT of 118 vehicles / day and is not considered to be of concern for the FDA if limited generated traffic connects through this road.

Figure 6 - Mole Street (looking northeast)

2.1.4 West Street

West Street is on the southeast side of the FDA and runs parallel with SH2, providing an alternative route to SH2 (Main Street) at times of peak activity for local residents commuting either north or south from Greytown.

The road is a sealed carriageway with a width of greater than 12 m – there is straight and flat alignment with good forward sight distances along the entire length of the road.

The road has an ADT of 813 vehicles / day (Source: Mobile Road) and a posted speed of 50 km/hr.

Street lighting on existing power-poles and a footpath provisions are both present.

There is good connectivity from West Street to SH2, with multiple cross-roads running perpendicular between these roads. If commuting north or south along West Street, to avoid the main 'town' section of SH2, there are two intersections of interest:

- West Street / North Street;
- West Street / Humphries Street

Both intersections are priority control with the Give-Way on West Street – all approaching roads to the cross-roads intersections are relatively wide with straight / flat alignment and good sight distances.

Figure 7 – West Street (looking in the southwest direction, by Hastwell Street)

2.1.5 Additional Existing Intersections of Interest

The permeability and connectivity of existing traffic in the area of Greytown that is in the northwest side of SH2 has multiple points on entry / exit with SH2 – these being with:

- Humphries Street / Papawai Road;
- Wood Street / Church Street;
- Hastwell Street;
- Kuratawhiti Street / Jellicoe Street;
- North Street

The existing infrastructure at these locations was observed to be adequate for current conditions and / or a potential increase in traffic flows (to be discussed in Section 3 of this report) – this providing an initial indication as to the baseline operating conditions of the network.

2.2 Sustainable Transport Assessment

Currently the Metlink Bus 204 provides a route around the vicinity of the FDA, connecting Greytown town with Woodside Train Station.

Metlink Bus 200 also connect Greytown with Masterson, Featherston and Martinborough (the route for this service in Greytown is directly through SH2).

The Chartered Institute of Highways and Transportation (UK) provides Guidelines for journeys on foot and has indicated that a 10 minute walking distance should reflect the upper limit an average person would be inclined to walk to access a Bus Stop. An average adult walking speed is 1.3m/s, giving a range of up to 800 m being covered in a 10 minute period. This radial distance would allow for the FDA to be reasonably well served by the existing bus service routes (both Metlink Buses 204 and 200).

The same guideline also details appropriate walking and cycling distances to and from new developments which can be used to assess the accessibility of proposed development. It specifies a maximum of 2km walking distance from residential dwellings to key destinations and is accepted as a suitable measure within New Zealand.

With a pedestrian radial distance of 2 km from the FDA indicates that the proposed development will be well served by the majority of surrounding road network with footpath provisions, although there are certain sections without footpaths (Wood Street).

At this stage cycling on the existing local road network with the observed traffic flows conditions and wide carriageway widths will not be an immediate concern.

The focus will be on ensuring that the development has strong internal walking and cyclng connectivety providing safe and efficeint access to the existing external network.

2.3 Existing Peak Hour Turning Counts

Due to the relatively low traffic volumes around the surrounding streets of the FDA and acknowledging that limited time and resources were available during a site visit, the following sites were selected to give an indication as to existing operational conditions and likely trip generation from similar neighbourhoods:

- SH2 / Jellicoe Street / Kuratawhiti Street;
- Kuratawhiti Street / West Street;
- SH2 / Humphries Street / Papawai Road

Traffic counts, summarised per approach, are shown in Table 1 below. A site visit to Greytown and the surrounding area of the FDA was carried out on the 22nd – 23rd May 2017.

Table 1 Traffic Counts

Location	Approach Arm	Peak Hour / Count (vph) - Observed	ADT (vpd) – Source: Mobile Road
SH2 / Jellicoe Street / Kuratawhiti Street	Kuratawhiti Street	08:00 / 26 17:00 / 26	596
	SH2 North	08:00 / 360 17:00 / 330	4186
	Jellicoe Street	08:00 / 60 17:00 / 22	401
	SH2 South	08:00 / 268 17:00 / 464	4398

Kuratawhiti Street / West Street	Kuratawhiti Street (northwest)	08:00 / 46 17:00 / 28	769
	West Street (northeast)	08:00 / 48 17:00 / 42	685
	Kuratawhiti Street (southeast)	08:00 / 29 17:00 / 32	596
	West Street (southwest)	08:00 / 62 17:00 / 108	708
SH2 / Humphries Street / Papawai Road	Humphries Street	08:00 / 98 17:00 / 104	1666
	SH2 North	08:00 / 358 17:00 / 292	4186
	Papawai Road	08:00 / 48 17:00 / 24	60
	SH2 South	08:00 / 344 17:00 / 460	4398

The morning and evening peak hour periods for Greytown used for this assessment were derived from analysis of the nearby NZ Transport Agency State Highway tube count station (Location: north of Wood Street), these being 08:00 – 09:00 AM and 17:00 – 18:00 PM respectively.

It should be noted that the peak hour traffic flows on SH2 are approximately 8% of the total vehicles per day – on average, this peak hour percentage split shows good correlation between the traffic counts observed on-site and the State Highway tube counts.

2.4 Traffic Growth

It is to the belief that any application of traffic growth rates may over inflate the true effects generated by such a development proposal and subsequently misguide the level of infrastructure upgrades that may also be required over time.

It is likely that this development will occur over a number of years with full traffic affects not being recognised until the site is fully developed, therefore assessing the impact on the existing network from the full generated trips will be a conservative assessment – adequate for this TIA.

2.5 Safety

A search was conducted on the New Zealand Transport Agency's CAS system for the surrounding road network for the period 2012 to 2016 to identify crashes that may be affected by the proposed development.

The majority of crashes that have occurred in the vicinity of the FDA and surrounding road network (including SH2) have been either been minor or non-injury in nature – with no existing crash patterns of significance.

Two serious injury crashes have occurred that involved pedestrians – either from inattention and / or heedless crossing movements from the pedestrian.

A detailed review of the current safety performance for the surrounding area has not been carried out however from the review of the crashes, there has not been any concerning findings that one should be aware of when considering this development and the immediate receiving environment.

3. Traffic Impact of the Development

3.1 Proposed Development

The proposed development is approximately 35 hectares of land and with current standards, the minimum subdividable lot size of 500 m^2, a potential for 536 lots to be developed

It has been noted that due to the demand for larger lot sizes in the area and with keeping similar character to the surrounding neighbourhood, an average lot size of 750 m^2 has been deemed more appropriate for the assessment of predicted trips being generated – an approximate 350 lots to be developed.

SWDC has confirmed that an allowance of 50 lots should be included i.e. assessing the impact of the FDA with 400 lots – this is considered to be representative of the upper range.

A 25% land reduction in net area has been considered to allow for roading, reserves and other such infrastructure.

3.2 Predicted Generated Traffic

2013 Census statistics[4] for Greytown suggests that 17% of dwellings in Greytown are unoccupied and also, 28% of people in Greytown are aged 65 years and over – these statistics would allude to the fact that assessing the development by the industry standard categories would be representative of the upper range.

The Transfund NZ Report No. 209 "Trips and Parking Related to Land Use" Table 6.1 outlines typical trip generation rates for various housing types. These are shown in Table 2 below.

Table 2 Typical Trip Generation Rates (Transfund NZ Report No. 209) and Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development Table D 1

Land Use	Trip generation – daily		Trip generation – Peak hour (vph)	
	Transfund	Austroads	Transfund	Austroads
Dwelling house	10.4/dwelling	9.0/dwelling	1.2/dwelling	0.85/dwelling
Medium density residential flat building	6.8/dwelling	4-5/dwelling	0.8/dwelling	0.4-0.5/dwelling
Housing for aged and disabled persons	2.0/available bed	1-2/dwelling	0.5/available bed	0.1-0.2/dwelling

[4] Statistics New Zealand – www.stats.govt.nz

It should be noted that the trip generation rates used in the Transfund report above are generally higher than those shown in the Austroads "Guide to Traffic Management Part 12: Traffic Impacts of Development".

As the Austroads guide uses more up to date figures from a larger sample size, GHD has used the Austroads figures for the purposes of this traffic impact assessment. For a dwelling house the Austroads guide uses figures of 9 vehicle movements per day per dwelling and 0.85 per dwelling as the peak hour traffic generation.

Further to the comparison between the different trip generation rates, a comparison against the traffic flow from Kuratawhiti Street (northwest from West Street) has been undertaken. This section of Kuratawhiti Street, prior to the intersection with West Street, services an excess of 100 existing dwellings with an ADT of 769 vehicles per day and a peak hour traffic count of 74 and 88 vph (Two-way flow, entering and exiting on West Street - AM and PM peak hours respectively).

This high-level assessment equates to a peak hour generation of 0.8/dwelling. This shows similar correlation to the Austroads trip generation for a dwelling house – therefore giving a degree in confidence with using a 0.85 per dwelling as the peak hour traffic generation (although, this would represent the upper limit).

Table 3 FDA Expected Trip Generation – 400 Lots

Basis of Trip Generation	Trip generation – daily	Trip generation – Peak hour (vph)
Austroads Dwelling house	3600	340

3.3 Trip Distribution

It is proposed that the development should provide a connection running through the middle, parallel with Kuratawhiti and Wood Streets (connecting West and Mole Streets). The road should reflect a local road in terms of its function and flow distribution – consideration should be given to the intensification of lot sizes through-out the development i.e. 500 -750 m^2 lots should be concentrated closer to West Street to encourage distribution onto West Street (as opposed to Mole Street, which should only cater for the larger lots at the far end of the FDA).

Connectivity from the middle of the FDA and onto either Kuratawhiti or West Street would be critical in providing a level of permeability and distribution for generated trips, without solely focusing on one point of access into the FDA. Figure 8 shows this distribution logic as to which the FDA should cater for.

Figure 8 – Flow Distribution Logic

At this stage the assessment of impact for the proposed land development has been carried out within the surrounding roads and how the traffic flows will impact on the SH2.

West Street is considered to be the main local collector road for the trip generation of the FDA – generated trips traveling north or south through-out the peak hours. West Street has multiple access points to SH2, for example, Humphries Street for southbound commuting and either Kuratawhiti Street or North Street for northbound commuting – avoiding the 'town' section of SH2.

No isolated testing has been completed at potential access points into the FDA – although, this impact would be considered minor if the correct connectivity between the proposed central local road and the parallel surrounding streets is provided.

3.4 Impact on existing Transport Network

A review of the impact from the expected generated traffic on the existing traffic volumes of the surrounding road network and how this will affect distribution onto SH2 has been undertaken.

Based upon the trip generation of 340 vph from the FDA and assigning this volume onto the existing approaches (Humphries and Kuratawhiti Street) that connect with SH2, a clear understanding can be drawn as to whether or not the existing intersections can absorb the trips generated – again, this is representing an upper limit and in reality, additional trip distribution will occur, dispersing the traffic volumes to lower amounts.

Figure 6.5 Practical Absorption Capacity at Unsignalised Intersections (Austroads Part 5, Intersections at Grade) has been used to assess the ability of these intersections to absorb the additional traffic generated by the proposed development – Figure 9 illustrates this theory.

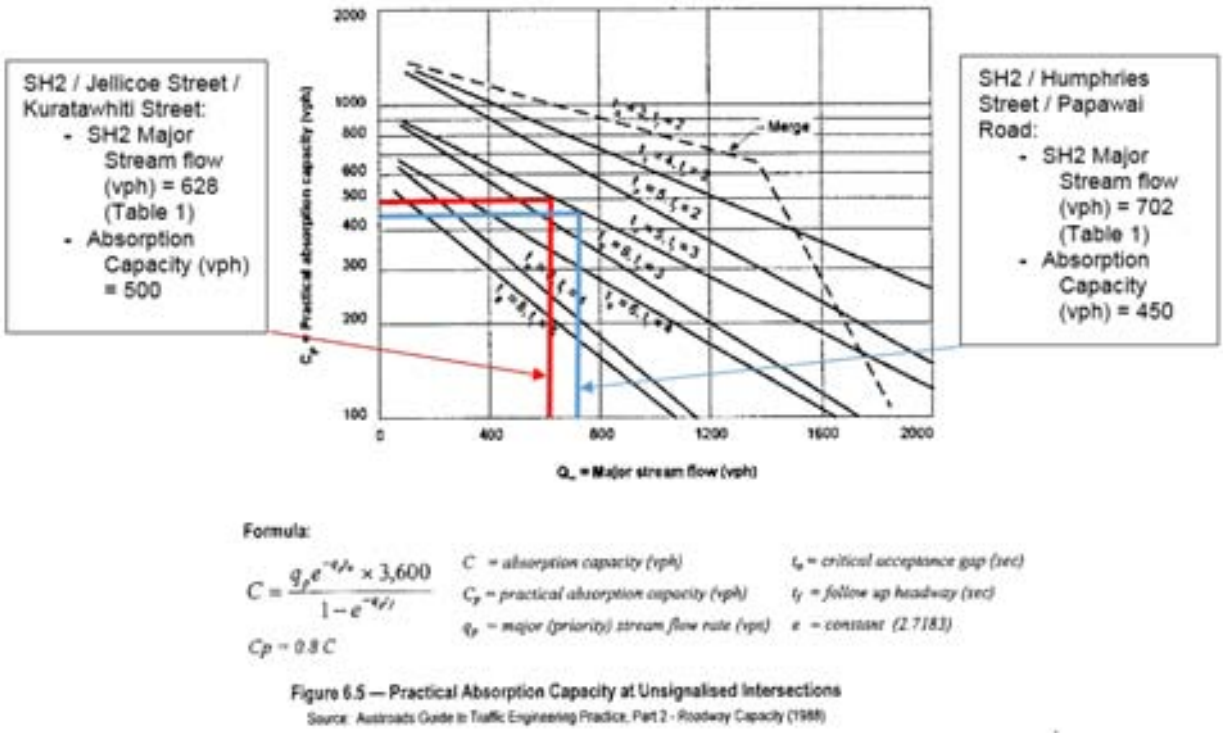

Figure 9 - Practical Absorption Capacity at Unsignalised Intersections

The Practical Absorption Capacity at both intersections is in excess of the predicted traffic volumes and it is assessed that they can safely absorb the additional traffic generated by the development – as seen in Table 4 below.

Table 4 Practical Absorption Capacity during AM Peak

Intersection	Practical Absorption Capacity* (vph) from Austroads Fig 6.5	Existing peak hour (vph)	Generated traffic (vph)	Total traffic (vph)
SH2 / Jellicoe Street / Kuratawhiti Street	500	26 (Kuratawhiti Street Approach)	340	366
SH2 / Humphries Street / Papawai Road	450	98 (Humphries Street Approach)	340	438

* Based on critical acceptance gap of 5 seconds and follow up headway of 3 seconds

* Taking the Major Stream flow as per Table 1

This analysis has been predominately focused during the morning (AM) peak hour due to traffic flows being predominately concentrated over a shorter period of time and a significant proportion of the total trips generated being outbound commuting trips.

In practice the evening peak hour is spread out over a longer period and whether traffic is entering the FDA from the north or south, there will either be a free flow left turn into Humphries Street or a right turn movement into North Street or Kuratawhiti Street.

The high-level analysis of traffic flow patterns out of Kuratawhiti Street at West Street intersection (similar neighbourhood and / or character as to how the FDA will be) has shown an approximately 65:35 percentage split of entering and exiting trips – i.e. 65% of the observed AM peak two-way flow on Kuratawhiti Street was exiting and 35% was entering the neighbourhood – vice versa for the PM peak hour.

Upon this observation and logic, the trip generation affecting the surrounding network and intersection will be further reduced and dispersed across a range of intersections and turning movements in the wider vicinity – such as North and Hastwell Streets.

3.5 Access and Egress

The level of access to the site is unknown at this stage; however multiple access points would be beneficial, with at least one access point being provided from West Street, Kuratawhiti Street and Wood Street being recommended.

Opportunity exists to transform the road side environment along the majority of Wood Street to provide greater consistency between Hewson Lane and any further access roads into the FDA off Wood Street.

Ideally it would be desirable to limit the amount of side conflict along the key routes, however positive traffic management would be required to ensure traffic speeds where conductive with expected residential amenity, safety and general quality of life. Specific consideration would be required around this aspect.

Connectivity for walking and cycling should be strongly enforced through-out the Structure Plan process.

4. Conclusion and Recommendations

This assessment has shown that the proposed development can be supported by the existing road network from a traffic engineering perspective and is unlikely to compromise the safety and efficiency of surrounding roads or intersections.

At this stage, with taking the intensification of the FDA with having 400 lots (recognising the desire to have a mixture of lot sizes ranging from 500 – 1000 m2 and keeping consistency with the character of Greytown), the current configuration of the supporting road network at the intersecting roads to SH2 would practically absorb the predicted trip movements during the peak hours.

If the proposed trip distribution logic is followed, access points onto the bordering roads will have sufficient sight distances to allow for safe access and egress to the site. Any proposed roads in the FDA should reflect their level and be of similar character as previous developed subdivisions and previous structure plans in the Combined District Plan.

Also giving good access / permeability through-out the FDA for walking and cycling will be beneficial to the connectivity of the FDA to the surrounding infrastructure for these modes.

Existing streetscape on Wood Street should be considered for upgrading to help provide greater consistency of this road.

No other significant affects are anticipated outside of the assessment area as a result of the proposed development.

GHD

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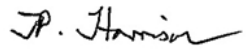
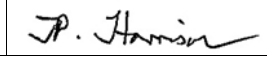
Document Status

Author	Reviewer		Approved for Issue		
	Name	Signature	Name	Signature	Date
Ben Grapes	Tony Harrison		Tony Harrison		14/07/2017

Appendix 5:

Email from GHD Limited

Subject: TIA – Greytown Structure Plan

27 September 2017

From: Ben Grapes [mailto:Ben.Grapes@ghd.com]
Sent: Wednesday, 27 September 2017 8:25 a.m.
To: Honor Clark <honz@xtra.co.nz>; Tony Harrison <Tony.Harrison@ghd.com>
Cc: Murray Buchanan - Group Manager Planning and Environment <Murray.Buchanan@swdc.govt.nz>; Russell Hooper- Senior Planner <Russell.Hooper@swdc.govt.nz>; Mike Hewison <mikeh@eastern.co.nz>
Subject: RE: TIA - Greytown Structure Plan

Hi Honor,

Allowing a possible link from Westwood Ave onto the proposed 'spine' road, through the M & J Searle Family Trust subdivision, would not change our conclusions to the TIA.

Would only anticipate it to service a proportion of the generated trips from the 13 lot subdivision due to the style / arrangement of the road – and we can draw upon the conclusions of their resource consent application, in which it is concluded that "adverse traffic effects are no more than minor" to the surrounding roads of Westwood Ave ad West Street.

Concluding in the FDA TIA, the impact of the generated traffic on the existing road network and existing approaches that connect with SH2, is considered to be minor and be easier absorbed into the surrounding roads.

As the level of access to the site is still unknown / not at a detail design stage (from our understanding), ensuring at least one access road provided from both Wood Street and Kuratawhiti Street into a spine road would be the key to retain egress and permeability through-out the FDA (ensuring entry / exit points are not over saturated with the majority of generated trips).

The specific detail design and layout of new intersections (onto the bordering roads) should be further investigated at due course.

Hope the above points help

Best Regards

Ben Grapes
Transport & Road Safety Engineer
GHD
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134 Queen Street East PO Box 1370 Hastings 4156 New Zealand | http://www.ghd.com/
Water | Energy & Resources | Environment | Property & Buildings | Transportation

From: Honor Clark [mailto:honz@xtra.co.nz]
Sent: Tuesday, 26 September 2017 1:10 p.m.
To: Ben Grapes <Ben.Grapes@ghd.com>; Tony Harrison <Tony.Harrison@ghd.com>
Cc: Murray Buchanan <Murray.Buchanan@swdc.govt.nz>; Russell Hooper <Russell.Hooper@swdc.govt.nz>; Mike Hewison <mikeh@eastern.co.nz>
Subject: TIA - Greytown Structure Plan

Hi Ben/Tony,

We are finally at the stage of presenting the Structure Plan for the Greytown FDA to South Wairarapa District Council as a Proposed Plan Change.

One matter that has arisen is the possible link of Westwood Ave onto the 'spine' road (collector road) running through the middle of the FDA from West Street to Mole Street. I note, pg 2 of your TIA report refers to Westwood Ave.

What we need to know is whether the possible link through would change your conclusions in the TIA for the FDA as a whole?

Are you able to please provide a brief assessment on this, which we could perhaps put as an addendum to your TIA report?

Cheers

Honor Clark

Resource Management Consultant

Appendix 6:

Valuation Assessment of section values

Baker Ag

15 August 2017

15th August 2017

Honor Clark
Consultant Resource Management Planner

South Wairarapa District Council
PO Box 6
MARTINBOROUGH 5741

Dear Madam,

I refer to your email of the 25th July 2017 and our subsequent meeting, in which you sought assistance from BakerAg in respect of providing valuation advice on the potential value of new residential sections within the planned Greytown Future Development Area.

In this regard, your instructions were to provide values for a range of section sizes as follows:

1 Sections between 400 m^2 – 500 m^2
2 Sections between 600 m^2 – 800 m^2
3 Sections between 1,000 m^2 – 1,200 m^2

We have now completed our investigations in relation to comparable market sales within the Greytown area and can now report as follows:

We report as follows.

BACKGROUND

The Combined Wairarapa District Plan, outlined an area on the west side of Greytown bounded by Mole Street, West Street, Kuratawhiti Street and Wood Street, which has been denoted as Greytown Future Development Area. The area extends to some 35.7 hectares in total, of which some 26.8 hectares has potential for the development of new residential sections.

South Wairarapa District Council are currently in the process of developing a structure plan for this area, and part of this process is to look at the future financial contribution framework, including reserve fund contributions that could be received from section sales within the future development area.

It is current thinking that any future development of this area of Greytown for residential housing will include a mix of section sizes to provide a greater scope of opportunities for people looking to relocate to the town and construct a dwelling.

In this regard, it is anticipated that there could be a restricted number of smaller sections located close to the West Street end of the future development area, with section sizes gradually increasing as the development moves westwards towards Mole Street. It is the view of both surveyors and local real estate agents that there is likely to be the greatest demand for larger sections of between 1,000 – 1,200 m^2, which is consistent with historical residential development on the west side of Greytown

MARKET CONDITIONS

Greytown has over the last ten years garnered a reputation as an attractive location within which to live, and this is reflected in both residential dwelling prices and section values which are significantly higher than any other town within the Wairarapa. This market has been driven predominantly by outside purchasers, many from the Hutt Valley and Wellington, who want to take advantage of the more rural aspect that the Wairarapa provides, whilst enjoying the benefits of a good rail link into the city from the nearby station at Woodside.

The market for residential properties and sections within Greytown has been very buoyant over the last eighteen months, in line with the general uplift in demand for real estate experienced elsewhere within New Zealand. During the period following the 2008 global financial crisis up until probably 2014 there was limited demand for residential land within the Greytown area, and section sales were relatively static as were values.

The current market buoyancy has changed all this, and the last eighteen months has seen several significant new residential subdivisions being created, particularly on the western side of Greytown. During this period unconditional section sales have totalled some sixteen in the period 1st August 2015 to 31st July 2016, and some nineteen in the period August 2016 to end of July 2017. In addition to these completed sales, there are a significant number of conditional sales which have not yet settled due to a variety of reasons, including titles not yet being issued, or the planned subdivision is still awaiting resource consent.

Most of this new development in and around Greytown has taken place on the west side of town, with the eastern side seeing only a few smaller subdivisions generally in the two to five lot range.

At the time of writing we have estimated that there will be up to 178 residential sections on the west side of Greytown available for sale in the short terms, with something in the order of 20-25 of these sections currently under conditional contract.

These sections are concentrated within three main subdivisions, Totara Grove, the Westwood Avenue extension and Tararua Junction at the southern end of Greytown. Even at the current level of demand it may take five years or more before all these sections are sold and developed with residential homes.

VALUES

In speaking to local real estate agents, it is clear that there is quite a variability in section values depending on the individual subdivision and whether resource consent and Titles are available.

In this regard, the recently completed subdivision at Westwood Avenue contains a number of very high price sections and a new subdivision adjacent to Westwood Avenue is currently offering twelve lots for sale, the majority of which have been presold again at premium values.

The 16 lot James Kidd Place subdivision off Kuratawhiti Street is also almost completely sold out and while the average sale price is lower than Westwood Avenue, agents report that prices within this subdivision have increased between $40,000 and $50,000 over the last twelve months. Two 1,000 m^2 sections within this development have recently sold for $295,000 and $300,000 respectively.

New sections at the Totara Grove subdivision, of which in the first phase there are twenty sections being offered, has again largely sold out off the plans, with prices ranging between $220,000 and $250,000. This subdivision includes a variety of section sizes ranging from 720 m^2 to 1,890 m^2.

Comments from local real estate agents suggest that while there is thought to be some demand for smaller sections, this is not considered to be significant, and in line with historic sections sizes within Greytown they consider there is likely to be greater demand for more traditional sized sections namely in the 1,000 – 1,200 m^2. This said, the market is always evolving and it is important any future development plan caters for all sectors of the market.

SALES EVIDENCE

1. James Kidd Place, Kuratawhiti Street

   This was a sixteen lot subdivision of which two lots are still remaining to be sold. Two lots have recently sold, Lot 12 at 929 m^2 sold for $295,000 ($317/m^2), and Lot 15 at 1,099 m^2 for $300,000 ($272/m^2).

   As previously mentioned, the agents report that these latest sales are at a level some $50,000 higher than similar sized sections twelve months ago.

2. Hewson Lane, Wood Street

   This was a smaller eight lot subdivision located off Wood Street. A number of the sections have been retained by the developer, but two recent residential sales indicate that 1,000 m^2 sections within this development are currently worth $300,000 ($300/m^2), which is some $25,000 higher than a similar sized section that sold 9 months ago.

3. Westwood Avenue Addition, West Street

   This is a new subdivision located adjacent to the newly completed Westwood Avenue subdivision. Phase one extends to some twelve lots and includes a variety of section sizes ranging from 685 m^2 up to 1,350 m^2. This development is in a prime location, being very close to the Fresh Choice supermarket and town centre.

   A sample of "conditional" section sales within this development are as follows.

   685 m^2 Section - sale price $238,000 ($347/m^2).
   952 m^2 Section - sale price $320,000 ($336/m^2).
   1,038 m^2 Section - sale price $345,000 ($332/m^2).

   Further development of this site is currently in the planning stage. It is expected that including the current phase 1, this development when complete will deliver some sixty six sections.

4. Totara Grove, West Street

   Again, this is a site that will be developed in two phases. The first phase comprises twenty sections of which fourteen have been presold. Resources Consent has not yet been granted.

   A sample of "conditional" section sales are as follows.

   1,255 m^2 Section - sale price $230,000 ($183/m^2).
   950 m^2 Section - $235,000 ($247/m^2).

   Phase one and the proposed phase two this development will provide some forty four sections over the next two to three years. The location of this development is not quite as good as either Westwood Avenue, Hewson Place or James Kidd Place.

SUMMARY

The last two years has seen considerable demand for residential sections within Greytown, which has led to a number of new residential subdivisions being developed, particularly on the west side of the town. To date these subdivisions have generated considerable interest, and while a number do not yet have resource consent in place, a significant number of sections have been presold.

Discussion with agents have indicated that with the supply of new sections coming to the market, in their opinion prices are stabilising as a result of the greater choice available. This said, they do not anticipate that section values will fall, but are more likely to stabilise at current levels for the next two to three years.

Continuing demand will depend on the health and buoyancy of the general real estate market within New Zealand's main cities, which have slowed significantly in recent months. Residential values within regional areas such as the Wairarapa are still rising, but this price growth curve and demand is expected to plateau over the next year.

SECTION VALUES WITHIN THE GREYTOWN FUTURE DEVELOPMENT AREA

It is always difficult to forecast values going forward, therefore we have attempted to provide a guide as to what section sizes within this development area may sell for under current market conditions and pricing.

Our assessment of the section sales assumes that resource consent has been granted, a Certificate of Titles issued, and that service roads and mains service connections are laid to the boundary of each section.

1. Section sizes 400 – 500 m^2.
   $170,000 – $190,000.

2. Sections 700 m^2 – 800 m^2.
   $230,000 – $245,000.

3. Sections 1,000 m^2 – 1,200 m^2.
   $270,000 - $300,000.

The above is a brief summary of our investigations into both the current real estate market for residential sections in Greytown, and our estimate of what a variety of section sizes within any future Greytown Future Development Area may realise.

Should you require any more details or a more in depth report then this can be provided. If you have any queries please do not hesitate to contact the undersigned.

Yours faithfully,
BAKERAG NZ LTD

STUART McCOSHIM
MPINZ, MRICS
Registered Valuer

BakerAg

Appendix 7:

Valuation Assessment of ‘spine’ road

Baker Ag

28 August 2017

28th August 2017

Honor Clark
Consultant Resource Management Planner

South Wairarapa District Council
PO Box 6
MARTINBOROUGH 5741

Dear Madam,

I refer to our telephone conversation of last week, in which you sought assistance from BakerAg in respect of an assessment of the underlying value of the land that may be required for the construction of a main "spine" road through the Greytown Future Development Area.

We report as follows.

BACKGROUND

As part of the preparation of a structure plan for the development of the Greytown Future Development Area, South Wairarapa District Council are looking at providing a major spine road through the development area.

This road will link West Street and Mole Street, and will allow smaller spur roads to be developed, which will provide access to staged areas of residential development.

It is envisaged that the new road reserve will have an estimated width of 26 metres, which will include a 9.5 metre wide carriageway, footpaths, a cycle path, a water race and amenity planting. The only section where the road reserve will be narrower than 26 metres, is the first 96 metres leading off West Street, where the width will be reduced to around 15.2 metres.

VALUATION CONSIDERATIONS

1. The land over which the proposed new road will be constructed is currently zoned residential.

2. The new road will connect West Street to Mole Street and will require an area of land estimated at 2.10 hectares.

3. In considering the underlying value of the land, we have considered two recent sales of residential development land on the west side of Greytown.

4. The first of these was a 6.3848 hectare parcel of former orchard land located at the end of Orchard Road, which sold in August 2016 for $2,600,000 plus GST (if any). The land was zoned residential, "Greytown Villas Character Area". This sale indicates an underlying land value of $407,217 per hectare, or $40.72 per m^2.

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5. The second sale is from February 2017 of a property at 104A West Street, Greytown. This land parcel extended to 5.4160 hectares and sold for $2,500,000. This land parcel was zoned residential and was located within the Greytown Future Development Area. This sale indicates an underlying land value of $461,595 per hectare, or $46.16 per m^2.

6. Based on these sales we have consider the land has a value of $450,000/hectare or $45/$m^2$.

7. We have based this land value assessment on the underlying value of the land required for the road only and have assumed that the required land would be purchased by South Wairarapa District Council using the compensatory principles of the Public Works Act 1981.

8. We have not as part of this assessment considered the potential cost /quantum of any Injurious Affection to land owners affected by the proposed new road, similarly we have not considered any likely betterment to affected land owner's properties as a result of the proposed new road.

VALUE ASSESSMENT

We have assessed the underlying value of the land required for the proposed new road at **$945,000 (Nine Hundred and Forty Five Thousand Dollars)**, plus GST (if any).

The above assessment assumes that the proposed new road will require a land area of 2.10 hectares and that the underlying land value is $45.00/ m^2.

Should you require any more details or a more in depth report then this can be provided. If you have any queries please do not hesitate to contact the undersigned.

Yours faithfully,
BAKERAG NZ LTD

STUART McCOSHIM
MPINZ, MRICS
Registered Valuer