

**IN THE MATTER** of the Resource Management Act 1991

**AND**

**IN THE MATTER** of Proposed Plan Change 11 to the Waipa District Plan –  
Bardowie Industrial Precinct

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**STATEMENT OF EVIDENCE OF LIAM MCCAFFREY  
FOR BARDOWIE INVESTMENTS LTD**

**Dated: 19 NOVEMBER 2018**

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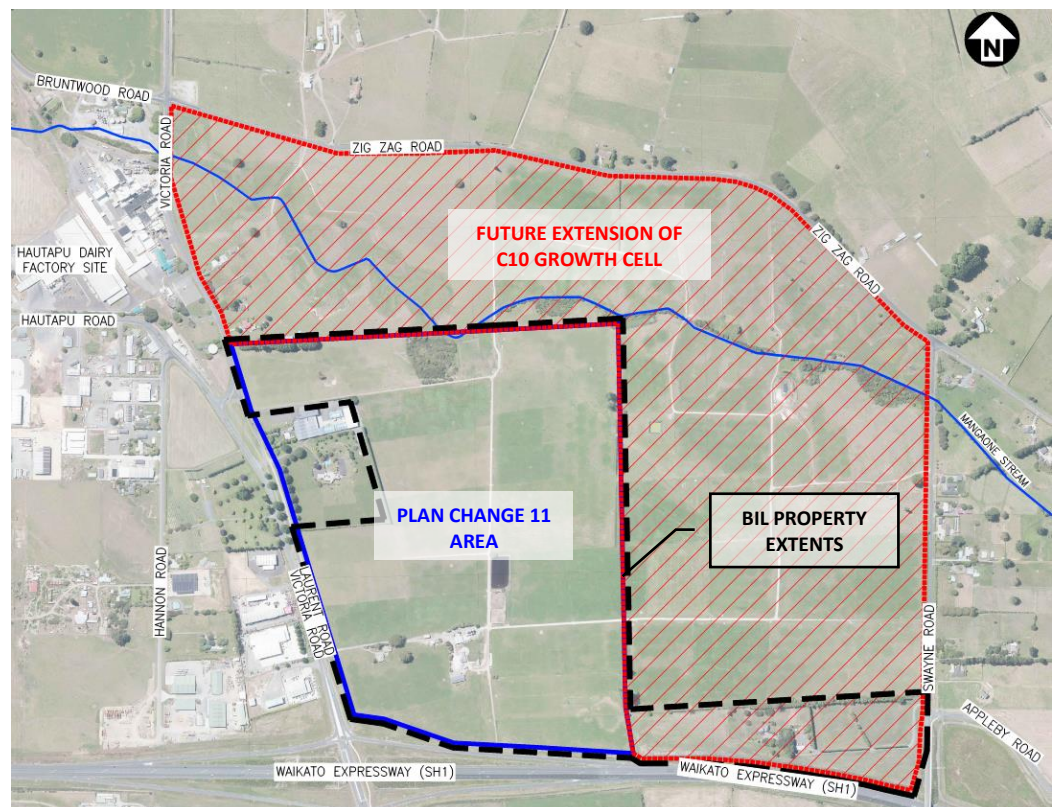
## INTRODUCTION

1. My name is Liam Patrick McCaffrey and I am a Civil Engineer specialising in land development, stormwater and roading design. My formal qualifications are:
  - a) Bachelor of Engineering (BE) with honours specialising in civil engineering from Auckland University (2005); and
  - b) Masters of Engineering Studies (MEngSt) with honours specialising in transportation from Auckland University (2009).
  
2. I have 14 years' experience in the design and construction of civil engineering projects in both New Zealand and overseas. I spent four years working for a civil contractor, Fulton Hogan, working on the construction of various roading and land development projects. More recently I spent nine years with the professional services firm Beca Ltd where I was responsible for the design and management of several large land development projects in New Zealand and Singapore. Relevant land development projects I have been involved with locally are:
  - a) St Kilda subdivision, Cambridge; an 80Ha \ 285 lot residential subdivision in the same region as the Plan Change 11 development area with similar topography.
  - b) Greenhill Park subdivision, Hamilton; a 120Ha \ 1200 lot residential subdivision with similar topography and groundwater conditions as the Plan Change 11 development area.
  - c) C1 & C2/C3 Residential Growth Cells, Cambridge; infrastructure master planning for the next phase of growth within Cambridge with similar infrastructure servicing challenges as the Plan Change 11 development area.

3. In October 2017 I set-up my own civil engineering consultancy, McCaffrey Engineering Consultants (MEC). In July 2018 MEC was commissioned by Bardowie Investments Ltd (BIL) lead the infrastructure designs for the Bardowie Industrial Precinct including; engineering reports for Plan Change 11, regional consent applications and delivery of detailed designs for first stage of the BIL development.

### PURPOSE AND SCOPE OF EVIDENCE

4. I have been engaged by BIL to present civil engineering evidence in relation to Plan Change 11 (PC11).
5. BIL has entered into sale and purchase agreements to purchase approximately 59.3 hectares of land in Hautapu, Cambridge (adjacent to the Waikato Expressway). Approximately 51.5 hectares of the BIL land holdings are located within the area covered by PC11 (as shown on the following plan).



## **CODE OF CONDUCT**

6. I confirm that I have read the 'Code of Conduct' for expert witnesses contained in the Environment Court Practice Note 2011. My evidence has been prepared in compliance with that Code in the same way as I would do so when giving evidence in the Environment Court. In particular, unless I state otherwise, this evidence is within my sphere of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

## **INFRASTRUCTURE MASTER PLANNING**

7. MEC has led the development of infrastructure strategies to service the PC11 area with technical input provided by:
  - Harrison Grierson – three-waters design (stormwater, wastewater and water supply)
  - The BCD Group – geotechnical site assessment
  - Gray Matter – transportation assessment
8. The infrastructure strategies considered the requirements to service land owned by BIL, other land holdings within the PC11 area along with requirements to service future development to the east and north of the plan change area.

## **THREE-WATERS SERVICING**

### Stormwater

9. Existing site features and the sensitivity of the downstream receiving environment (the Mangaone Stream) provided key constraints that guided the development of the stormwater strategy to service the plan change

area. The stormwater solution put forward to service the PC11 area is as follows<sup>1</sup>:

- Utilising soakage devices (both public and private) to reduce the amount of stormwater runoff leaving the site during higher frequency storm events.
  - Providing pre-treatment to achieve water quality requirements prior to discharge.
  - Providing attenuation within the development (both public and private) to ensure peak discharges leaving the site during lower frequency storm events do not exceed predevelopment levels.
10. WDC, and their technical reviewer (WSP-Opus), have provided feedback on the proposed stormwater strategy. WDC has confirmed that the proposed solution “in general meets council requirements” (WDC Memo, R Bax, dated 1<sup>st</sup> November 2018). The BIL project team also met with Waikato Regional Council representatives on Thursday 18<sup>th</sup> October 2018 to discuss the proposed PC11 stormwater strategy - no significant issues or objections were raised at this meeting.
11. The management and discharge of stormwater (in relation to the whole of the Bardowie Industrial Precinct) will be the subject of a resource consent application that will be lodged with Waikato Regional Council in early to mid-December 2018.

#### Wastewater

12. The wastewater strategy put forward to service the PC11 area is as follows:

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<sup>1</sup> Refer to 'Proposed Plan Change 11 Water Assessment Report' (Harrison Grierson, July 2018) for further details

- Collect wastewater within the development area using several separate gravity pipe networks to convey flows into individual pump stations across the whole plan change area<sup>2</sup>.
  - Individual pump stations will then pump to a centralized 'collector' pump station which will convey all wastewater generated by the development, via pressure main (or rising main), which outlets into the existing WDC Taylor Street pump station.
13. WDC, and their technical reviewer (WSP-Opus), have provided feedback on the proposed wastewater strategy. WDC have confirmed the wastewater solution put forward by BIL is "feasible" (WDC Memo, R Bax, dated 1<sup>st</sup> November 2018). WDC have also confirmed that the downstream public wastewater network has the capacity to accommodate the plan change area<sup>3</sup>.

#### Water supply

14. The water supply strategy put forward to service the PC11 area is as follows:
- Upgrade infrastructure (i.e. pumps) at the existing WDC Hautapu reservoir, located at the intersection of Victoria Road and Hautapu Road, to accommodate the supply requirements of the plan change area.
  - Construct a new water supply distribution network within the proposed development to service the plan change area.
15. WDC, and their technical reviewer (WSP-Opus), have provided feedback on the proposed water supply strategy. WDC have confirmed the PC11 area

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<sup>2</sup> Sizing of infrastructure will also accommodate future development of the C10 growth cell to the east and north.

<sup>3</sup> WDC has advised that some development capacity within the existing public wastewater network will be reallocated to the plan change area through a delay in the development of a future residential growth cell, C7. WDC has confirmed that based on this reallocation "the existing and proposed wastewater network can cope with [PC11] flows" (WDC Memo, R Bax, dated 1<sup>st</sup> November 2018).

“can be serviced within the existing network alongside the works<sup>4</sup> council currently has in the Long Term Plan (LTP) for design in 2018/19 and construction in 2019/20” (WDC Memo, R Bax, dated 1<sup>st</sup> November 2018).

## CONCLUSION

16. I hereby confirm that, based on the technical assessment work completed by BIL and assurance provided by WDC regarding capacity provisions within the existing public networks, the PC11 structure plan area can be adequately serviced for stormwater, wastewater and water supply.

Dated this 19<sup>th</sup> day of November 2018



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Liam McCaffrey

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<sup>4</sup> WDC have confirmed that a planned upgrade of the current supply to the WDC Hautapu reservoir, necessary to accommodate PC11 connection, has been programmed for the 2019/2020 construction season.