



**TECHNICAL INVESTIGATION  
CONTAMINATION  
ASSESSMENT DRURY FUTURE  
URBAN ZONE**

Engineers and Geologists

## TECHNICAL INVESTIGATION CONTAMINATION ASSESSMENT DRURY FUTURE URBAN ZONE

**Report prepared for:** Auckland Council

**Report prepared by:** Joanne McClean, Engineering Geologist



.....

**Report reviewed and approved for issue by:** Rob Burden, Director



.....

**Report reference:** 170275-A

**Date:** 16 March 2018

**Copies to:** Auckland Council 1 electronic copy

Riley Consultants Ltd 1 copy

Issue:	Details:	Date:
1.0	Technical Investigation Contamination Assessment	16 March 2018

## Contents

1.0	Introduction .....	1
1.1	Purpose .....	1
1.2	Scope .....	1
2.0	Regulatory Assessment.....	1
2.1	Regulatory Regime at National level .....	1
2.2	Regulatory Regime at Regional Council Level .....	2
3.0	A Review of Historical Investigation Reports .....	3
4.0	Identification of the Actual or Potential Areas of Contamination using Historical Aerial Photographs .....	3
5.0	Contaminants of Concern and Development Constraints for Change in Land Use from Rural to Residential.....	3
5.1	Buildings (Pre-1980s) .....	3
5.2	Commercial/Industrial Land .....	4
5.3	Landfills .....	4
5.4	Horticultural Land.....	4
5.5	Production Land.....	4
5.6	Unknown Potential Contamination Sources .....	5
6.0	Contamination Recommendations for any Future Structure Planning.....	5
7.0	Limitation.....	5

## Appendices

Appendix A: Table 1: Summary of Land Uses and Contamination Risks

Appendix B: Potential Landfill Photographs

Appendix C: RILEY Dwgs: 170275-11 and -12

# TECHNICAL INVESTIGATION CONTAMINATION ASSESSMENT DRURY FUTURE URBAN ZONE

## 1.0 Introduction

Riley Consultants Ltd (RILEY) has been engaged by Auckland Council (Council) to assist in the development of the Drury Future Urban Zone (Drury FUZ) Technical Investigation - Contamination Assessment in accordance with the brief from Council, dated April 2017. The contamination assessment is to provide an understanding of the contamination constraints affecting the area and its future development, and to support public consultation. The area is illustrated on RILEY Dwg: 170275-11 and -12 (Appendix C).

### 1.1 Purpose

The purpose of this report is to assess and collate existing information about potentially contaminated land in the Drury area in support of the structure plan requirements under Appendix 1.5 (4) of the Auckland Unitary Plan-Operative in part (AUP-Op).

### 1.2 Scope

The scope of works undertaken during this assessment includes:

- Summarising the current regulatory regime for contaminated land at a national and regional level.
- Reviewing historical investigation reports.
- Identifying the actual and potential areas of contamination and those identified during previous investigations, using historical aerial photographs to confirm any noticeable changes to land use since the completion of historical investigation.
- Providing recommendations for further environmental investigations required to support future resource consent applications for site subdivision and redevelopment works.
- Contamination recommendations for any future structure planning.

## 2.0 Regulatory Assessment

This technical assessment is based on the current regulatory regime for contaminated land at a national and regulatory level as follows:

### 2.1 Regulatory Regime at National level

Contaminated land at the national level is regulated according to the National Environmental Standard: The Resource Management (National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES).

Each territorial and unitary authority implements this NES in accordance with their Section 31 functions under the Resource Management Act 1991 (RMA) relating to contaminated land, specifically Section 31(b)(iia) “the prevention or mitigation of any adverse effects of the development, subdivision, or use of contaminated land”.

The policy objective of the NES is to ensure land affected by contaminants in soil is appropriately identified and assessed when soil disturbance and/or land development activities take place and, if necessary, remediated or the contaminants contained to make the land safe for human use. The NES enables the safe use of affected land by:

- Establishing regulations for five activities that ensure district planning controls, relevant to assessing and managing public health risks from contaminants in soil, are appropriate and nationally consistent.
- Establishing soil contaminant standards protective of human health and requiring their use when decisions are made under the NES.
- Ensuring best practice and consistent reporting on land affected or potentially affected by contaminants is applied that enables efficient information gathering and consistent decision-making.

A preliminary site investigation (PSI) is required if a person wants to subdivide or change land use as a permitted activity, and the PSI must be certified by a suitably qualified and experienced practitioner.

If the activity cannot comply with the permitted activity requirements, then a consent application must be submitted. For the application to be considered as either a controlled or restricted discretionary activity, the NES requires that a detailed site investigation (DSI) and a site management plan (SMP) be submitted with the application.

## **2.2 Regulatory Regime at Regional Council Level**

Contaminated land at the regional level is regulated according to the AUP-Op - Updated 26 October 2017.

Section E30 Contaminated land of the AUP-Op provides the objectives, policies, and rules related to the discharge of contaminants from contaminated land. The rules are designed to manage and address the effects of the discharge of contaminants from contaminated land or land containing elevated levels of contaminants into air, water, or land to protect the environment and human health and to enable land to be used for suitable activities now and in the future.

Compliance is determined by a risk assessment process set out in Section E30 and tables E30.6.1.4. 1 and 2, to assess a property and its historical land use to determine whether a discharge will result in significant adverse effects, or whether it can be remediated or managed. All assessments and related reports are to be carried out in accordance with the Ministry for the Environment’s Contaminated Land Management Guidelines. If the activity cannot comply with the permitted activity requirements, then a consent application must be submitted for a controlled activity.

### 3.0 A Review of Historical Investigation Reports

There were no historical contamination investigation reports available for the Drury FUZ. Some data was obtained from the Council GIS including historical contaminated sites and pollution incidents, however the information was limited and although in most instances a site address was provided, the contamination was not substantiated. Sites identified from the Council information were confirmed using historical aerial photographs.

### 4.0 Identification of the Actual or Potential Areas of Contamination using Historical Aerial Photographs

Publicly available historical aerial photographs have been used to identify land use and areas with, or that have the potential for, contamination that may trigger the need for consenting under the NES or the AUP-Op.

Photographs from 1960s, 1981, 1988, 2006, and 2015 have been utilised. Photograph sources include Google Earth, Council, and the LINZ database.

Land use categories identified include:

- Buildings pre-1980s.
- Commercial/industrial property (this category, where it occurs, takes priority over but does not preclude horticultural, and other land use categories).
- Landfills (public, private, clean, managed, and municipal categories).
- Horticultural land (market gardening, glasshouses, cropping, orchards).
- Production land (agriculture, pastoral).

The land uses (mentioned above) identified for the Drury FUZ are shown on RILEY Dwgs: 170275-11 and -12, appended. Each property polygon has been designated a land use category using a GIS system. Photographs of potential landfills are presented in Appendix B.

### 5.0 Contaminants of Concern and Development Constraints for Change in Land Use from Rural to Residential

Contaminants of concern and development constraints for selected land use categories are summarised in Table 1, appended.

#### 5.1 *Buildings (Pre-1980s)*

**Contaminants of Concern:** Buildings built prior to the 1980s include lead and asbestos contaminants of concern. Lead and asbestos were used extensively in the construction industry. Both materials are known to potentially contaminate shallow soils near the material source.

**Development Constraints:** Land is likely to be suitable for residential development subject to a PSI and/or a DSI. If contaminant concentrations exceed NES soil contaminant standards and/or AUP-Op permitted activity criteria, remediation will be required. Excess soil with contaminant concentrations above naturally occurring background levels may require disposal off-site at an appropriately consented facility.

## 5.2 Commercial/Industrial Land

**Contaminants of Concern:** There is potential for commercial/industrial land use properties to be contaminated from the recent or historically activities carried out on the property. Contaminants of concern commonly associated with commercial/industrial activities include heavy metals, polycyclic aromatic hydrocarbons, and volatile organic compounds.

**Development Constraints:** Land may or may not be suitable for residential development depending on the contents of the landfill, subject to a PSI and/or DSI. If contaminant concentrations exceed NES soil contaminant standards and/or AUP-Op permitted activity criteria, remediation will be required. Excess soil with contaminant concentrations above naturally occurring background levels may require disposal off-site at an appropriately consented facility.

## 5.3 Landfills

**Contaminants of Concern:** Contaminants of concern on landfills vary dependant on the type of landfill activity and include landfill gas, asbestos, semi-volatile organic compounds, heavy metals, and nitrates.

**Development Constraints:** Land is unlikely to be suitable for residential development subject to a PSI and/or DSI. If contaminant concentrations exceed NES soil contaminant standards and/or AUP-Op permitted activity criteria, remediation will be required (possibly all fill materials will need removing). Excess soil with contaminant concentrations above naturally occurring background levels may require disposal off-site at an appropriately consented facility. If remediation is required it may limit feasibility for development.

## 5.4 Horticultural Land

**Contaminants of Concern:** Dependant on the type of horticultural activity, the potential shallow soil may have been contaminated from heavy metals and organochlorine pesticides.

**Development Constraints:** Land is likely to be suitable for residential development subject to a PSI and/or a DSI. If contaminant concentrations exceed NES soil contaminant standards and/or AUP-Op permitted activity criteria remediation will be required. Excess soil with contaminant concentrations above naturally occurring background levels may require disposal off-site at an appropriately consented facility.

## 5.5 Production Land

**Contaminants of Concern:** Contaminants of concern include total petroleum hydrocarbons, heavy metals, and polycyclic aromatic hydrocarbons.

**Development Constraints:** Land is likely to be suitable for residential development, subject to a PSI and/or a DSI of sheds and stockyards. If contaminant concentrations exceed NES soil contaminant standards and/or AUP-Op permitted activity criteria localised remediation will be required. Excess soil with contaminant concentrations above naturally occurring background levels may require disposal off-site at an appropriately consented facility.

## **5.6 Unknown Potential Contamination Sources**

Unknown potential contamination sources include the following:

- Uncertified filling including asbestos dumps, building materials, municipal fill material.
- Pollution incidents such as fuel spills and fires.
- Farm dumps materials include paint, polycyclic aromatic hydrocarbons, treated timber, asbestos sheeting, and machinery.

## **6.0 Contamination Recommendations for any Future Structure Planning**

The following further investigations for any future structure planning are recommended:

1. Site visits to confirm land use activities (e.g. type of landfill, cleanfill vs municipal).
2. Representative PSIs and detailed site investigations to confirm the extent and severity of contamination for selected land uses.

## **7.0 Limitation**

This report has been prepared solely for the benefit of Auckland Council as our client with respect to the brief. The reliance by other parties on the information or opinions contained in the report shall, without our prior review and agreement in writing, be at such parties' sole risk.

Riley Consultants Ltd has performed the services for this project in accordance with the standard agreement for consulting services and current professional standards for environmental site assessment. No guarantees are either expressed or implied.

## ***APPENDIX A***

***Table 1: Summary of  
Land Uses and  
Contamination Risks***

**Table 1: Summary of Land Uses and Contamination Risks**

Land Use	Activities Identified	Contaminants of Concern	Development Constraints
Buildings (Pre-1980s)	Pre-1980 buildings including sheds, houses, and other buildings.	Asbestos and lead.	- Soil may exceed NES or AUP-Op criteria and require remediation (removal). - Excess soil may not be disposable as cleanfill.
Commercial/Industrial Land	Automotive workshops, vehicle maintenance, airfields, commercial activity.	Polycyclic aromatic hydrocarbons, volatile organic compounds, and heavy metal.	- Soil may exceed NES or AUP-Op criteria and require remediation (removal). - Excess soil may not be disposable as cleanfill.
Horticultural Land	Market gardening, nurseries, glasshouses, orchards.	Heavy metals and organochlorine pesticides.	- Soil may exceed NES soil contaminant standards or Council permitted activity criteria (AUP-Op) and require remediation (removal). - Excess soil may not be disposable as cleanfill.
Landfills	Municipal, private, controlled, rubbish, soil stockpiles, and horse race courses/tracks.	Municipal, private, controlled, rubbish, soil stockpiles, and horse race courses/tracks.	- Fill material would need to be removed, or development designed to mitigate the contaminants beneath the development. - Fill may exceed NES or AUP-Op criteria and require remediation (removal). - Remediation cost may limit the feasibility.
Production Land	Agriculture, grazing, piggeries, poultry, equestrian, and lifestyle block activities.	Total petroleum hydrocarbons, polycyclic aromatic hydrocarbons, heavy metals.	- Some soil may exceed NES or AUP-Op criteria and require remediation (removal). - Some excess soil may not be disposable as cleanfill.

Notes:

NES - Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES)) Regulations 2011.

AUP-Op - Auckland Unitary Plan - Operative in Part (November 2016)

***APPENDIX B***

***Potential Landfill  
Photographs***

## Potential Landfill Photographs

### 1. 197 and 201 Sutton Road Drury

Lot 3 DP 126642 and Lot 1 DP 99623

Horse Racetrack in 1988, potential for imported fill material to be contaminated.



1988 Aerial Photograph from LINZ Collection (SN8772 V/9)

### 2. 369,399 Cossey Road, and 444 and 476 Drury Road

Lot 3 DP 106172, Lot 4 DP107225, Lot 1 DP106172, and Lot 2 DP107225.

Horse Racetrack, 1981, potential for imported fill material to be contaminated, evident on aerial photograph from LINZ Collection.



1981 Aerial Photographs from LINZ Collection (SN 5783 U/15).

## 7. 813 Great South Road Drury

Lot 1 DP88948

Horse Racetrack - 1988 onwards, potential for imported fill material to be contaminated.



Aerial Photograph from Council GIS 1996.

### Limitation

Recommendations and opinions in this report are based on a visual appraisal using aerial photographs only, and it must be appreciated that actual conditions could vary considerably from the assumed model.

The comments above relate only to potential for landfilling based on aerial photograph observations, excluding other land uses that may have occurred at the respective properties.

Activities at the mentioned sites should be confirmed in a preliminary site investigation (PSI) and if required a detailed site investigation (DSI).

## ***APPENDIX C***

***RILEY Dwgs:  
170275-11 and -12***

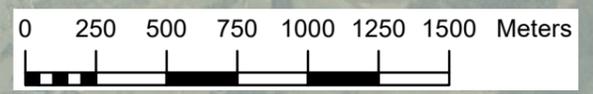


**LEGEND**

-  BUILDINGS (PRE 1980's)

**LAND USE**

-  COMMERCIAL/INDUSTRIAL LAND
-  LANDFILLS
-  HORTICULTURAL LAND
-  PRODUCTION LAND



DESIGN	CHECKED	APPROVED FOR ISSUE:
JGM	JGM	<b>R BURDEN</b>
DRAWN	CHECKED	
GAF	GAF	
DATE DRAWN		DATE:
3/18		31/10/17
BY	DATE	
JM	24/08/17	
2	MINOR AMENDMENTS	
REV	DESCRIPTION	

**RILEY CONSULTANTS**

P.O. BOX 100 253  
NORTH SHORE  
AUCKLAND 0629  
TEL. 09-4897872  
FAX. 09-4897873

TITLE

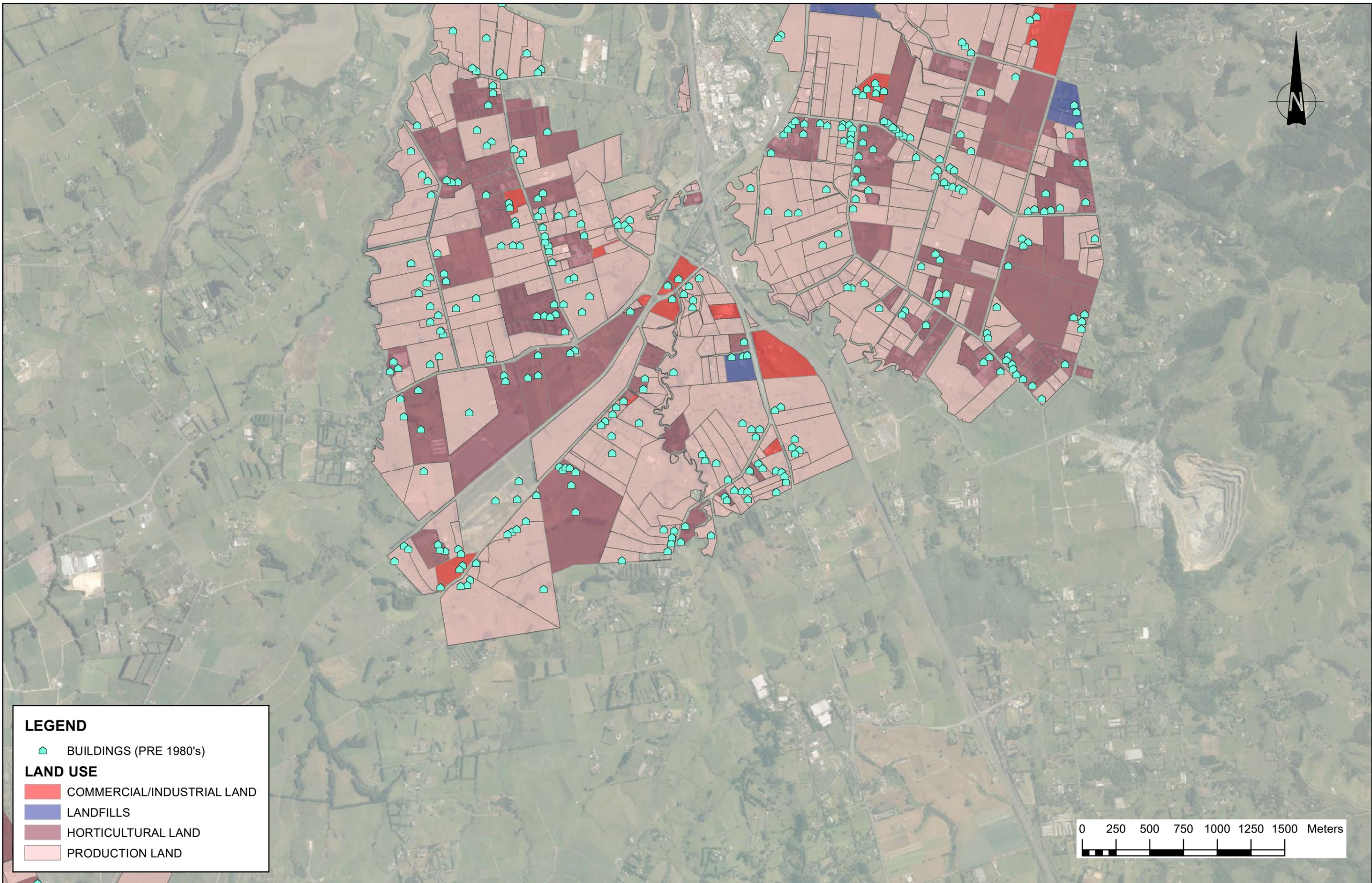
**AUCKLAND COUNCIL  
SOUTHERN STRUCTURE PLAN  
LAND USE FOR DRURY NORTH**

GIS FILE  
170275-FIG1.MXD

SCALE  
1:25,000

DRAWING No.  
170275-11

REV.  
2

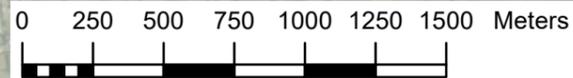


**LEGEND**

- BUILDINGS (PRE 1980's)

**LAND USE**

- COMMERCIAL/INDUSTRIAL LAND
- LANDFILLS
- HORTICULTURAL LAND
- PRODUCTION LAND



DESIGN	CHECKED	APPROVED FOR ISSUE:
JGM	JGM	<b>R BURDEN</b>
DRAWN	CHECKED	
GAF	GAF	
DATE DRAWN		DATE:
3/18		31/10/17
BY	DATE	
JM	24/08/17	
2	MINOR AMENDMENTS	
REV	DESCRIPTION	

**RILEY**  
CONSULTANTS

P.O. BOX 100 253  
NORTH SHORE  
AUCKLAND 0629  
TEL. 09-4897872  
FAX. 09-4897873

TITLE

**AUCKLAND COUNCIL  
SOUTHERN STRUCTURE PLAN**

**LAND USE FOR DRURY SOUTH**

GIS FILE		REV.
170275-FIG1.MXD		
SCALE		
1:25,000		
DRAWING No.		
170275-12		2