**BEFORE AN INDEPENDENT HEARINGS PANEL**

**APPOINTED BY THE WAIMAKARIRI DISTRICT COUNCIL**

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|---|---|
| Under | the Resource Management Act 1991<br>*Sections 88-120, Resource Management Act 1991* |
| In the matter of | Submissions and further submissions in relation to the proposed Waimakariri District Plan, Variation 1 and Variation 2 |
| And | Hearing Stream 12C: Large lot Residential |
| And | **Alan and Margaret Fraser**<br>Submitter 123<br>**Alison and Peter Batchelor**<br>Submitter 135<br>**Anton and Deanna Musson**<br>Submitter 137<br>**Ron and Tracey Taylor**<br>Submitter 138<br>**Leanne and Paul Strathern**<br>Submitter 139<br>**Dianne and Geoff Grundy**<br>Submitter 140<br>**Graeme and Lynne Wellington**<br>Submitter 141 |

# EVIDENCE OF STEWART FLETCHER

**Date 5 July 2024**

My name is **STEWART FLETCHER** of Christchurch and I operate my own planning consultancy (Fletcher Consulting & Planning). I have been requested by a group of submitters to assist them in support of their submissions to rezone their properties in the Ashley Village area.

## 1 Qualifications

1.1 I am a Consultant Planner and have been practicing as a Planner for approximately 25 years. I have a Bachelor of Resource Studies from Lincoln University and am a full member of the NZ Planning Institute.

1.2 I have worked in a number of planning roles and have been operating my own consultancy for the past 13 years.

## 2 Expert Witness Practice Note

2.1 While not a Court hearing I note I have read, and agree to comply with, the Code of Conduct for Expert Witnesses as required by the Environment Court's Practice Note 2023. In providing my evidence, all of the opinions provided are within my expertise and I have considered, and I have not omitted to consider, any material facts known to me which might alter or qualify the opinions I express.

## 3 Scope of Evidence

3.1 A group of submissions have been made with regards to the zoning of a total of nine properties at the following addresses:

| Property Address | Legal Description | Property Size |
|---|---|---|
| 21 Fawcetts | Lot 2 DP 75032 | 8.09ha |
| 49 Fawcetts | Lot 1 DP 75032 | 3.30ha |
| 63 Fawcetts | Lot 1 DP 29067 | 2.02ha |
| 65 Fawcetts | Lot 2 DP 29067 | 2.02ha |
| 75 Fawcetts | Lot 3 DP 29067 | 2.02ha |
| 87 Fawcetts | Lot 4 DP 29067 | 2.02ha |
| 9 Boundary | Lot 5 DP 29067 | 2.02ha |
| 17 Boundary | Lot 6 DP 29067 | 2.02ha |
| 25 Boundary | Lot 10 DP 29067 | 10.01ha |

3.2 The combined total area of the properties is 33.52 hectares and the individual properties vary in size and shape.

3.3 As detailed later in this evidence, the content of the submissions submitted on the Proposed District Plan was comparatively unique in that the submissions included a greater level of detail than may normally be expected. This included a series of reports which were developed in consultation with Council. It is recommended that the Hearings Panel read the submissions and associated reports, in conjunction with this evidence.

3.4 On the basis of how the submissions came to be, their development and submission can be tracked back to the Waimakariri Rural Residential Development Strategy and the background work when it was prepared. The content of the submissions was developed in response to ongoing discussions, and it was generally anticipated that the expectations of Council had been met. The section 42A report has reviewed the submission and concluded that further information is required. On this basis my evidence primarily focuses on those matters raised in the section 42A report.

3.5 Specifically, the report considered that sufficient detail had not been provided and that information regarding the following was required:

- Provision for public reserves,
- Sufficient road layout to service the entire site
- Provision for active transport on the site
- Stormwater management areas,
- Identification of overland flow paths,
- Any ecological protection areas, and
- Intensification of any infrastructure requirements (reticulation mains and pump stations).

3.6 These aspects are considered and responded to later in my evidence. In addition to the above, a further submission was made by Transpower seeking further

recognition of the transmission lines which pass across the corner of the site. Accordingly, comment is also provided regarding this point.

## 4 Background

4.1 It is proposed to rezone a group of properties in the Ashley area, which for simplicity's sake, I refer to as the 'application site'. The background for these properties, and this consequential submission, is unique as it is a result of previous Waimakariri District Council (the Council) processes.

4.2 In preparing background reports in the preparation of the Waimakariri District Proposed District Plan (the PDP) the Council undertook a preliminary review of issues including the identification of areas which might be suitable for further residential development across the District, based on projected demand. This was necessary under Councils' obligations to ensure adequate land is available for residential purposes. This included the Waimakariri Rural Residential Development Strategy. The strategy document provides the reasoning for its development but, in simple terms, it considered how much residential land was required in the District and identified land that had greater potential to be developed for such purposes based on various high level factors. This included whether landowners had an interest in their land being zoned for residential purposes and were likely to subsequently develop their land.

4.3 Through this process the landowners subject to this submission expressed an interest in a potential change in zoning of their properties. The Ashley / Loburn areas were assessed, and areas identified as being potentially suitable for residential development, including the group of properties in this submission.

4.4 The Development Strategy makes it clear that further investigations of a more refined nature would be required to ensure the land was suitable for rezoning, such as being structurally sound, but at a first glance the land was identified as having potential to be rezoned. Importantly, what the strategy also does is identify that the land is required to fulfil Council's obligations to ensure adequate residential land is available. Accordingly, further investigations as to the need for the subject land, and overall demand for residential land in the District are a lesser issue for this submission and the focus is instead on ensuring the land is suitable for a residential zoning.

4.5 Since the release of the Development Strategy the landowners of the nine properties formed a group, obtained professional assistance, and investigated the development potential of their land, being the application site. These investigations have included several meetings with Council. Council have been clear that any potential change in zoning of the properties would necessitate a more detailed analysis of whether and how an area might be developed. Detailed investigations would avoid issues like those encountered in the previous plan where it was not actually feasible to develop some previously identified and zoned areas.

4.6 Council have been receptive and supportive of the work undertaken by the group and have provided guidance as to the issues that would need to be considered and investigated. The submissions, and the technical reports which were included, were a direct consequence of that guidance to ensure adequate information was provided to ensure the land is suitable for a change in zoning.

4.7 The intended process was that when Council released its' new District Plan for public consultation this would provide an opportunity for the group of landowners to submit and request that the zoning of the application site was changed to allow a higher density of living, ie a change to a Large Lot Residential zone.

## 5 Philosophy of Design

5.1 Significant consideration has been given to how the application site could be developed, if it was to be rezoned, and whether this can be realistically achieved. This includes multiple discussions with the landowners, site visits, consultation with the Council and the identification of those factors that could influence how the area is developed. Key factors which were identified were the number of individual properties (9 in total) and their different shapes and ownerships, the current use and development of the properties (particularly dwellings), connections available to the local roading network, the local school and the relationship with the surrounding area.

5.2 In consideration of these various factors it was also recognised that not all owners would be ready to subdivide their properties at the same time but it needs to be ensured that the subdivision of the properties remains feasible. You do not want a situation where one landowner is not ready to subdivide, thereby preventing the subdivision of the other properties. On this basis a concept was developed that generally a maximum of two landowners would need to work together in order to

subdivide their properties. For example, 21 and 49 Fawcetts Road could develop the section of internal road together without relying on other landowners.

5.3 It is recognised that some aspects of subdividing the area will necessitate landowners to work together, such as the installation of reticulated infrastructure networks, but generally the potential remains for landowners to develop their properties with more limited impact from other property owners within the group.

5.4 The examination of the characteristics of the area led to the development of a curved road which would connect to Fawcetts and Boundary Roads, passing through those parts of properties where more open space is available and also maximising opportunities for allotments to connect to the internal road. Opportunities were also taken to improve existing access arrangements, enable future connections to other properties (should the need arise) and to consider how connections could be enhanced to the school, encouraging active transport.

5.5 This led to concept plans for how the area could be subdivided and their ongoing refinement. From this the outline plan was also developed.

5.6 Ongoing refinement has continued, particularly since the release of the section 42A report. Identification of stormwater management areas has now been included in the Outline Development Plan and further parameters have been inserted into those provisions which accompany the Plan. On this basis I have attached an updated concept plan for how the application site could be developed, if rezoned, and also an updated outline development to reflect this (Appendix 1).

5.7 Now that the philosophy for the Plan has been explained I respond to those matters raised in the section 42A report, including the response the report author provided to the Hearings Panel in answering their various queries.

## 6 Public Reserves

6.1 The Section 42A report specified that further consideration should be given to the provision of public reserves. Generally, the need for reserves is dependent on the characteristics of a development and likely demand for public space. In my experience it is more unusual for subdivisions that create larger lifestyle sized allotments to provide neighbourhood parks and similar as more space is provided on individual allotments. The demand for neighbourhood parks is more likely to be in

those areas where properties cannot provide the same level of open space, for example space to kick a ball.

6.2 This stance is reflected in the Waimakariri District Council Development Contributions Policy 2023/2024. Section 4.3 of the policy addresses reserve contributions and recognises that there are two main types of reserves, being those that are used by the community as a whole and those that are used more often by people living in the immediate vicinity of the reserve. The policy recognises that residents in urban areas will likely make the most use of neighbourhood reserves and people living in rural areas will be likely to make use of district wide reserves. The policy (section 4.3.3) also notes that the Council will generally take development contributions towards providing reserves for open space and recreation in cash. In some circumstances the Council may consider taking land in lieu of a contribution. It is my interpretation of this that it is more typical of Council to accept a contribution, rather than land.

6.3 As has been previously discussed, ongoing consultation occurred with Council during the development of the proposed rezoning and at no stage was it suggested that land should be provided as reserve.

6.4 On the basis of the larger size of the allotments, the Development Contribution Policy and previous consultation with Council, it is considered unlikely that the Council would seek for reserve land to be provided as part of the rezoning of the site. It is more realistic that a contribution would be sought at the time of subdivision. It is also recognised that at the time of subdivision, further opportunities will be available to consider whether reserve land should be provided as part of any subdivision. For these reasons, it is not considered necessary to include the identification of a reserve area as part of the Outline Development Plan.

## 7 Sufficient Road Layout to Service the Entire Site

7.1 I have previously discussed the philosophy of the concept plan for the site and how it could potentially be developed in such a way which is both realistic while recognising the characteristics of the area. Due to the properties containing dwellings and ancillary features, and the location of the buildings, it is unrealistic to design a subdivision which would enable all allotments to be accessed from internal roadways.

One would potentially need to clear the sites and start with a blank canvas in order to achieve such an outcome.

7.2 I have recently consulted with Council regarding vehicle access arrangements and it is their preference that no vehicle crossings connect to Fawcetts Road. As per above I do not consider this to be realistic and have instead focused on maximising the number of allotments that connect to the internal road or Boundary Road and to minimise the number of crossings on to Fawcetts Road. This has led to a total of four vehicle crossings on to Fawcetts Road, plus the intersection with the internal road. I note that there are currently six vehicle crossings on to Fawcetts Road, together with a further five gateways. I have also proposed alterations to the concept layout to enable additional connections to the internal road thereby reducing the number of allotments more directly connecting to Fawcetts Road.

7.3 To ensure any future subdivision of the application site aligns with the suggested arrangement, I have proposed a number of requirements within the rule provisions, as they relate to the Outline Development Plan. These are detailed later in my evidence but key aspects are a limitation on the number of vehicle crossing a property is entitled to establish and the number of allotments a vehicle crossing is permitted to service.

7.4 In my opinion, the design of the Outline Development Plan and associated provisions strikes a positive balance where the majority of allotments would be accessed from either the internal road or Boundary Road. The number of vehicle crossings onto Fawcetts Road has also been reduced from six down to a total of four, plus the internal road connection. New vehicle crossings would be constructed for those four access points, and they would be designed to accommodate the number of allotments that would be accessed from each right of way. In my opinion, the proposed roading layout provides a positive balance and better ensures that the safety of the community will not be adversely impacted.

7.5 In addition, while I respect the Councils opinion that all vehicular access should be from internal roads, in my experience as a professional planner, I have reservations as to whether you would achieve good outcomes for the community if there was no interaction with the roading network of the area. I have experienced situations where subdivisions have been developed that turn their back on the roading network and this has resulted in it becoming increasingly difficult to control

vehicle speeds or obtain justification for a reduction in speed limits. Given that a school is located near the site, the encouragement of a development that facilitates higher vehicle speeds, ie a subdivision that does not interact with a road, is potentially in conflict with the health and safety of the community.

7.6 It is also noted that the Outline Development Plan includes provision for a future roading connection for land to the north. This was promoted by the submitters and was also supported by the Council. In doing so this promotes future opportunities for the Ashley Village Area to be developed in a more comprehensive well thought out manner rather than on an ad hoc basis.

## 8 Provision for Active Transport

8.1 The proposed outline development plan includes the identification of a roadway which is of such a width as to also enable provision of a footpath or perhaps a shared pathway. During the period of earlier consultation with Council, discussions included whether a separate walkway should be provided through the site which would enable better access or connections with the local school. This was investigated and the difficulty in providing such a walkway was that it would typically service only one part of the application site, such that the coverage which could be achieved was more limited. It was instead determined that the new roadway connecting to Boundary Road should be curved so as to reduce the distance between the school and the rezoned area. Council were supportive of this concept.

8.2 In addition, it is recognised that the Proposed District Plan includes specific requirements as to the provision of footpaths. This is predominantly with regards to the new internal road but, depending on interpretation (and any amendments made by the Hearings Panel), rule TRAN-R14 (Provision of New Footpaths) specifies that in residential zones for any activity that includes the creation of a new road, new footpaths (where none currently exist) shall be provided within the road reserve/road corridor. This would necessitate the establishment of a 1.8m wide footpath, as per standard TRAN-S9.

8.3 I recognise that for Fawcetts and Boundary Roads, a new road is not being created, but given that there are different transport rules regarding the formation of roads, which include footpath requirements, I would suggest the intention of this rule could be to require the establishment of footpaths where none exist. If I am correct,

the subdivision of the application site would necessitate the provision of a footpath of 1.8 metres in width along the frontage of the subdivision site, ie Fawcetts and Boundary Roads.

8.4 Therefore, the rezoning will provide a positive pedestrian connection through the site with orientation towards the local school but the rezoning of the property will potentially also facilitate the establishment of pathways on Fawcetts and Boundary Roads which will be positive both for residents of the rezoned area but also for other members of the community who obtain additional pedestrian and active transport options.

## 9 Stormwater Management Areas

9.1 The submission included a report prepared by E2 Engineering which assessed whether there were any limitations for the disposal of stormwater. Comments in the Section 42A Report suggested further analysis was required but also that potential locations for stormwater management locations should be identified.

9.2 Further consideration has been given to these matters and a letter is appended to this evidence from E2 Engineering which provides further assessment as to the control and disposal of stormwater as part of any future development of the rezoned area (Appendix 3). The analysis provided in the letter is conservative and assumes that no onsite stormwater disposal would be provided and also no collection of water would occur, such as the collection of roof water in tanks. This is considered conservative as it is understood that the dwellings across the properties all contain onsite stormwater disposal. It is also recognised that the calculations are based on achieving a reduction in stormwater flow from within the rezoned area, compared to existing flows.

9.3 Due to the hump and hollow topography of the area it has been identified that several stormwater management areas could be provided, generally in those lower parts of the properties adjoining Boundary and Fawcetts Road. The provision of these areas is entirely realistic and the outline development plan has been updated to include indicative locations for stormwater management. It is also envisaged that, at the time of subdivision, more detailed assessments would be undertaken such as the determination of onsite stormwater disposal availability and opportunities for

roadway stormwater control and disposal would be investigated such that a more precise design for stormwater management can be achieved.

9.4 For these reasons it is considered that stormwater can be readily managed as part of any rezoning of the site. Should it be of assistance to the Hearings Panel, the stormwater engineer would also be available to answer any questions the Hearings Panel may have.

**10 Identification of Overland Flow Areas**

10.1 As earlier detailed, the Council undertook high level preliminary investigations to identify areas which might be suitable for further residential development across the district. This led to the development of the Waimakariri Rural Residential Development Strategy. That strategy included consideration of such issues as flooding and overland flows and the lower susceptibility of the site was one of the reasons for further consideration of this site being warranted.

10.2 The reports that were provided as part of the submission included consideration of flooding and overland flow paths and assisted in identifying the hump and hollow characteristics of the area. The low points and high points across the property have been identified in the concept plan. The identification of the contours and flow paths across the site will necessitate some consideration as to the design of the subdivision of the properties but this is considered to be no different from many other subdivisions across Canterbury. Reports provided as part of the submission confirmed that overland flow paths would not impact the ability to develop the application site for large lot residential living. It is not unusual for a subdivision to necessitate some recontouring and identification of building areas.

10.3 On this basis it is considered that adequate consideration has already been given to the question of overland flow paths and while some areas have been identified, they are not of a nature so as to limit or prevent the development of the area on the basis of the zoning sought through the submissions.

10.4 I also note that other submitters have raised concerns regarding waterflows and the impacts on downstream properties (not regarding this site). These concerns originated from the development of the Lowburn Lee subdivision area north of the application site, on Cones Road. This has been a recognised issue for a number of

years with water directed down the roadway swale on Cones Road before being diverted under the road, through other properties and then passing through a corner of the subject site. Council have recognised this flooding issue and the impacts of the water being diverted under Cones Road. Works have recently commenced such that water will no longer be diverted and will instead continue down the Cones Road swale, eventually entering the Ashley River. On this basis, Council is implementing measures which will further reduce any impacts from overland flow paths on properties in the local area including the application site. Overland flow paths had been identified as acceptable and the works being undertaken by Council will further reduce any potential impacts.

**11 Ecological Protection Areas**

11.1 The application site is located within an area previously utilised for rural productive purposes and now utilised as lifestyle properties. I have visited all of the properties and have not observed any characteristics or features which may be of ecological significance. It is considered that there are no features which necessitate identification or assessment as part of the rezoning process and it is also considered that the rezoning of the properties may provide some opportunities for enhancement of the area, such as within those areas identified as overland flowpaths. To this end, I have suggested the incorporation of provisions promoting the enhancement of any potential riparian areas and the establishment of native plantings.

11.2 On this basis, it is not considered that there is a potential negative impact on the ecological characteristics of the area and instead opportunities are available to promote and encourage ecological enhancements.

**12 Intensification of Infrastructure Requirements**

12.1 During early consultation with the Council, a significant question was whether the proposed allotments could be adequately serviced with regards to water supply and effluent disposal. It was considered that the size of the allotments necessitated connections to reticulated systems which I agree with as the density of development could lead to adverse impacts if there was a reliance on individual bore water supplies and onsite wastewater disposal. Consultation with the Hurunui District Council, as reticulated water supply manager, confirmed that reticulated water was available. With regards to effluent disposal, in 2021 the Council initiated the installation of a

reticulated wastewater system to the Loburn Lee area due to ongoing issues with wastewater disposal. Through the consultation process with Council regarding the rezoning of these properties the Council agreed to the provision of capacity and a junction point on Cones Road to enable the establishment of a pipeline to service the application site. These measures ensure that reticulated connections are available for both water supply and wastewater disposal. It is not considered necessary, nor have Council requested the identification of a reticulated network on the outline development plan, but to further ensure connections to reticulated networks are required I have suggested additional wording as part of the description associated with the outline development plan.

**13 Transmission Lines**

13.1 Transpower lodged a neutral further submission regarding recognition of the transmission lines which pass across one corner of the application area. In the submission seeking the rezoning of the area, it was commented that any identification of a buffer area on the Outline Development Plan could potentially conflict with the provisions in other sections of the Proposed District Plan. If the Outline Development Plan specified a particular width requirement, which was different from other sections of the Proposed District Plan, this could create confusion.

13.2 To better address the recognition of the transmission lines the Outline Development Plan has been updated to show a wider area where the lines are located and the area identified aligns with District Plan maps. A description for the Outline Development Plan has been inserted to include specific reference to the need for compliance with those other relevant provisions in the Proposed District Plan regarding setbacks and subdivision design, as it relates to transmission lines.

13.3 I also note that the concept plan which has been provided to the Hearings Panel identifies allotments that could be developed without conflict to the transmission line network. The submitters are also open to any further suggestions that Transpower may have regrading this matter.

**14 Overall Amendments to Outline Development Plan**

14.1 In the submission which was lodged on the Proposed District Plan proposed wording was suggested to reflect the creation of the Outline Development Plan. My

evidence above has suggested the insertion of further wording to reflect the various matters discussed. I have appended this to my evidence (Appendix 2) and propose that it includes reference to the following:

- That the development of the site shall align with the Outline Development Plan.

- Vehicle access controls, including the number of vehicle crossing points on Fawcetts Road and the number of allotments which can be serviced by each vehicle crossing point.

- Requirements that the allotments are serviced by way of reticulated connections to Council networks for water and wastewater.

- That any subdivision shall comply with District Plan requirements regarding Transmission Line buffers and setbacks, including as part of subdivision design.

- Requirements that detailed stormwater investigations will be required as part of any subdivision including the provision of stormwater management areas.

14.2 The updated Outline Development Plan and a concept plan of how the development might play out is also appended.

**15 Summary**

15.1 Submissions have been lodged seeking the rezoning of a group of nine properties on Fawcetts and Boundary Roads in the Ashley Village area. The initial catalyst in seeking the rezoning was Council investigations as to the provision of land for Large Lot Residential purposes. The submitters have worked with Council to develop a concept that Council have previously been generally supportive of, and reports have been provided in support of the proposal.

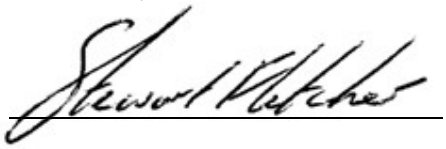
15.2 Detailed submissions were lodged, including reports that confirmed that there were no significant impediments that would prevent both the rezoning and future use of the land for large lot residential purposes. Following the more recent analysis undertaken by Council, further refinements have been made and additional information presented to address the recent concerns of Council.

15.3 It is considered that the rezoning of the site aligns with the local character and amenity of the area but also the proposed Outline Development Plan enables progressive development of the area, despite being in multiple ownerships.

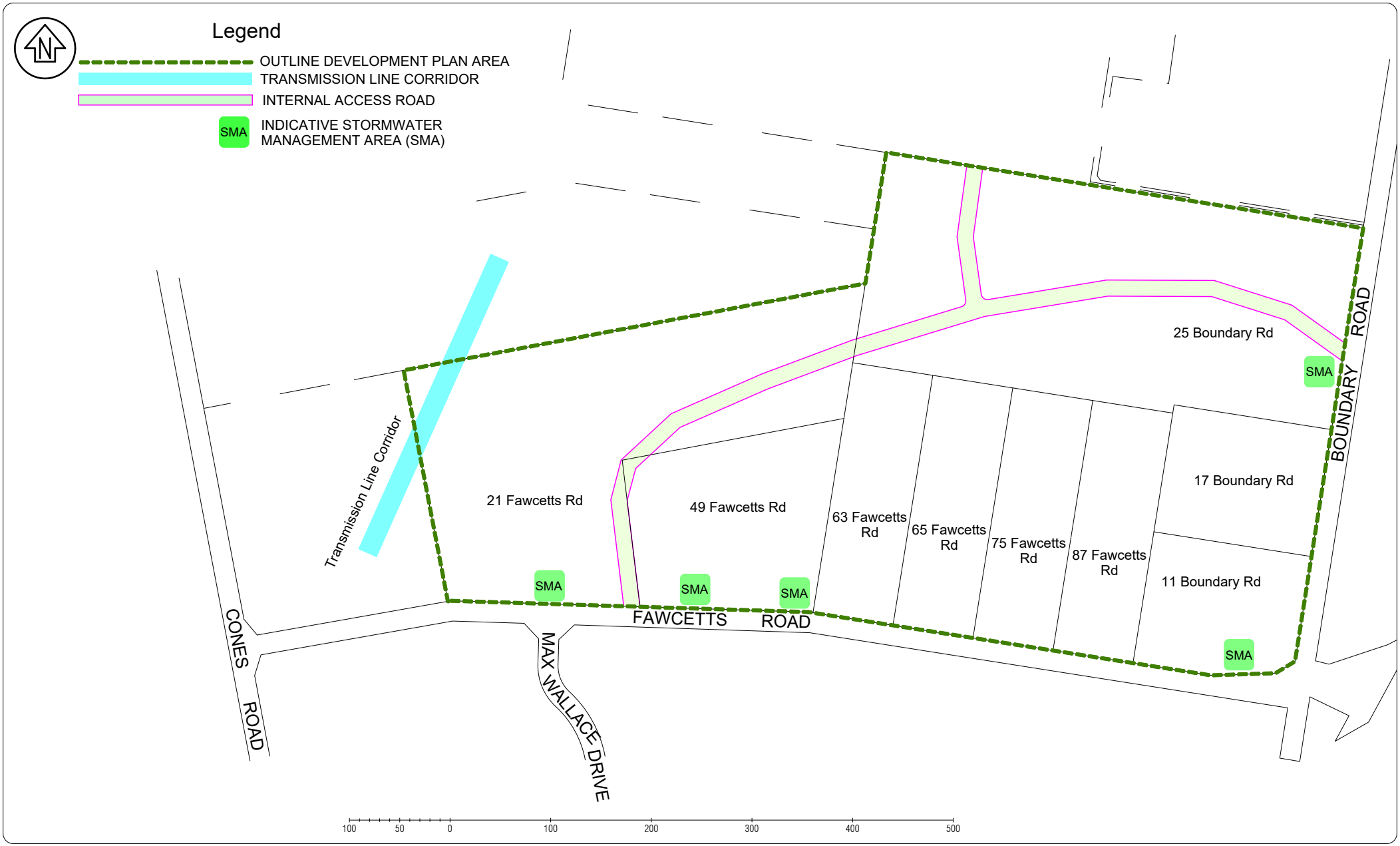
15.4 Overall, it is considered that the application site is capable of being developed based on a large Lot Residential Zoning and there are no impediments that would prevent this occurring.

**Stewart Fletcher**

Dated 5 July 2024



# APPENDIX 1:
# Updated ODP and Concept Plan

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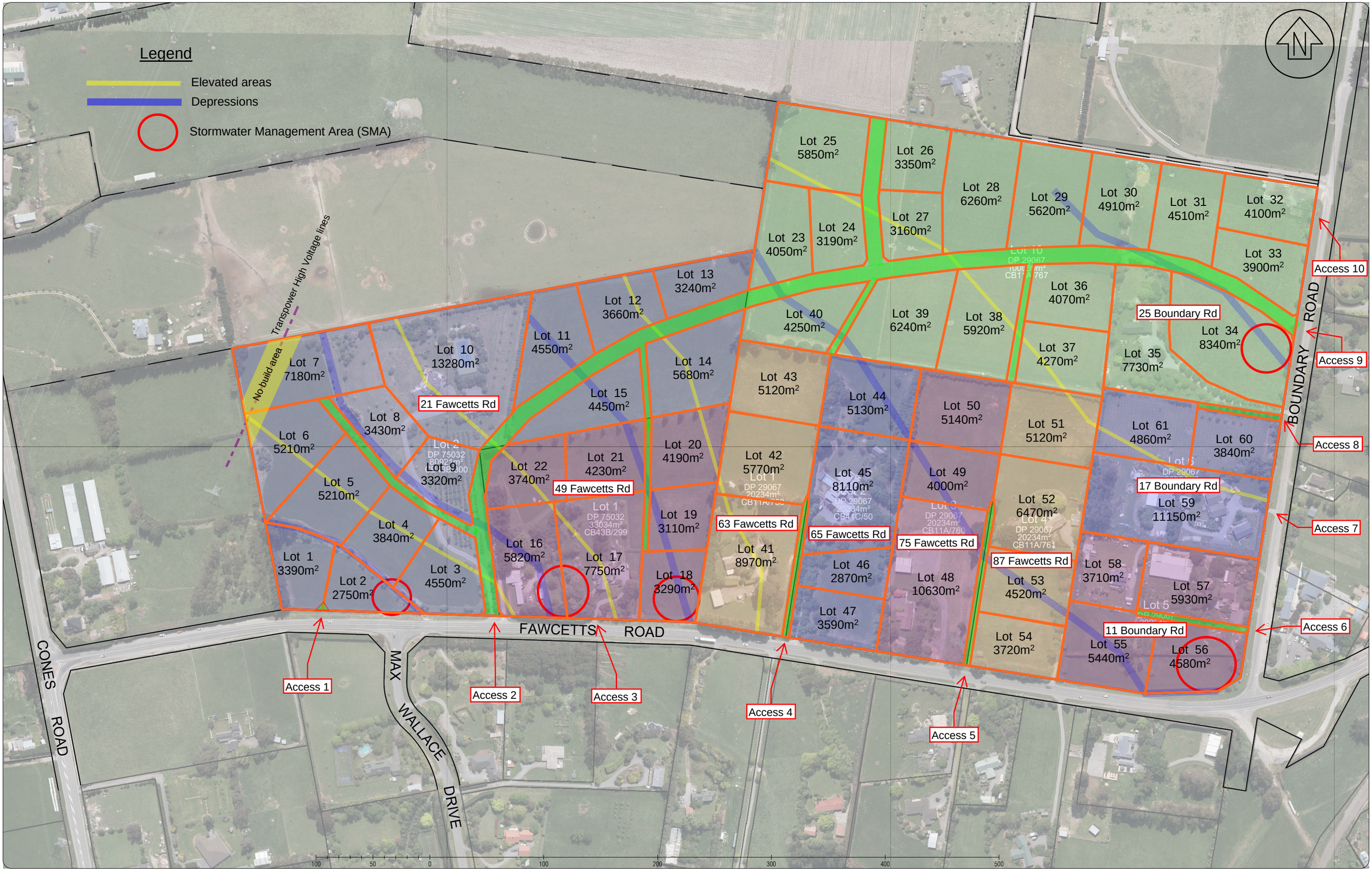
| | | |
|---|---|---|
| Date: 05/07/2024 | CT ref: | A4 Sheet |
| Surveyed: - | Total area: 33.54ha | Revision A |
| Drawn: LS | Client: Ashley Village L.O.G. | |
| Checked: RV | Scale: 1:5000 | Sheet |
| Local Authority: Waimakariri District | | Ref: 3496 |

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Notes:

# Concept Subdivision Plan
# Ashley Village

| Issue Details | | |
|---|---|---|
| Rev. | Description | Date |
| A | Issued to client | 05/07/2024 |
| | | |
| | | |

| | | |
|---|---|---|
| Date: 05/07/2024 | CT ref: | A3 Sheet |
| Surveyed: - | Total area: | Revision A |
| Drawn: LS | Client: AshleyVillage L.O.G. | |
| Checked: RV | Scale 1:3000 @ A3 | Sheet: |
| Local Authority: Waimakariri District | | Ref: 3496 |

# APPENDIX 2:
# Proposed Rules

# ADA – Ashley Development Area

## Introduction

The Ashley Development Area is located to the north of Fawcetts Road and to the west of Boundary Road. National Grid transmission lines run across the northwest corner of the development area. The area is zoned for Large Lot Residential Development and the applicable provisions of the Waimakariri District Plan apply.

The DEV-ADA-APP1 area includes:

- Transport connections from Fawcetts Road through the site to Boundary Road and future roading connections to properties to the north of the development area; and
- Identification of existing National Grid Transmission Lines which pass across the northwest corner of the development area.
- Identification of indicative Stormwater Management Areas.

## Activity Rules

| **DEV-ADA-R1 Ashley Development Area Outline Development Plan** | |
|---|---|
| **Activity status: PER**<br><br>Where:<br><br>1. development shall be in accordance with DEV-ADA-APP1. | **Activity status when compliance not achieved: DIS** |

### Advisory Note

- For the avoidance of doubt, the purpose of the ODP is to facilitate the establishment of a transport network through the site and appropriate stormwater management. All other provisions of the District Plan remain applicable except where an Activity or Built Form Standard is in conflict with this ODP, the ODP shall substitute the provision.

## Built Form Standards

## Activity Rules

| **DEV-ADA-BFS1 Vehicular Access** | |
|---|---|
| 1. Vehicular access from Fawcetts (excluding via the | **Activity status when compliance not achieved: DIS** |

internal access road) shall be limited as to the number of vehicle crossings and number of allotments served as follows:

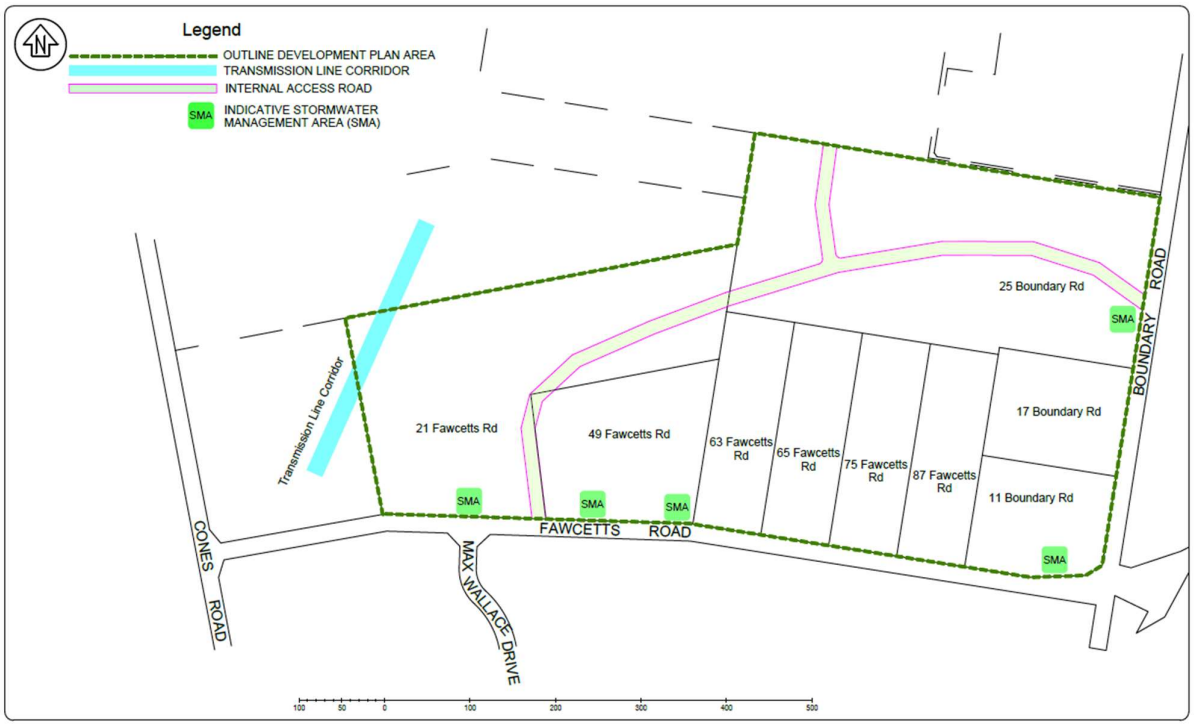
(a) 21 Fawcetts Road shall include no more than one vehicle crossing, providing access to no more than two residential allotments.
(b) 49 Fawcetts Road shall include no more than one vehicle crossing providing access to no more than one residential allotment.
(c) 63 Fawcetts Road shall include no more than one vehicle crossing which shall be located directly on the eastern boundary of the property and shared with 65 Fawcetts Road. The vehicle crossing shall provide access to no more than three residential allotments on the property.
(d) 65 Fawcetts Road shall include no more than one vehicle crossing which shall be located directly on the western boundary of the property and shared with 63 Fawcetts Road. The vehicle crossing shall provide access to no more than three residential allotments on the property.
(e) 75 Fawcetts Road shall include no more than one vehicle crossing which shall be located directly on the eastern boundary of the property and shared with 87 Fawcetts Road.

| | |
|---|---|
| The vehicle crossing shall provide access to no more than three residential allotments on the property.<br>(f) 87 Fawcetts Road shall include no more than one vehicle crossing which shall be located directly on the western boundary of the property and shared with 75 Fawcetts Road. The vehicle crossing shall provide access to no more than three residential allotments on the property.<br>(g) 11 Boundary Road shall have no direct vehicular access to Fawcetts Road. All vehicular access shall be via Boundary Road. | |
| **DEV-ADA-BFS2 Reticulated Services** | |
| 1. All residential allotments within the Outline Development Plan area must have connections to Council managed reticulated water and wastewater systems. | **Activity status when compliance not achieved: DIS** |
| **DEV-ADA-BFS3 Stormwater** | |
| 1. All residential allotments must include roof water collection tanks and where possible, on-site stormwater disposal.<br>2. All residential allotments must also include an available connection to the relevant stormwater management system. | **Activity status when compliance not achieved: DIS** |
| **DEV-ADA-BFS4 Transmission Lines** | |

| | |
|---|---|
| 1. Any subdivision or land use must comply with those provisions of the Waimakariri District Plan which relate to National Grid Transmission Lines including buffers and setbacks. | **Activity status when compliance not achieved: DIS** |
| **DEV-ADA-BFS5 Vegetation** | |
| 1. The subdivision of any property shall include provision for the establishment of native vegetation plantings to both enhance the amenity of the area and promote ecological enhancement. | **Activity status when compliance not achieved: DIS** |

## Appendix

### DEV-ADA-APP1 Ashley ODP



# APPENDIX 3:
# Stormwater Engineer Comment

PO Box 31159, Christchurch
www.e2environmental.com

4 July 2024

Waimakariri District Council
215 High Street
Rangiora

Attn: Stewart Fletcher

Stream 12C – Large Lot Residential Rezone – Ashley Village Stormwater Serviceability

To whom it may concern,

Waimakariri District Council (WDC) have requested further information relating to stormwater management areas (SMA), overland flow paths, and a basin location close to dwelling 16 for the proposed Ashley Village on Fawcetts Road. This letter explains why the allocated SMAs provide enough area to accommodate the necessary stormwater controls on site for the proposed development.

e2Environmental Ltd have refined the SMA basin calculations based on the 50-year event plus climate change (+CC) rather than the 10-year event (+CC) used previously (Fawcetts Rd SW Servicing r2, 2021) as we consider this to be more appropriate as a baseline for full stormwater neutrality for the site.

To the 50-year sized ponds, a 200mm freeboard was added plus a shaping factor/contingency to account for shaping and maintenance strips, inefficiencies that arise from a separate first flush basin, and contingency for changes arising from detailed design in the modelling stage. A summary of all stormwater management area catchments is shown in Table 1 below, with the respective indicative SMA locations shown in Figure 1. The updated calculations are attached below.

It is possible for these SMAs to reduce in size if soakage to ground is proven viable, if roof tanks are used, or if basin depths can be increased (work is required to confirm suitable outlet depths related to the elevation and headwater at each discharge point). Soakage to ground for 10% AEP roof runoff would significantly reduce the SMAs. However, since none of these options can be guaranteed at this stage, we

would not be confident recommending a smaller SMA allocation than those provided. Note that the future detailed design should include modelling and refinement of the parameters discussed above.

The existing overland flow paths are expected to remain post-development. Considering the large lot sizes, dwellings and driveways on each lot can be built outside of any existing flood hazard area. SMAs have been based on existing catchments and overland flow paths remaining similar to the existing scenario because the proposed scheme plan does not allow all overland flow paths to be contained within the road reserves.

We note that the buildings on Lot 16 are sheds, not dwellings, meaning that this is not an issue for SMA positioning. Table 1 below shows a summary of each SMA's sizing calculations, with indicative areas shown in Figure 1.

*Table 1. SMA Sizing Calculations*

| SMA | Catchment Area (ha) | Pond Volume ($m^3$) | Pond Depth (m) | 50-yr Pond Area ($m^2$) | Pond Area with freeboard ($m^2$) | SMA with shaping factor and contingency ($m^2$) |
|---|---|---|---|---|---|---|
| **1** | 1.81 | 253 | 0.50 | 600 | 650 | 910 |
| **2** | 3.88 | 533 | 0.50 | 1,200 | 1,270 | 1,780 |
| **3** | 5.13 | 745 | 0.50 | 1,650 | 1,730 | 2,420 |
| **4** | 14.45 | 2,075 | 0.60 | 3,750 | 3,880 | 5,430 |
| **5** | 8.26 | 1,048 | 0.55 | 2,100 | 2,190 | 3,070 |

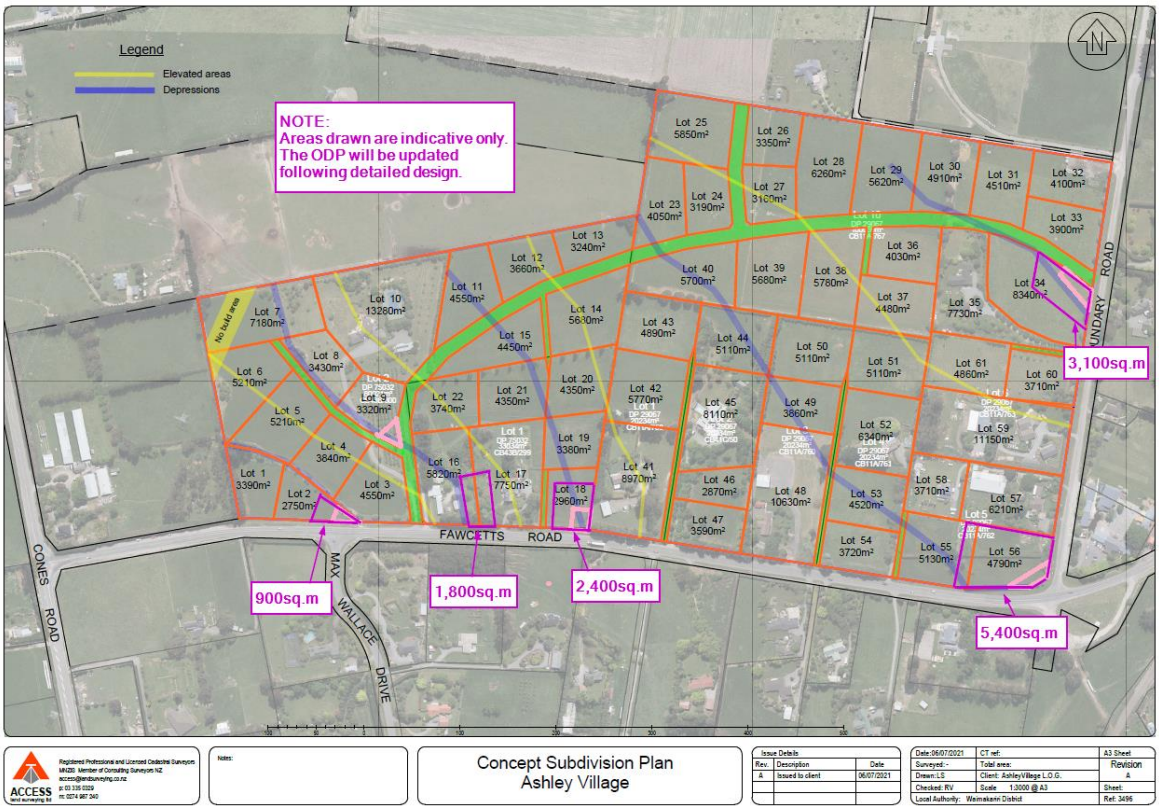



*Figure 1. Indicative SMA locations*

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**Assessment of the downstream effects of post-development stormwater:**

The WDC code of practice states: "*Post-development peak flows for all intensity events shall be less than pre-development flows.*" The post-development peak flows will be limited by the orifice at each SMA basin. The volume/depth of the basins in smaller duration events are smaller than that used for the 24hr calculation. Therefore, the post-development peak flows will be smaller than the pre-development flows for up to and including the 24-hour 50-year event (see attached PDF). This will be confirmed at the detailed design stage.

Yours sincerely,
Andrew Tisch
Director and Principal Engineer

Ph 03 961 3558
andrew.tisch@e2environmental.com

**Catchment 1**

# POND ANALYSIS

## CATCHMENT PARAMETERS

| | | |
|---|---|---|
| Pond Treatment Area = | 18,100 | $m^2$ |
| Pre-development Runoff Coefficient = | 0.30 | (-) |
| Post-development Runoff Coefficient = | 0.41 | (-) |

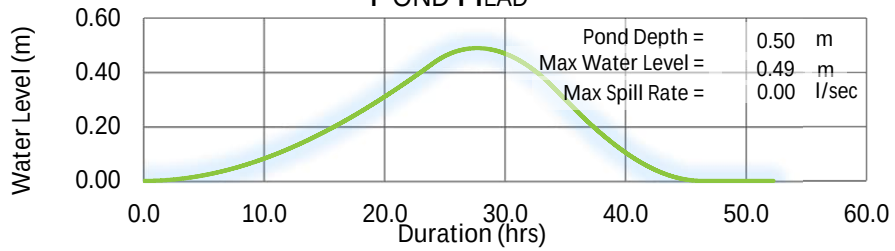
## DESIGN CONDITIONS

| | | |
|---|---|---|
| Design Rainfall Zone = | Alternative Rainfall | |
| Design Storm Duration = | 24hrs | |
| Design Storm Return Period = | 50 | yr |

## POND DETAILS

| | | | | | |
|---|---|---|---|---|---|
| Pond Top Length = | 20.0 | m | Pond Depth = | 0.50 | m |
| Length Side Slope $z_L$ = | 4.0 | 1*v* :$z_L$*h* | Pond Volume = | 252.60 | $m^3$ |
| Pond Top Width = | 30.0 | m | Orifice Size = | (Marley Nom. Size) 75 | mm |
| Width Side Slope $z_W$ = | 4.0 | 1*v* :$z_W$*h* | Orifice Type = | Short tube (C=0.80) | (-) |

## POND HEAD

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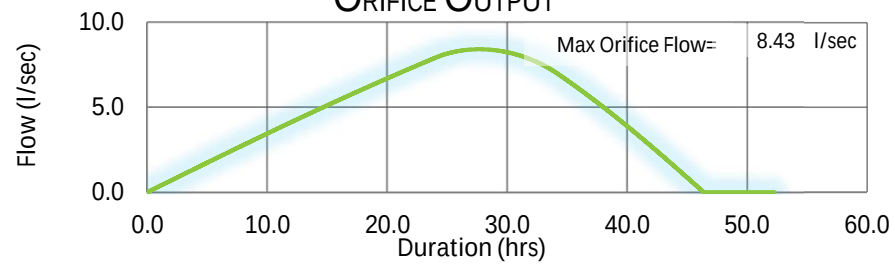
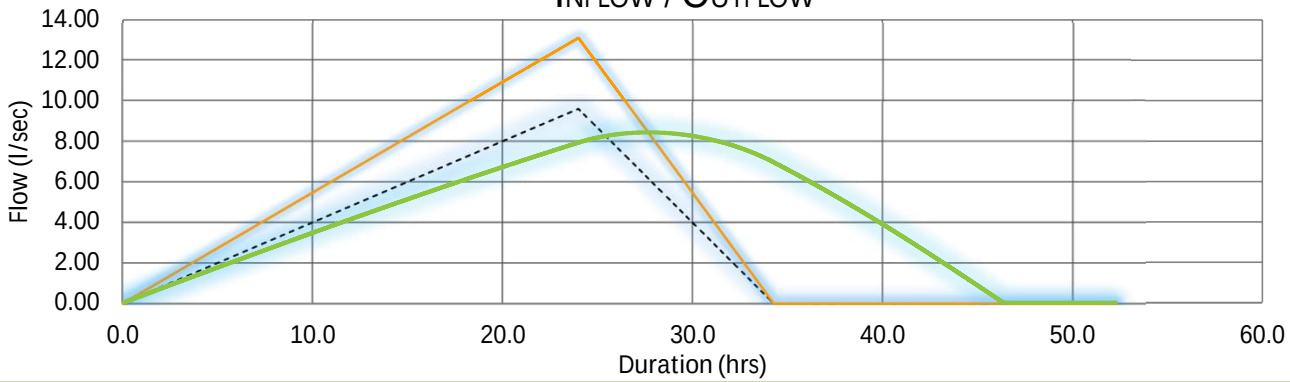



## INFLOW / OUTFLOW




## RUNOFF RESULTS

| | | |
|---|---|---|
| Pre-Developed Peak Flow = | 9.59 | l/sec |
| Pre-Developed Runoff Volume = | 591.57 | $m^3$ |
| *Without Tank* | | |
| Post-Developed Peak Flow = | 13.10 | l/sec |
| Post-Developed Runoff Volume = | 808.48 | $m^3$ |
| *With Tank* | | |
| Post-Developed Peak Flow = | 8.43 | l/sec |
| Post-Developed Runoff Volume = | 808.48 | $m^3$ |

----- Pre Development Runoff

Post Development Runoff (without pond)

Post Development Runoff (with pond)

**Catchment 2**

# POND ANALYSIS

## CATCHMENT PARAMETERS

| | | |
|---|---|---|
| Pond Treatment Area = | 38,840 | $m^2$ |
| Pre-development Runoff Coefficient = | 0.30 | (-) |
| Post-development Runoff Coefficient = | 0.41 | (-) |

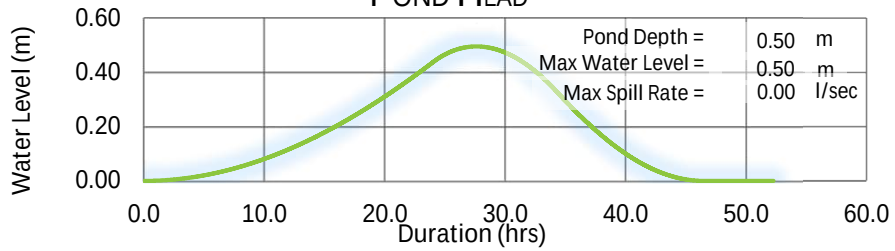
## DESIGN CONDITIONS

| | | |
|---|---|---|
| Design Rainfall Zone = | Alternative Rainfall | |
| Design Storm Duration = | 24hrs | |
| Design Storm Return Period = | 50 | yr |

## POND DETAILS

| | | | | | |
|---|---|---|---|---|---|
| Pond Top Length = | 30.0 | m | Pond Depth = | 0.50 | m |
| Length Side Slope $z_L$ = | 4.0 | 1*v* :$z_L$*h* | Pond Volume = | 532.64 | $m^3$ |
| Pond Top Width = | 40.0 | m | Orifice Size = | (Marley Nom. Size) 110 | mm |
| Width Side Slope $z_W$ = | 4.0 | 1*v* :$z_W$*h* | Orifice Type = | Short tube (C=0.80) | (-) |

## POND HEAD

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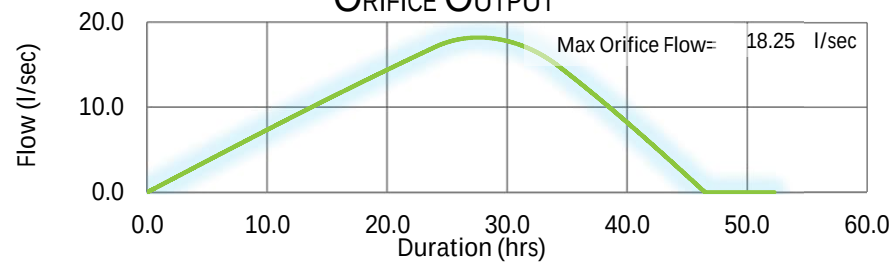
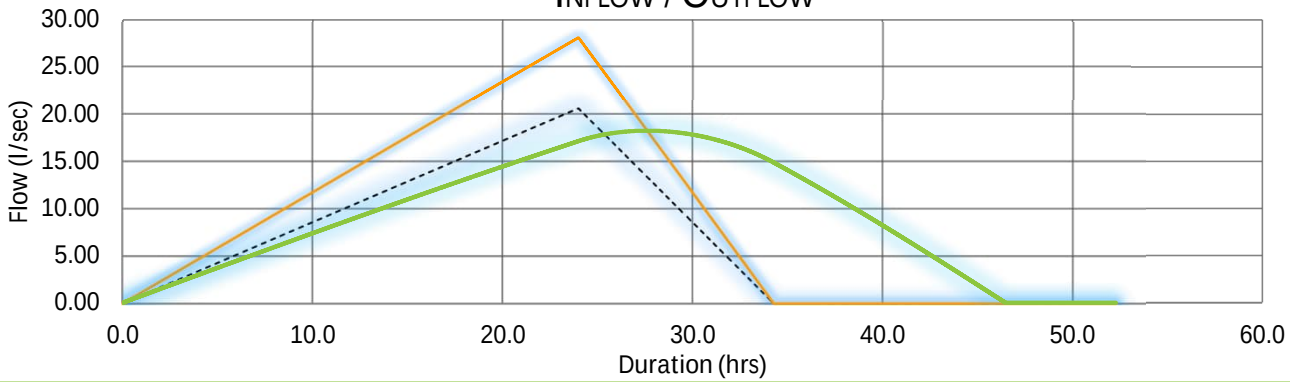



## INFLOW / OUTFLOW




## RUNOFF RESULTS

| | | |
|---|---|---|
| Pre-Developed Peak Flow = | 20.57 | l/sec |
| Pre-Developed Runoff Volume = | 1269.42 | $m^3$ |
| *Without Tank* | | |
| Post-Developed Peak Flow = | 28.11 | l/sec |
| Post-Developed Runoff Volume = | 1734.87 | $m^3$ |
| *With Tank* | | |
| Post-Developed Peak Flow = | 18.25 | l/sec |
| Post-Developed Runoff Volume = | 1734.87 | $m^3$ |

----- Pre Development Runoff

Post Development Runoff (without pond)

Post Development Runoff (with pond)

**Catchment 3**

# POND ANALYSIS

## CATCHMENT PARAMETERS

| | | |
|---|---|---|
| Pond Treatment Area = | 51,340 | $m^2$ |
| Pre-development Runoff Coefficient = | 0.30 | (-) |
| Post-development Runoff Coefficient = | 0.41 | (-) |

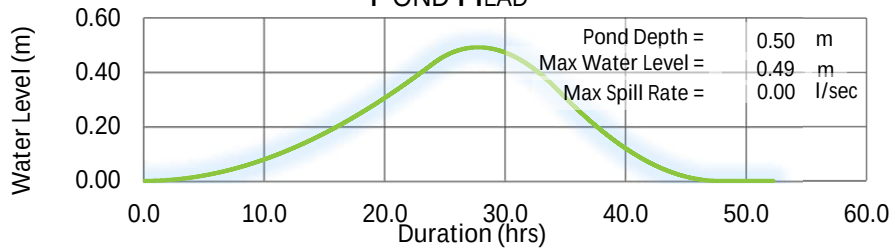
## DESIGN CONDITIONS

| | | |
|---|---|---|
| Design Rainfall Zone = | Alternative Rainfall | |
| Design Storm Duration = | 24hrs | |
| Design Storm Return Period = | 50 | yr |

## POND DETAILS

| | | | | | |
|---|---|---|---|---|---|
| Pond Top Length = | 33.0 | m | Pond Depth = | 0.50 | m |
| Length Side Slope $z_L$ = | 4.0 | 1*v* :$z_L$*h* | Pond Volume = | 744.60 | $m^3$ |
| Pond Top Width = | 50.0 | m | Orifice Size = | (Marley Nom. Size) 125 | mm |
| Width Side Slope $z_W$ = | 4.0 | 1*v* :$z_W$*h* | Orifice Type = | Short tube (C=0.80) | (-) |

## POND HEAD

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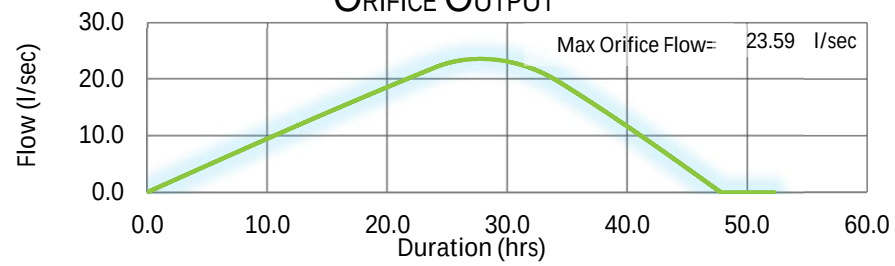
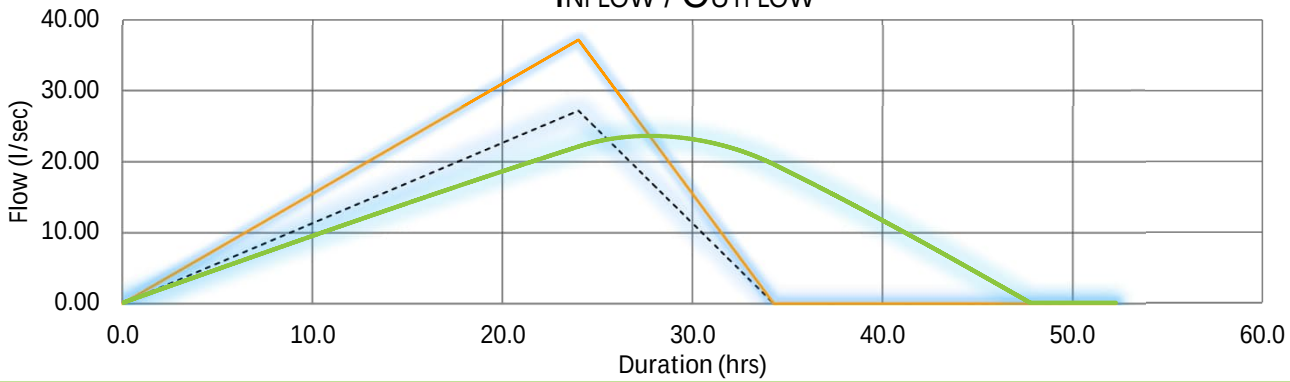



## INFLOW / OUTFLOW




## RUNOFF RESULTS

| | | |
|---|---|---|
| Pre-Developed Peak Flow = | 27.19 | l/sec |
| Pre-Developed Runoff Volume = | 1677.96 | $m^3$ |
| *Without Tank* | | |
| Post-Developed Peak Flow = | 37.16 | l/sec |
| Post-Developed Runoff Volume = | 2293.21 | $m^3$ |
| *With Tank* | | |
| Post-Developed Peak Flow = | 23.59 | l/sec |
| Post-Developed Runoff Volume = | 2293.21 | $m^3$ |

----- Pre Development Runoff
Post Development Runoff (without pond)
Post Development Runoff (with pond)

**Catchment 4**

# POND ANALYSIS

## CATCHMENT PARAMETERS

| | | |
|---|---|---|
| Pond Treatment Area = | 144,530 | $m^2$ |
| Pre-development Runoff Coefficient = | 0.30 | (-) |
| Post-development Runoff Coefficient = | 0.41 | (-) |

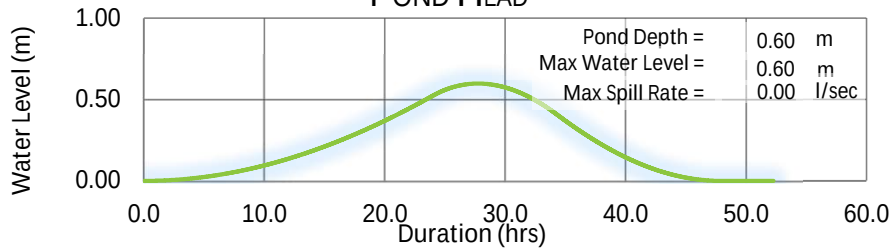
## DESIGN CONDITIONS

| | | |
|---|---|---|
| Design Rainfall Zone = | Alternative Rainfall | |
| Design Storm Duration = | 24hrs | |
| Design Storm Return Period = | 50 | yr |

## POND DETAILS

| | | | | | |
|---|---|---|---|---|---|
| Pond Top Length = | 50.0 | m | Pond Depth = | 0.60 | m |
| Length Side Slope $z_L$ = | 4.0 | 1*v* :$z_L$*h* | Pond Volume = | 2,074.50 | $m^3$ |
| Pond Top Width = | 75.0 | m | Orifice Size = | (Marley Nom. Size) 200 | mm |
| Width Side Slope $z_W$ = | 4.0 | 1*v* :$z_W$*h* | Orifice Type = | Short tube (C=0.80) | (-) |

## POND HEAD

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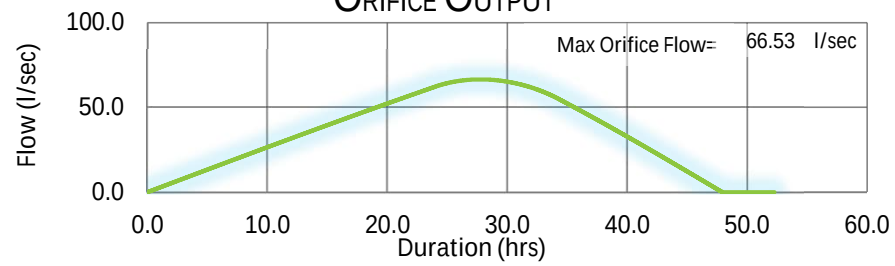
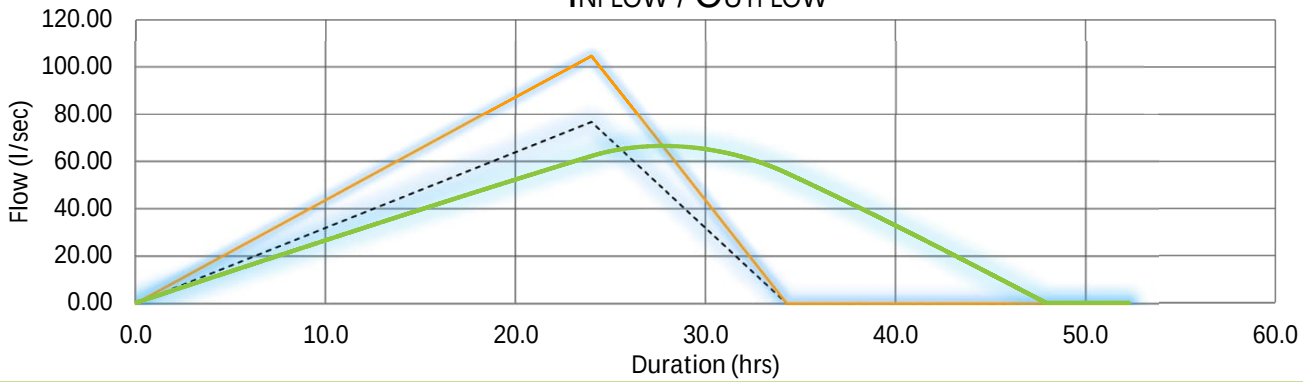



## INFLOW / OUTFLOW




## RUNOFF RESULTS

| | | |
|---|---|---|
| Pre-Developed Peak Flow = | 76.54 | l/sec |
| Pre-Developed Runoff Volume = | 4723.71 | $m^3$ |
| *Without Tank* | | |
| Post-Developed Peak Flow = | 104.61 | l/sec |
| Post-Developed Runoff Volume = | 6455.74 | $m^3$ |
| *With Tank* | | |
| Post-Developed Peak Flow = | 66.53 | l/sec |
| Post-Developed Runoff Volume = | 6455.74 | $m^3$ |

----- Pre Development Runoff

Post Development Runoff (without pond)

Post Development Runoff (with pond)

**Catchment 5**

# POND ANALYSIS

## CATCHMENT PARAMETERS

| | | |
|---|---|---|
| Pond Treatment Area = | 82,600 | $m^2$ |
| Pre-development Runoff Coefficient = | 0.30 | (-) |
| Post-development Runoff Coefficient = | 0.41 | (-) |

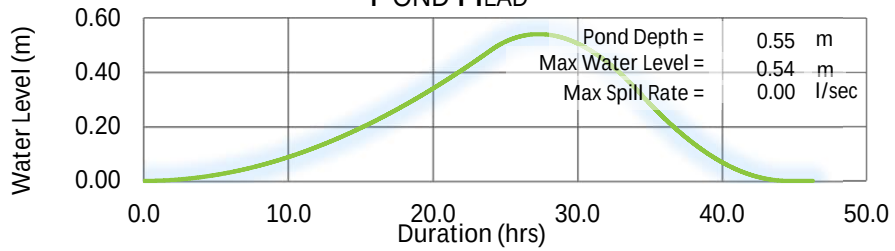
## DESIGN CONDITIONS

| | | |
|---|---|---|
| Design Rainfall Zone = | Alternative Rainfall | |
| Design Storm Duration = | 24hrs | |
| Design Storm Return Period = | 50 | yr |

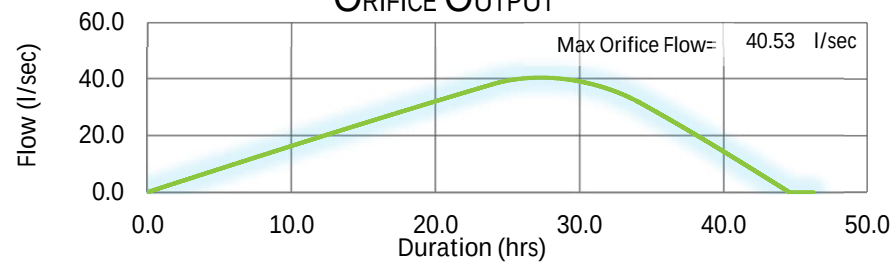
## POND DETAILS

| | | | | | |
|---|---|---|---|---|---|
| Pond Top Length = | 42.0 | m | Pond Depth = | 0.55 | m |
| Length Side Slope $z_L$ = | 4.0 | 1*v* :$z_L$*h* | Pond Volume = | 1,047.21 | $m^3$ |
| Pond Top Width = | 50.0 | m | Orifice Size = | (Marley Nom. Size) 160 | mm |
| Width Side Slope $z_W$ = | 4.0 | 1*v* :$z_W$*h* | Orifice Type = | Short tube (C=0.80) | (-) |

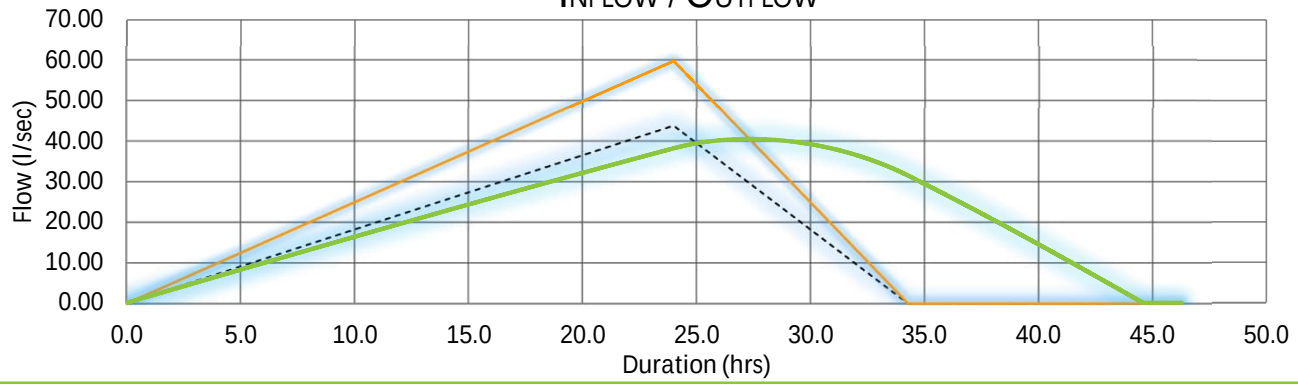
## POND HEAD




## ORIFICE OUTPUT




## INFLOW / OUTFLOW




## RUNOFF RESULTS

| | | |
|---|---|---|
| Pre-Developed Peak Flow = | 43.74 | l/sec |
| Pre-Developed Runoff Volume = | 2699.64 | $m^3$ |
| *Without Tank* | | |
| Post-Developed Peak Flow = | 59.78 | l/sec |
| Post-Developed Runoff Volume = | 3689.51 | $m^3$ |
| *With Tank* | | |
| Post-Developed Peak Flow = | 40.53 | l/sec |
| Post-Developed Runoff Volume = | 3689.51 | $m^3$ |

----- Pre Development Runoff

Post Development Runoff (without pond)

Post Development Runoff (with pond)