FERGUSON
FARMSTAY

PROPOSAL FOR CONSTRUCTION OF DAM AT FERGUSON FARMSTAY

Overview of Ferguson Farmstay

Ferguson Farmstay is a family-owned hospitality business located in Henty. Since its inception in 1994, Ferguson Farmstay has grown to become one of the most popular venues in the Ferguson Valley. It has 10 self contained chalets, a function centre, amphitheatre and extensive grounds. It provides farm activities to its guests and is home to a range of farm animals for the guests to interact with. Ferguson Farmstay entices many families to visit the Ferguson Valley and surrounding areas.

Matters the Shire will consider

The matters that the Shire will consider in assessing an application for dam construction are addressed below.

1. **Whether there is a demonstrated need for a dam**

    a. The purpose of the proposed dam is to:

        a. improve water quality of the existing dam by reducing demands on its use;

        b. provide water for livestock;

        c. provide non-potable water for guest use, primarily toilets;

        d. improve the natural flow of Paradise Creek through increased release of water from the existing dam; and

        e. provide water for irrigation of the Farmstay grounds.

    b. The purpose of the proposed dam is **not** to increase water consumption.

    c. The existing dam has high demands placed on its use, particularly in the summer months due to irrigation requirements.

    d. Currently, by the end of summer, the water level in the existing dam has reduced dramatically, which means the water quality deteriorates and there is insufficient storage to allow water to bypass until much later than the natural season break. The poor quality water fouls pumps and sprinklers as well as causes suction issues in the main pump.

    e. The proposed dam will not collect water from a creek or watersource, but instead will fill from runoff that is not currently collected. It will therefore not impact water collection in the existing dam.

    f. Constructing the proposed dam will:

        a. allow the existing dam to fill and overflow more quickly, which will allow release of more water into Paradise Creek. This will encourage natural flow of Paradise Creek for a greater proportion of the year and promote biodiversity in the creek area;

        b. provide clean, high-quality non-potable water for guest use, particularly in the chalet toilets. Muddy or dirty water stains the guest toilets and is unsightly;

        c. provide clean, high-quality water for livestock via stock troughs; and

        d. facilitate business improvement of Ferguson Farmstay through maintaining sufficient irrigation of grounds and improved guest amenity through increased water level and improved water quality of the existing dam, which will become an appealing and safe area for families to enjoy year round. These business improvements are discussed below.

    Business improvements

g. Ferguson Farmstay's income is entirely dependent on the tourism industry. Guests come to the Farmstay for the purpose of relaxation and recreation. Over the years it has been apparent that the gardens, lawns, trees, recreational activities and general appearance of the Farmstay are very important. For this, sufficient water for irrigation and amenity is required.

h. As Ferguson Farmstay has developed, the irrigated area has expanded to reduce the risk of bushfire as well as to provide a beautiful environment for guests. The irrigated area requires significant resources to maintain, one of which is water.

i. Constructing the proposed dam would allow the existing dam to be used in the later summer months as a guest amenity for activities such as fishing and canoeing. Currently in late summer, the low water levels are unappealing for guests and steep muddy exposed banks are unsafe for guest access.

2. Does the size relate to the capability and catchment of the site and its intended use?

a. The dam is not proposed to be constructed on a watercourse or creek~~,~~ but is intended to dam a gully between two steep hills from which it will catch the stormwater runoff.

b. The dam has been designed to fill from the intended catchment area without relying on additional water sources.

c. Based on the current water demands outlined above, the size of the proposed dam is the minimum size necessary to achieve these demands.

d. The dam's location and size have been chosen to preserve existing vegetation and minimise impacts on the neighbouring property. In designing the dam, several established native trees have intentionally been preserved and its backwater is located 112.83 metres from the boundary fence, meaning that adjoining land will be unaffected.

3. Excess storm water, flow of creek or watercourse

a. Any likely reduction of the natural flow of any creek or water course to downstream properties.

i. The dam is not proposed to be constructed on a watercourse or creek and it is not intended that water consumption will increase following construction of the proposed dam. Therefore construction of the dam is not likely to inhibit the natural flow of existing watercourses/creeks.

ii. The proposed dam will allow water to be released from the existing dam earlier in the season than is currently possible. This will improve the consistent flow of Paradise Creek which will benefit downstream properties and the natural biodiversity of the creek area.

b. The impact of directing storm water or other water to a creek/watercourse/wetland.

i. The proposed dam will not direct any additional storm water or other water to Paradise Creek. Water that is released from the proposed dam will follow the same natural course as if the dam were not constructed.

c. Will all excess water be returned to the watercourse within the property boundary?

i. Yes. All excess water, including scour valve and spillway will flow naturally to Paradise Creek within the lot boundary as is currently the case.

d. Whether stormwater flows will be able to be contained within the lot boundaries.

i. The stormwater and other water flows will flow naturally to Paradise Creek as is currently the case. Paradise Creek naturally flows through the lot and on into the adjacent lot.

4. Does it avoid or minimise visual and environmental impacts, including to any vegetation?

a. Water from the proposed dam will be used to irrigate the creek line below it during the summer months. This will allow for revegetation of the creek line which will have the following effects:

i. Erosion control;

ii. Promotion of the habitats of native plant and wildlife;

iii. Increased survival rate of native trees and vegetation; and

iv. Reverse the naturally declining numbers of native trees on the property.

b. Native trees will be planted along the creek line below the proposed dam and along Paradise Creek to assist the natural revegetation process.

c. The proposed dam and creek line below will be fenced off from the public and livestock for their own safety, as well as to prevent damage to vegetation and destruction of the habitat of local flora and fauna.

d. The location of the dam has been chosen to minimise impact on existing vegetation. In particular, to preserve a number of established marri trees.

5. Is the spillway designed to cater for a 1 in 100 year storm event?

a. The spillway has been designed to accommodate a 1 in 100 year rain event through adhering to standard engineering practices such as:

i. Stone pitching;

ii. Control of water flow velocity; and

iii. Adequate size of the spillway area.

b. Overflow will primarily be managed through constant monitoring and consistent release of water through the underwall pipe.

6. Do all batters and water ponding achieve the relevant setbacks from lot boundaries?

a. The lot on which the dam is proposed is zoned "tourist". There is no prescribed setback in the local scheme for a tourist zoned property.

b. Construction of the dam will not impact adjoining land.

c. In the design plan, the backwater of the dam will flood no closer than 112.83m of the closest adjoining land. The dam will have no consequences on the adjoining land.

7. Construction techniques and siting that minimises any potential for dam failure.

a. The following construction techniques are proposed to prevent any potential for dam failure:

i. <u>Design phase</u>

1. Soil testing to find suitable material capable of achieving compaction standards.

2. Incorporation of a spillway capable of handling 1 in 100-year flood.

3. All relevant design standards applying to dam construction to be incorporated into design.

ii. <u>Construction phase</u>

1. Construction of the dam undertaken by a reputable construction company.

2. Surveyors to visit site before and during construction to monitor layout and ensure accurate compliance with design plans.

3. Consistent supervision of construction to ensure compliance with design plans.

iii. <u>Maintenance phase</u>

1. Consistent monitoring and release of water to minimise spillway overflow and keep water fresh.

2. Revegetation of the batter slopes to minimise scouring especially in the first season following construction.

8. All spoil from dam construction and earth works that does not form part of the dam must be levelled on the property.

a. All unsuitable material from construction of the dam will be dispersed according to the natural contours of the land and revegetated.

b. It is anticipated that some of the unsuitable material will be black loamy topsoil which will be a valuable resource for encouraging revegetation.

Additional criteria relevant to an application for Development Approval:

1. **Bushfire assessment**

    a. SPP3.7 is not applicable as the proposed dam does not introduce a bushfire hazard.

    b. The proposal requires earthworks only and does not involve any flammable infrastructure.

    c. The dam would have excellent road access for a fire truck and would be an asset to the community in the event of a fire.