

BEFORE INDEPENDENT HEARINGS COMMISSIONERS AT SELWYN

IN THE MATTER OF

Clause 21 of the First Schedule of
the Resource Management Act 1991
(Plan Change 75)

AND

IN THE MATTER OF

YOURSECTION LIMITED
(Applicant)

**STATEMENT OF EVIDENCE OF ANDREW JOHN BANNOCK ON
BEHALF OF YOURSECTION LIMITED**

INFRASTRUCTURE

Dated: 18 October 2021

INTRODUCTION:

- 1 My name is Andrew John Bannock, but I am known as John Bannock.
- 2 My qualifications are Bachelor of Civil Engineering (Hons), New Zealand Certificate of Engineering (Civil) and a Post Graduate Diploma of Business Studies (Dispute Resolution).
- 3 I am a Chartered Engineer of New Zealand and a member of Engineering New Zealand
- 4 I am currently employed by Site Solutions (2018) Limited, a company providing civil engineering design, contract and project management services. This is for a range of clients, projects and developments both in Canterbury and around New Zealand.
- 5 I have over 30 years' professional engineering experience. The types of projects I have worked on include numerous multi-disciplinary projects. I specialise in land development and civil projects involving earthworks and the design of land development projects and the infrastructure associated with these.
- 6 I have worked as Project Engineer, Design Engineer, Engineer to Contract, Engineers' Representative, Contractor's Engineer, Site Engineer and Project Manager.
- 7 I have been involved in a large number of residential developments within the Canterbury region, from the initial concept phase through to detailed design and construction in the roles mentioned. This has included preliminary and detailed assessment of a range of servicing options for proposed development layouts and regulatory requirements.
- 8 I have been involved in the Plan Change 75 (PC75) development since its inception and produced the Infrastructure Report associated with this application. I have reviewed the Geotechnical Report and used its findings in my investigations.
- 9 In relation to the nearby area, I have been the Project Engineer and Engineer to Contract for the developments known as Falcons Landing. A large residential development.

CODE OF CONDUCT

- 10 I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2011. I have complied with it in preparing this evidence and I agree to comply with it in presenting evidence at this hearing. The evidence that I give is within my area of expertise except where I state that my evidence is given in reliance on another person's evidence. I have considered all material facts that are known to me that might alter or detract from the opinions that I express in this evidence.

SCOPE OF EVIDENCE

- 11 My evidence addresses the provision of services to the proposed PC75 area. These services include stormwater, wastewater, water supply and other services. The investigation into these services deals with the requirements within the Plan Change Area and also the effect of the greater networks of Rolleston and the wastewater connection back to Rolleston.
- 12 My evidence also addresses the effects and requirements around earthworks.
- 13 I have read the s.42a Officers Report completed by Mr Craig Friedel and Mr Murray England on behalf of Council.
- 14 I have read the relevant submissions and address these at paragraph 71 of my evidence.

SUMMARY

- 15 The underlying ground conditions of the application area are suitable for residential development.
- 16 There is sufficient capacity within the existing and planned Council infrastructure to service the application area with potable water.
- 17 There is sufficient capacity within the existing and planned Council infrastructure to service the application area's effluent requirements.
- 18 The disposal of stormwater to ground is a well established method within the wider area and the ground conditions are suitable.

- 19 All works will be designed and constructed to the requirements of the Council's development standards.
- 20 There are no comments within the Council officer's report that would indicate any impediments to development within the application area.
- 21 There are no submissions relating to the infrastructure of the application area.
- 22 On the basis of the above, I conclude that there are no servicing constraints for the plan change and I support the application.

SITE SETTING AND CONTEXT

- 23 The 'report area' is within the areas identified as being within the Metropolitan Urban Limit for Rolleston within the Rolleston Structure Plan. The report area comprises of two titles which are identified as Lot 1, DP 50631 and Lot 1, DP 357634.
- 24 The report site is adjacent or within the near vicinity of a number of recently completed or under construction residential developments.
- 25 The general fall of the land is from west to east, meaning that the site lies downstream land to the west and south. Historically the site has been used for rural purposes (farming/grazing/horses).
- 26 The site is located at 151 & 153 Lincoln Rolleston Road and is south of the Falcons Landing residential development and to the east of the Farrington and Acland residential developments. The site is a logical extension of the Falcons Landing residential development to the north and will allow the completion of the west – east road connections that have been commenced within the Farrington and Acland developments.
- 27 The report site is currently held in two titles, the larger (Lot 1 DP 50631) has an area of 20.675 Ha and the smaller (Lot 1 DP 357634) having an area of 4 Ha. Aside from the two residential houses the land is used for grazing, pasture crops and associated rural sheds and use. There are a number of hedge rows and shelter belt trees along the paddock fencelines.

- 28 The land coverage is generally pasture of good quality for grazing. There are portions of a water-race that lie on western and southern boundaries of the overall report area. The water race supplies agricultural water to a number of properties within the area north of Selwyn Road, however, only a few properties actually make use of the water.



Figure 1: Contextual Location of Site

- 29 A geotechnical investigation of the site has been carried out by Miyamoto (dated 25 November 2020) and covered the report area site.
- 30 A summary subsurface profile is
- | | |
|----------------|-------------------------------|
| 0 – 400mm | Topsoil |
| 400mm – 1100mm | Sandy SILT |
| 1100mm - depth | Gravels (sandy fine – coarse) |
- 31 The general underlying ground conditions within the report area land is considered to be similar to that experienced within the Falcons Landing development to the north. Borelog records of wells to the north, south, west and east of the site indicates that the wider area has a similar profile.

- 32 Experience within the development of the Falcons Landing development suggests that there are isolated pockets of weak silts. However these are easily mitigated within the normal construction of roads.
- 33 The borelogs indicated that the ground water level is approximately 10m – 13m below the ground level.
- 34 The geotechnical report by Miyamoto has been peer reviewed by Geotech Consulting Ltd and commented on in a report dated 15 January 2021. This peer review confirmed the general ground conditions and confirmed that the underlying ground conditions were such that they met the criteria of Good Ground in NZS 3604.
- 35 It is also considered that the area will have minimal to no liquefaction and will be equivalent to Technical Land Classification TC1

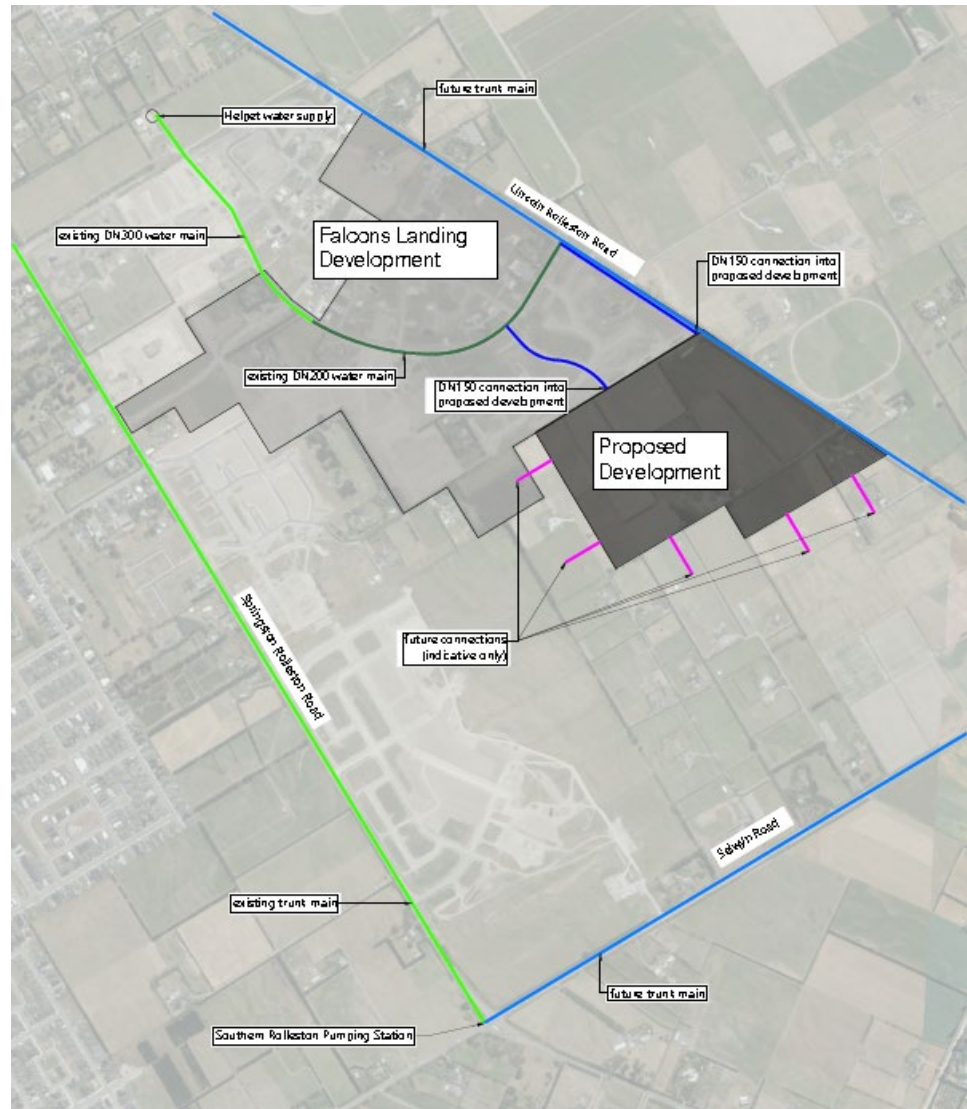
EARTHWORKS

- 36 Whilst the site is generally of a flat nature, the site will be required to be earth worked to ensure that the contours of future sections fall to approved stormwater collection areas (roads, rights of way, reserves etc). This will mean that the site will be stripped of topsoil, ground contours amended and topsoil replaced.
- 37 The fill material is proposed to be sourced from the site – mainly from the road areas and associated service trenching. The aim is to create a 'balanced' development, in terms of earthwork volumes.
- 38 The geotechnical reports indicate that the excavated materials will be suitable for this purpose.
- 39 All earthworks within the residential lots will be to the requirements of NZS4431:1989.

WATER SUPPLY

- 40 A description of the water supply and treatment is provided within the Council officers report and this indicates that there is existing and planned capacity to cater for the Rolleston's growth, including the PC75 area.

- 41 I stated in my servicing report, attached to the Section 32 report, that connection into the existing Council network would be possible via a number of potential neighbouring watermains. The Council officer, in the infrastructure report, has advised that they consider there is sufficient capacity, both in terms of volume and treatment, to cater for the proposed PC75 development. This is consistent with what I understand to be Council's long-term plan to increase the infrastructure to service areas within the Rolleston Structure Plan area, of which this application area is included.
- 42 I consider that the extension of the networks may include collaboration with developers to progress aspects of the network in advance of that currently programmed by the Council. I have been advised by the Council, that this is an acceptable option.
- 43 The extension of the water network will also provide the Council opportunities to provide additional infrastructural security to the adjacent areas, including additional connections to land to the east and south when this is developed. The development of the surrounding area will provide ample opportunities to provide ring mains and alternative connections (refer schematic layout below)
- 44 All water infrastructural works will be designed and constructed in accordance with the Selwyn District Council's development standards, including requirement to meet NZ fire standards.
- 45 It is anticipated that the finer details of connections and infrastructural routing will be determined at the detailed engineering phase
- 46 In summary, I consider there are no potable water supply related restrictions that would impede the development of the report area for residential development.



- 47 In addition to the potable water, there is an existing agricultural water scheme within the wider area (water races). The non-potable water is conveyed to a number of properties via a network of open and piped waterways. The number of active users of this water is becoming less as the wider area is being developed for residential purposes.
- 48 A portion of the water race network lies along the southern boundary of the proposed development with a ponded area approximately 180m from the western boundary. Various options for dealing with the water race are available, including naturalising, piping and potential closure.
- 49 In respect of adjoining Falcon's Landing for example, the water race was piped.

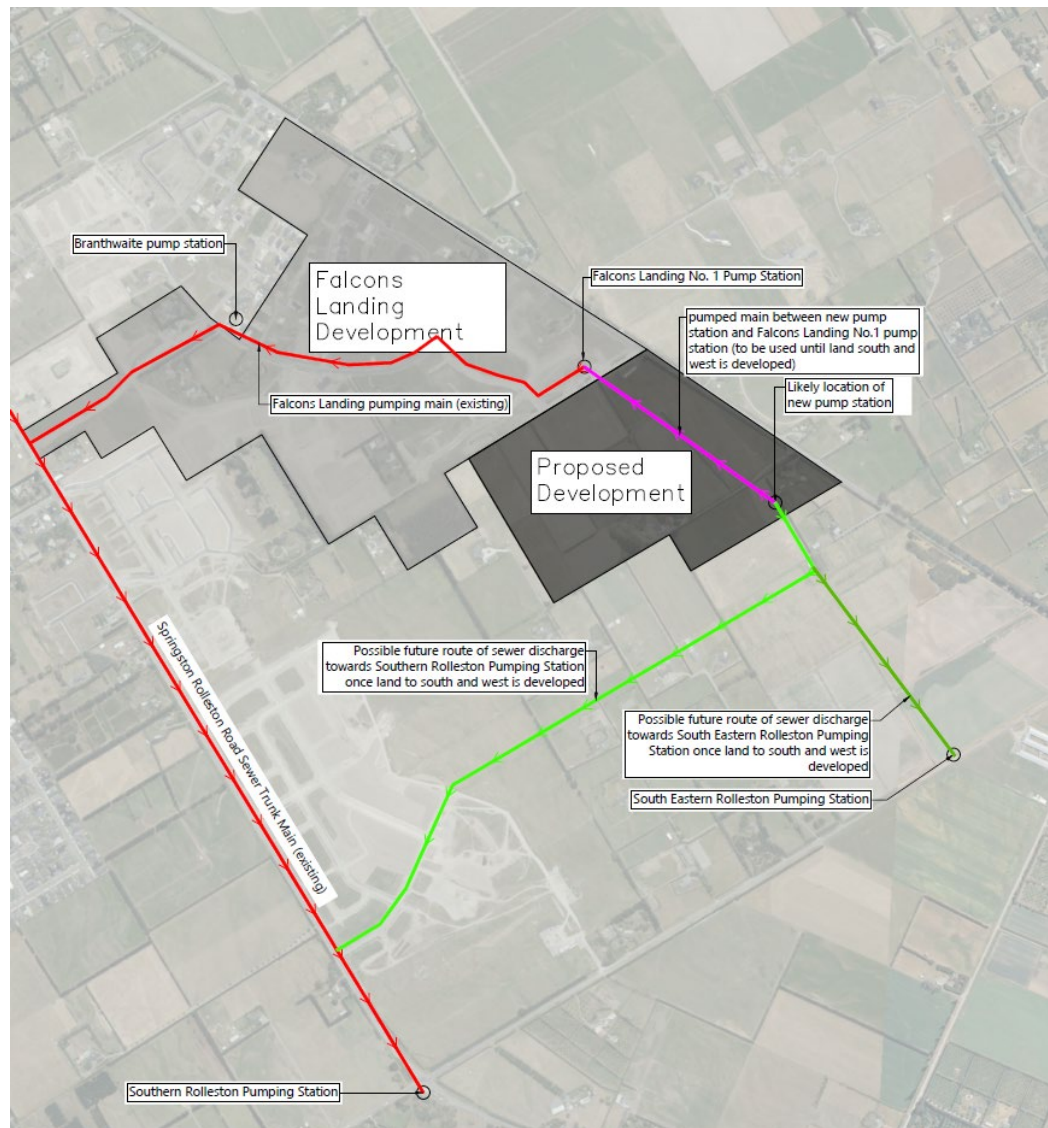
- 50 A piped system will be installed in the roading network to convey the water race flows through the site and to connect into the existing exit point from the site of the proposed development or other location as negotiated with the neighbouring landowner.
- 51 I agree with the Murray England's report in relation to the water-race and that details associated with the agricultural waterways are able to be addressed at the detail engineering phase.

WASTEWATER

- 52 A description of the sewer treatment conveyance and treatment system was given within the Council's officers report and this indicates that there is existing and planned capacity to cater for the rezoning and subsequent development.
- 53 I understand that Council have a long-term plan to increase the infrastructure to service areas within the Rolleston Structure Plan area, of which this application area is included.
- 54 The Council has advised that they consider there is sufficient capacity, both in terms of volume and treatment, to cater for the proposed land change.
- 55 The recent residential developments within the wider area (Falcons Landing, Branthwaite, Acland Park) use a combination of gravity and pump stations to connect into the main sewer line to the Pines treatment area. I consider that a similar approach will be used to service the application area.
- 56 I stated in my servicing report, attached to the Section 32 report, that the servicing of the application area will likely require some temporary system until the Council has constructed a new Rolleston South East pump station.
- 57 Once this pump station has been constructed, the application area can be serviced with gravity sewer main.
- 58 Until Pump Station Rolleston South East has been completed, I consider that the PC 75 area will be serviced by gravity sewer reticulation which will grade to the south east, where it will be pumped

from a temporary pump station to the existing pump stations within the Falcon's Landing development.

- 59 This pump station could be incorporated within the future network for the wider area. A possible schematic layout is indicated below.
- 60 Discussions with the Council indicate that the use of a temporary facility is acceptable.
- 61 I consider that the details of the reticulation can be resolved at the time of detailed engineering design.
- 62 In summary, there is sufficient existing or planned capacity within the Council's network to cater for development within the Rolleston Structure Plan area. The application site lies within this area.



STORMWATER

- 63 The council officers report noted that stormwater runoff from the wider Rolleston area is to ground, and this is considered to be suitable for development within PC 75. I agree with this opinion.
- 64 Any stormwater system would need to be constructed to the Council's infrastructure standards and any resource consent requirements associated with the discharge to ground, as is standard practice for development in Selwyn District.
- 65 I consider there are no significant impediments within the site that will impact on the ability to dispose to ground.
- 66 Secondary flows paths within the developed residential areas of Rolleston are via developed road corridors.
- 67 The site has areas that have been identified as being affected by the Plains Flood Management Overlay of the proposed District Plan where there are flow paths that have been identified as potentially being impacted by flood waters under a 1:200 ARI event.
- 68 The development of the site and, in particular the road corridors, will formalise the flow paths as shown in the Plains Flood Management overlay that cross the site. This will effectively divert flows to within road corridors and around housing areas.
- 69 I do not consider the Plains Flood Management overlay indicates any impediment to the development of the land that is unable to mitigated with an appropriately engineered road and reserve layout, that can be determined at the time of subdivision consent.
- 70 In summary, it is considered that the stormwater can be discharged to ground and that the roading network will allow for the conveyance of secondary flow paths through the site.

SUBMISSIONS

- 71 I have reviewed the submissions and note that there is no comment directed to the infrastructure as referred to in my evidence.

CONCLUSION

72 In conclusion, I note:

- a) The site lies within the Metropolitan Urban Limit as detailed in the Rolleston Structure Plan, and as such I understand that it is an anticipated area for future residential development.
- b) Mr England and myself are in agreement that there is sufficient existing and planned potable water and sewer capacity to service the PC 75 area.
- c) The ground conditions are similar to the surrounding developed area, namely topsoil covering gravels, which are highly suitable for urban development and for the disposal of stormwater to ground.
- d) The PC 75 area will include principal roading and infrastructure connections as noted in the Outline Development Plan, including those that have already been partially installed within adjoining developments.

73 There are no wider infrastructural constraints that would impede the development of residential allotments to the proposed density of the PC75 zone.

John Bannock

18 October 2021