Hepburn Planning Scheme
Farm Management Plan

Address: 399 Mollongghip Road, Mollongghip
Reference: P-00664

Hepburn Shire Council

iPlanning Services Pty Ltd – August 2019

Prepared for:

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Quality Information

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1. Introduction

This Farm Management Planning Report aims to provide supporting documentation for the construction and use of a dwelling and an associated outbuilding on land defined as 399 Mollongghip Road, Mollongghip.

This Farm Management Plan details the current extent of the subject land, and recommends appropriate agricultural enterprise that can be conducted on the subject site, given the land capability and environmental features of the site. It is considered that an agricultural use can effectively be implemented and maintained on the site if a dwelling is also constructed on the site.

2. Background

The site is currently agricultural land which is not presently being used for a rural purpose. The subject site contains soils of high agricultural productivity and the current agricultural use on the site will continue to be managed heavily to be economically viable. Due to the natural and physical features of the site, the proposed agricultural use of the site will be growing of herbs, vegetables and fruits.

The construction of a dwelling on this property is necessary to allow the owners to carry out this agricultural use. Due to the high quality of the soils, pasture grasses will need to be carefully cultivated and controlled to support a viable fruit and vegetable growing operation which will require a significant amount of time, effort and funds to effectively and efficiently establish and continue the agricultural use on the site. In addition, the proposed use means a more intensive system of management required which includes manual weed removal and pest control and the like. This is only feasible if the owner can consolidate their assets into the farm through the construction of the dwelling, which is therefore considered to be a necessary and appropriate development given the features of the site.

3. Proposal

The owners proposes to construct and use a dwelling on the subject land. This dwelling will facilitate the development of an agricultural enterprise on the subject site. This agricultural enterprise will consist of:

- Growing an extensive amount of herbs and vegetables; and
- Planting fruit trees to produce excellent variety of fruits that can be used for making of jams.

A portion of the site will be reserved for biodiversity and conservation purposes. More information on this can be found in the Land Management Plan which has also been prepared for this property.

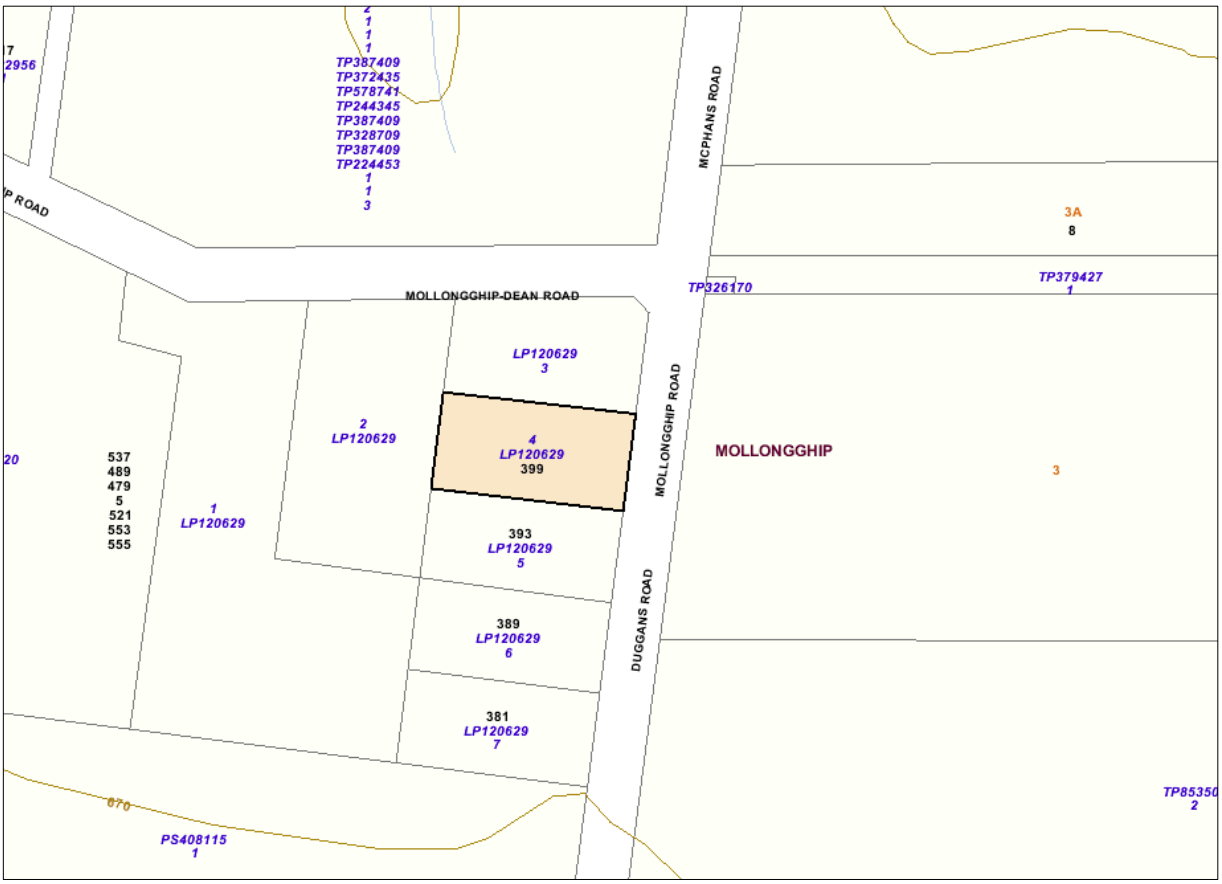
4. Category and Classification of the Land

The subject site is included within:

- The Farming Zone (FZ)
- The Hepburn Shire Council.

5. Existing Conditions

5.1 Locality Plan



5.2 Context

The subject site is located on the west side of Mollongghip Road between Mollonghip-Dean Road to the north and Boundary Church Road to the south.

The site consists of one Title, Vol. 09237 Fol. 725 Lot 4 on Lodged Plan No. 120629.

The site is regular in shape with a frontage of approximately 50.0 metres to Mollongghip Road, a western boundary of 50.0 metres a southern and northern boundary of 100 metres, with an overall area of approximately 5,000m^2.

Refer to Appendix A for photos of the existing conditions of the property and Appendix B for the Land Management Plan showing the site features and conditions. The subject site and all surrounding land is included in the Farming Zone.

The site is in close proximity to the rural township of Mollongghip that comprises a number of dwellings of small and large lots and a rural fire station. The township is characterized by lots varying in size from 5000 square metres 1-2 hectares an there is currently eleven (11) dwellings within 200 metres of the subject site. The existing farming pursuits in the immediate area comprise mainly potato growing and other cereal types. There is very little grazing of sheep or cattle.

The site itself is part of a subdivision that occurred in the 1970s where a total seven (7) lots were created from two original crown allotments, with Lot 7 (No. 381 Mollongghip Road) already containing a dwelling and outbuildings.

The inclusion of another dwelling in the small rural township will not only benefit the owners, but the whole community by establishing the township as an area where new people wish to live and contribute to the rural lifestyle the community samples.

5.3 Infrastructure

A dwelling is proposed to be constructed on the site, located towards the front of the property. Prior to the development of this dwelling, no significant infrastructure is located on the site. Reticulated electricity is available along Mollongghip Road. Water tanks are proposed as part of the development, which will collect rainwater run-off from the roofed surfaces, and will provide potable water to the dwelling. All the water tanks will be fitted with appropriate fire-fighting connections to allow water to be used by emergency services in the event of a wildfire. All effluent will be contained and treated on-site via an approved septic tank system, which will be situated close to the dwelling. Water saving devices will be installed throughout the dwelling to minimise the amount of effluent generated, and low sodium and low phosphorous detergents will be used to maintain soil properties.

5.4 Topography, Geology and Soils

According to Victorian Resources Online (DPI), the subject site is located within the Victorian Volcanic Plain which is dominated by Cainozoic volcanic deposits. These deposits formed an extensive flat to undulating basaltic plain with stony rises, old lava flows, numerous volcanic cones and old eruption points and is dotted with shallow lakes both salt and freshwater. The soils are variable ranging from red friable earths and acidic texture contrast soils on the higher fertile plain to scoraceous material, and support Plains Grassy Woodland and Plains Grassland ecosystems. Calcareous sodic texture contrast soils grading to yellow acidic earths on the intermediate plain, and grey cracking clays on the low plains, support Stony Knoll Shrubland, Plains Grassy Woodland and Plains Grassy Wetland ecosystems. On the stony rises (volcanic outcropping) the stony earths support Stony Rises Herb-rich Woodland, Basalt Shrubby Woodland and Herb-rich Foothill Forest ecosystems.

The subject site is relatively flat. There are no designated waterways or drains that run through the property and there is no native vegetation on the site. The cleared areas contain pasture grasses and the site is largely free of invasive weed species.

5.5 Flora and Fauna

The Ecological Vegetation Class (EVC) natural to this area is herb-rich Foothill Forest (EVC23). The description of the ecosystem occurs on relatively fertile, moderately well-drained soils on an extremely wide range of geological types and in areas of moderate to high rainfall. Occupies easterly and southerly aspects mainly on lower slopes and in gullies. A medium to tall open forest or woodland to 25 metres tall with a small tree layer over a sparse to dense shrub layer. A high cover and diversity of herbs and grasses in the ground layer.

The majority of the surrounding land has been largely cleared of any significant vegetation. There will be additional native vegetation planted on the subject site to assist in the creation of wildlife corridors and protection screening from the roads and adjoining properties.

The roads in the area have very little remnant vegetation.

5.6 Climate

The average monthly rainfall, evaporation rates and months of effective rainfall are shown in the table below. The data is from the Bureau of Meteorology for the Ballarat station located approximately 25 km to the west.

	Rainfall (mm)	Evaporation Rate mm	Effective Rainfall
January	43	204	
February	44	176	
March	37	124	Yes
April	55	75	Yes
May	77	47	Yes
June	68	27	Yes
July	77	28	Yes
August	87	43	Yes
September	73	66	Yes
October	78	105	Yes
November	60	126	Yes
December	46	152	
Average	745	1174	

Annual rainfall is approximately 750 mm and a yearly evaporation rate of approximately 1200mm. This should be adequate rainfall to provide sufficient stored water for household requirements. The wetter months are between May and September where the rainfall exceeds the evaporation rate.

The average maximum and average minimum temperatures are shown in the table following. The data is from the Agnote 1044/80 Climate of the Ballarat District.

Month	**Average Maximum** C	**Average Minimum** C
January	26	11
February	25	12
March	22	10
April	18	8
May	13	6
June	11	4
July	10	3
August	11	4
September	14	5
October	17	7
November	19	8
December	22	10

The planned crops of vegetable and planting of fruit trees are suited to the climate. These types of produce has been successfully grown in the district for many years. The average minimum monthly temperatures between May and September are below 7C.

Winter frosts will occur. Snow would be a rare occurrence. There is little protection to reduce the effect of wind on the property.

6. Proposed Enterprise

The applicant proposes to grow a variety of herbs, vegetables and fruits.

6.1 Herb and Vegetables

The owners are currently growing a number of organic heirloom herbs and vegetables and herbs in their current place of residence. The proposed growing of herbs and vegetables on the subject site will be conducted in 25 x 1.0 metre wide by 10 metre long garden beds with 1.0 metre spacings to allow for waling and maintaining of the garden beds and these will be located at the rear of the site. The types of herb and vegetables to be grown are as follows:

Herbs:

- Parsley (*Petroselinum crispum)* – The delicious and vibrant taste and wonderful healing properties of parsley is highly nutritious and can be grown all year round.
- Chives (*Allium schoenoprasum)* – Close relative to onion, leeks and scallions. Chives are a hardy plant that can survive cold winters and will cope with drought and wet weather. They are a perennial that will regrow after cuttings. Chives will grow in early spring, sprouting a slightly mauve coloured flower.
- Purslane (*Portulaca oleracea*) - The young shoots are fleshy, slightly tart and mucilaginous, and provide a salty tang to any salad. Lightly steamed, or wrapped in foil and thrown into the coals or on the barbecue, it is delicious with butter and pepper, making it an excellent “greens”. The leaves are rich in vitamins C and A, with some B vitamins as well. The tartness is due to oxalic acid, which cooking destroys, so people with rheumatism or gout should avoid eating it uncooked.
- Basil (*Ocimum basilicum*) - s native to tropical regions from central Africa to Southeast Asia. It is a tender plant, and is used in cuisines worldwide.
- Lemon Balm (*Melissa officinalis)* is a perennial herbaceous plant in the mint family Lamiaceae and native to south-central Europe, the Mediterranean Basin, Iran, and Central Asia, but now naturalized in the Americas and elsewhere. It grows to a maximum height of 70–150cm.
- Creeping Thyme (*Thymus serpyllum*) - is a creeping dwarf evergreen shrub with woody stems and a taproot. It forms matlike plants that root from the nodes of the squarish, limp stems. The leaves are in opposite pairs, nearly stalkless, with linear elliptic round-tipped blades and untoothed margins.
- Marigold (*Tagetes*) - is a genus of annual or perennial, mostly herbaceous plants in the sunflower family.
- Coriander (*Coriandrum sativum*) is an annual herb in the family Apiaceae. It is also known as Chinese parsley.
- Calendula - Calendula species have been used traditionally as culinary and medicinal herbs. The petals are edible and can be used fresh in salads or dried and used to color cheese or as a replacement for saffron. A yellow dye has been extracted from the flowers.
- Dill (*Anethum graveolens*) is an annual herb in the celery family Apiaceae. It is the only species in the genus Anethum. Dill is grown widely in Eurasia where its leaves and seeds are used as a herb or spice for flavouring food.
- Rocket (*Arugula*) - is an edible annual plant in the family Brassicaceae used as a leaf vegetable for its fresh, tart, bitter, and peppery flavour.

- Marjoram (*Origanum majorana*) - is a sweet, aromatic herb related to oregano, used in a wide variety of cuisines. It has a subtle, fruity flavor that's commonly used in French and Italian herb blends, and in sausages and sauces from Northern Europe.
- Saffron is a spice derived from the flower of Crocus sativus, commonly known as the "saffron crocus". The vivid crimson stigmas and styles, called threads, are collected and dried to be used mainly as a seasoning and colouring agent in food. Saffron, long among the world's most costly spices by weight.
- Sage (*Salvia officinalis*) - s a perennial, evergreen subshrub, with woody stems, grayish leaves, and blue to purplish flowers. It is a member of the mint family Lamiaceae and native to the Mediterranean region, though it has naturalized in many places throughout the world.
- Rosemary (*Rosmarinus officinalis*) - is a woody, perennial herb with fragrant, evergreen, needle-like leaves and white, pink, purple, or blue flowers, native to the Mediterranean region. It is a member of the mint family Lamiaceae, which includes many other herbs.
- Cayenne (*Capsicum annuum*) - It is usually a moderately hot chili pepper used to flavor dishes. Cayenne peppers are a group of tapering, 10 to 25 cm long, generally skinny, mostly red-colored peppers, often with a curved tip and somewhat rippled skin, which hang from the bush as opposed to growing upright
- Oregano - is a flowering plant in the mint family. It is native to temperate Western and Southwestern Eurasia and the Mediterranean region.
- Sweet Paprika - is a ground spice made from dried red fruits of the larger and sweeter varieties of the plant

Caring for herbs isn't much different from watching out for your other annuals and perennials, but herbs may have a few special requests. Although each type of herb has its own growing requirements, most herbs are unfussy plants. Most prefer full sun. Most prosper in good, moderately fertile soil. And most require that the soil be well-drained so they get the moisture they need to grow but don't suffer from wet feet.

Vegetables:

There are to be number of different vegetables grown on the property and they range from Tomatoes, Zucchini, Eggplant, Celery, Corn, Chilli, Carrots, Capsicum, Cucumber, Cauliflower, Cabbage, Beans, Peas, Beetroot, Brood Beans, Pumpkin, Squash, Parsnip, Lettuce, Watermelon, Rockmelon, Onions, Okra, Garlic, Spring Onions, Egyptian Walking Onions, Shallots, Sunflowers, Snow Peas, Spinach, Silverbeet, Globe Artichoke, Jerusalem Artichoke and Rhubarb.

Examples of seasonal production times for some crops:

Warm/cool season crops: some of these can be grown 12 months of the year depending on the regional climate, or may not be suited to winter or summer production in specific regions due to the cold winter or hot summer resulting in poor quality. Broccoli, cabbage, cauliflower, pea, onion, leek, celery, parsley, spinach, parsnip, lettuce, asparagus, carrots, snow pea, and pea.

Warm season crops: these may be frost sensitive or not suited to high heat Beans, sweet corn, squash, cucumber, and potato.

Warm season crops: that have a high heat requirement and are frost sensitive. Melons, pumpkin, squash, eggplant, capsicum, tomato, and cucumber.

The owners intend to use a greenhouse to allow for continual growing all year round. The hot house measure 6.0 metres long by 3.0 metres wide and 3.0 metres high. The hot house will be aluminum framed and will be covered in 4mm perspex and will comprise windows to allow for air circulation. It is to be used mainly during the winter months to allow for propagation and protection.

6.2 Fruits

The proposed fruits are to be planted along the perimeter of the property situated 2 to 3 metres inside the fenceline. This will allow for easy access for trimming and maintaining underneath the trees. The type of fruit trees to be planted range from Lemon, Feijoa, Mulberry, Plum, Peach, Pear, Nectarine, Orange and Mandarin. Other fruits include Kiwi Fruit, Passion Fruit, Grapes, Raspberries, and Blackberries that will be planted along the fences. Strawberries will be planted in pots close to the proposed dwelling.

It is also proposed to grow trees that will produce Pistaccio nuts, carob, Peppercorns and Bay leaf.

Fruit trees are somewhat fussy about where they're planted. If you were planting a large commercial orchard, site selection would be critical. But for a small home orchard, your best bet is to take a handful of variables into account, select the most promising site on your property, and then plant a couple of trees and give it a try.

Soil: Fruit trees don't like wet feet, so well-drained, loamy soil is a must. They should be located where there is good air circulation so their leaves will dry quickly, since moisture helps spread disease.

Frost: Flower buds can be easily killed by late spring frosts, so avoid siting your orchard in a frost pocket. Cold air flows downhill, making flowering fruit trees located at the bottom of a slope especially vulnerable to frost. Mid-slope is the best location, because winds are most severe at the top.

Slope direction: Which direction the slope should face is not always clear. Southern and southwestern slopes can be hot and dry, and can cause trees to break dormancy too early, which makes them susceptible to damage from late frosts. Yet a southern slope can work well if it is protected from the prevailing winds by a windbreak on any side except the downslope one (which would block air circulation). A northerly slope may not provide enough solar exposure to evaporate moisture and promote good fruiting. In humid regions, easterly slopes can speed drying of the morning dew.

Sun: Fruit trees need a lot of sun to grow healthy and be productive. If they are shaded by other trees or a building they will be less fruitful and more prone to insects and -disease.

Many varieties of fruit trees and shrubs are self-fruitful: that is, they do not need to have a plant of another variety nearby with which to cross-pollinate. Other varieties (particularly those of fruits) need to have a partner in the orchard so that they will be pollinated and produce a good crop of fruit. In fact, even self-fruitful varieties often benefit from having a different variety of the same plant located nearby.

7. Farm Management Plan

7.1 Annual Farm Plan

Herbs and Vegetables:

Feed the soil and the soil feeds the plants. Healthy soil promotes healthy plants that are more capable of resisting insect and disease problems. Feed the soil with plenty of compost and well-aged manure. **No chemicals** are to be used for the vegetables and herbs.

Control weeds: Weeds are a problem in and of themselves, but they also harbor insects and disease. If you weed regularly, particularly at the beginning of the growing season, it should be relatively easy to keep weeds at bay.

Take out the dead: Get rid of rotting or dead vegetation such as leaves, pulled weeds and plant stalks. Dying vegetable matter can be a haven for pests.

Disinfect your tools: Keep diseases out of your garden by routinely disinfecting your tools. This is doubly important if your tools come in contact with diseased plant parts.

Stay cool: When heat strikes, provide shade to your plants to keep them from wilting.

Provide support: There are several benefits to using plant supports such as trellises, stakes, A-frames and tepees:

- It increases the space in your garden.
- Gives plants more exposure to light.
- Circulates air.
- Makes it easier to prune and harvest.

Pick: Harvest vegetables as soon as they are ripe and remove harvested plants. If they are disease-free, add them to the compost pile, or, if appropriate, re-work into the soil.

Keep it clean: Remove and destroy the diseased parts of plants to protect your healthy ones. Find out how much of the plant you need to remove. Sometimes just taking off diseased leaves is sufficient. Depending on the infection, you may have to remove the entire plant.

Fruits:

Cleanup: Maintaining a clean orchard means picking up after your trees. Fruit that drops to the ground can contain insect larvae, which burrow into the soil where they overwinter, to reemerge in the spring. These drops also attract voles and mice, which can damage trees by chewing on the bark. Pick up the dropped fruit and burn or bury it underground far away from your trees. Pick up the fruit as soon as possible after it drops to catch the larvae before they burrow into the ground. It's especially important to collect the spring drops, which are still quite small but can contain a large number of larvae.

While you're picking up dropped fruit in the fall, also clean up fallen leaves, which can likewise harbor disease and insects.

Pruning: Pruning is a subject unto itself. Certainly you will want to learn the basics and practice selective pruning of your fruit trees and shrubs on a yearly basis, removing crossing branches, suckers and watersprouts; opening up and reinvigorating older plants; and allowing good air circulation to prevent disease.

Insect and disease control: If you follow good cultural practices and select disease-free trees and shrubs, you should be able to keep most common orchard pests and diseases in check without the use of chemicals. But to grow fruit organically, you will need to tolerate some degree of pest and disease damage. If you were to prevent all insect and disease damage, you would need an arsenal of toxic sprays—something no one wants to use around the home landscape.

One strategy is to attract beneficial insect predators to your orchard by planting wildflowers and herbs, including dill, buckwheat, tansy, yarrow and goldenrod. Another way to reduce certain kinds of insect damage is to trap pests using simple, visual lures.

There are also many biological sprays that can be used in the orchard at key times to disrupt insect cycles. The owners intend to use **no chemicals** on the fruit trees.

Simple physical barriers serve to keep many animal pests from damaging trees and fruit. These range from wire mesh or plastic tree guards set around young trees to protect them from mice and rabbits, to smelly soap hung on branches or tall fences erected around the orchard.

By combining preventive measures with the least toxic controls, you can have a healthy orchard and still harvest lots of good-quality fruit for eating.

8. Economic Analysis

The development of the proposed farming enterprise will require an initial investment by the owner. Costs which will be incurred as part of the farming enterprise include:

- Proposed shed
- Construct the dwelling
- Electricity to the dwelling and shed
- Provision of water (tanks, piping, troughs, pump)
- Purchase of plant stock
- Greenhouse
- Machinery and equipment to maintain the garden beds
- Fencing materials for site

It is assumed that the owner's labour at zero cost to the enterprise and no cost has been included for the cost of the land. The following assumptions have been made in preparing this analysis:

- The site does not suffer from any climate events
- Sufficient water is available from rainfall
- The management of the facility is always necessary

The costs associated with the farming enterprise:

- Shed - $10,000
- Dwelling - $85,000
- Irrigation and pumping system - $3,000
- Purchase of stock (initial) - $1,000 (cost reduced with harvesting seeds)
- Greenhouse - $400
- Machinery - $2,000

The produce that has been grown on site will provide some income to the owners. This will be pursued through the following methods:

- Local and regional markets on weekends;
- Production of jams from fruit trees and sold at markets;
- Sale of fresh produce to local grocery stores in Hepburn and Daylesford.

These returns should be sustainable without compromising the environment.

9. Summary

The establishment and maintenance of the proposed farming enterprise will require extensive management activities from the owners. It is considered that a dwelling is required on the site to allow the owners to carry out the abovementioned management activities. Farm management activities will need to be carried out on a daily basis. It is not economically viable for a site owner to live off-site and travel daily to and from the site.

10. Conclusion

From the economic and strategic analysis of the proposed enterprise, it can be concluded that:

1. The farming enterprise is suited to the capability of the site.
2. The dwelling is required to increase the efficiency of the farming operation in the Mollongghip area.
3. The dwelling has been sited to maximize the use of the land for agriculture.
4. There will be no off site impacts from the dwelling and agriculture conducted at this site.
5. The farming enterprise can be developed which is consistent with the special requirements of the water catchment region.

There will be no adverse impact on adjoining or nearby farms and rural land uses.

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James Iles
Town Planner

APPENDIX A - FARM MANAGEMENT PLAN

LEGEND

- Property boundary
- Subject site
- Existing vegetation
- Existing shed
- Existing dwelling
- Existing Dam
- 10m Contours
- Fall of the land

N

Date: 5 August 2019
Drawn: JI
Prepared for: iPlanning Services
Note: All dimensions/areas are approximate only and should be confirmed on site.

Existing Conditions Plan

Development of Farming Enterprise – Herb, Vegetable and Fruit Growing

399 Mollongghip Road, Mollongghip

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LEGEND

- Proposed Chook House
- Proposed Dwelling
- Proposed Shed
- Proposed Tanks
- Proposed driveway
- Proposed Fruit Trees
- New Native Trees
- New Fencing
- 10m X 1m Vegetable/Herb garden beds
- Effluent area
- Proposed new driveway
- 6m x 3m Greenhouse

N

Date: 5th August 2019
Drawn: JI
Prepared for: iPlanning Services
Note: All dimensions/areas are approximate only and should be confirmed on site.

Farm Management Plan

Development of Herb, Vegetable and Fruit Growing

399 Mollongghip Road, Mollongghip

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