
PHILLIPS
AGRIBUSINESS

LAND MANAGEMENT PLAN

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24 Churchill Road, Newhaven

Phillip Island

**Phillips Agribusiness
66 Linacre Road
Hampton Vic 3188**

January 2024

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1.0 INTRODUCTION

The property is 40.1 ha in size and located at 24 Churchill Road, Newhaven. Approximately half of the land area is suited to agriculture while the remainder comprises low lying flats that are susceptible to intermittent waterlogging and salinisation. They are unsuited to productive agriculture but responsive to conservation management. A more complete description of the property is provided in a Land Capability Assessment completed in July 2021¹.

A planning application has been lodged to construct a National Vietnam Veterans Museum on the eastern section of the site. The current collection is located at 25 Veterans Drive but there is a limitation in space and facilities. The new site allows for the relocation and establishment of a purpose built and expanded museum for the NVVM.

This report is a Land Management Plan which includes the museum buildings, landscape setting and agricultural area of the site. The museum complex is fully described in other consultant reports and includes land forming, water management, vegetation enhancement and landscape planning. The division between the museum environment and agriculture is based on the natural feature characteristics of the site. These are fully described in Section 2.

2.0 NATURAL FEATURE CHARACTERISTICS

2.1 Climate

Climatic patterns in the district are temperate. Average annual rainfall is approximately 700mm with the distribution being higher through the autumn, winter and spring months. The commencement of the plant growing season is determined by the autumn break, normally April-May. Growth continues through winter but with a cessation in July-August due to low soil temperatures and peaks during the spring months. Growth usually ceases during the summer period when rainfall is low and temperatures high. It is a growth pattern that suits pastures and crops.

2.3 Soils

The soils within the property include two mapping units², Merricks and Flinders. The main mapping unit on the higher elevations is Merricks. The soil profile is a light brown fine sandy clay loam topsoil to a depth of 100mm, with a buckshot layer overlying the clay subsoil. The subsoil occurs as a mottled brown medium clay at 300-350mm.

The Flinders soil unit is similar to Merricks except the surface profile is a dark brown silty clay loam with an increasing clay proportion with depth. These soils tend to occur on the lower elevations and are subject to salinisation due to poor drainage conditions.

Nutrient deficiencies for both soils are phosphorous and potassium and likely trace element deficiencies in copper and molybdenum. Soil pH is moderately acid at 5.3-5.5. Soil fertility levels are moderate to low.

2.4 Vegetation

The property is largely cleared of native vegetation with remnants remaining as shelter belts or along access tracks. Tree species include Swamp Paperbark, Drooping She-oak and Swamp Gum. The cleared pasture areas have been sown down to improved pasture species

¹ Land Capability Assessment, Phillips Agribusiness July 2021

² Soils and landforms identified and mapped by Agriculture Victoria

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including Perennial Ryegrass and Subterranean Clover but regression to volunteer species such as Yorkshire Fog, Creeping Bent, Couch Grass is extensively occurring. Some native grasses remain including Wallaby Grass and Weeping Grass. The saline areas are distinctive in their location and comprise a coastal saltmarsh with vegetation species including Bearded Glasswort, Common Swamp Wallaby Grass and Native Rushes.

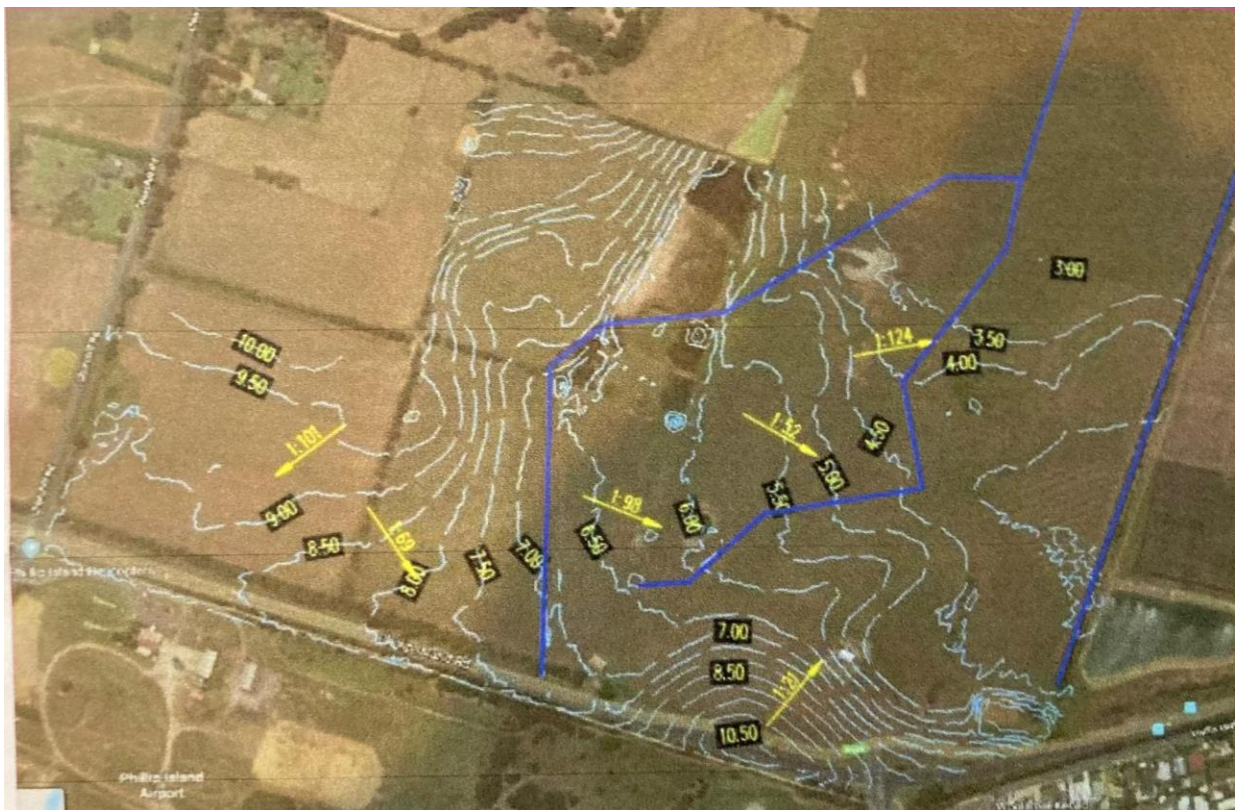
2.5 Landform and drainage

The landform of the site is gently undulating plain. The western section occurs as a low hill which slopes to the east to end in low lying, poorly drained saline wetlands. At the intersection of slope between west and east, several catchment dams have been constructed collecting water runoff from the southern and western catchments.

There are three open channel drains that service the site. The western channel conveys runoff from the major catchment area south of Phillip Island Road and directs it north through the property. There is also an internal central channel and another main drain outside of the eastern boundary that collect flows, directing them north into Fisher's wetland. Westernport Bay is the final outfall for all three drains.

Figure 1 shows the contour and drainage pattern³ for the property. The blue lines are the three drainage channels earlier described. Contour characteristics and the existing drainage pattern are key features determining the boundary between agriculture and the museum development.

Figure 1: Property contours and drainage patterns



³ Stormwater Management Strategy Report, TTW August 2021

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2.6 Land capability

The planning application proposes to use part of the land for the purpose of a museum with the balance to remain in agricultural use.

The museum development involves the establishment of a purpose built and expanded architectural building set in an expansive landscape setting. The key requirements include a suitable location for establishing the building and its surrounds, the creation of an attractive landscape setting, an extension of the wetlands, vegetation retention and enhancement, and appropriate storm water management.

Agriculture on the other hand requires suitable soils for crop and pasture production, a rolling landform that is well drained, sufficient area to practice commercial farming and the availability of adequate water resources, including reticulated supply. It needs to be able to demonstrate environmental sustainability.

Figure 2 shows the division between the two uses. The museum complex is to be located on the eastern half of the property. The building development occurs near the southern boundary on rising slopes while the wetlands are to the north and to be managed through water control, vegetation regeneration and landscaping.

Agriculture is located on the western portion of the site where the contour is rising and soils flexible in their grazing and cropping use.

3.0 LAND MANAGEMENT PLAN

3.1 Existing conditions

The existing conditions are specific to the western agricultural area, estimated to be 17ha of utilisable grazing land. The land has previously been farmed as a commercial beef grazing enterprise.

The property comprises four paddocks of relatively equal size. They were originally sown down to introduced pasture species including Perennial Ryegrass and Subterranean Clover but regression to volunteer species such as Yorkshire Fog, Creeping Bent, Couch Grass has extensively occurred. Some native grasses remain including Wallaby Grass and Weeping Grass. A stocking rate estimate for existing pastures is between 13-15 dry sheep equivalents per hectare⁴ and for the area available, sufficient to support a herd of 30 weaner beef cattle.

The productivity levels of pastures can be improved through controlling weeds, raising soil fertility levels and introducing desired pasture species.

3.2 Property division

Figure 2 illustrates how the property can continue to accommodate grazing. It shows the division between the museum complex and agriculture through a new centrally located boundary fence to the west of the main drain. The fence line commences at the southern

⁴ Dry sheep equivalent is that amount of dry matter required by one mature wether per annum

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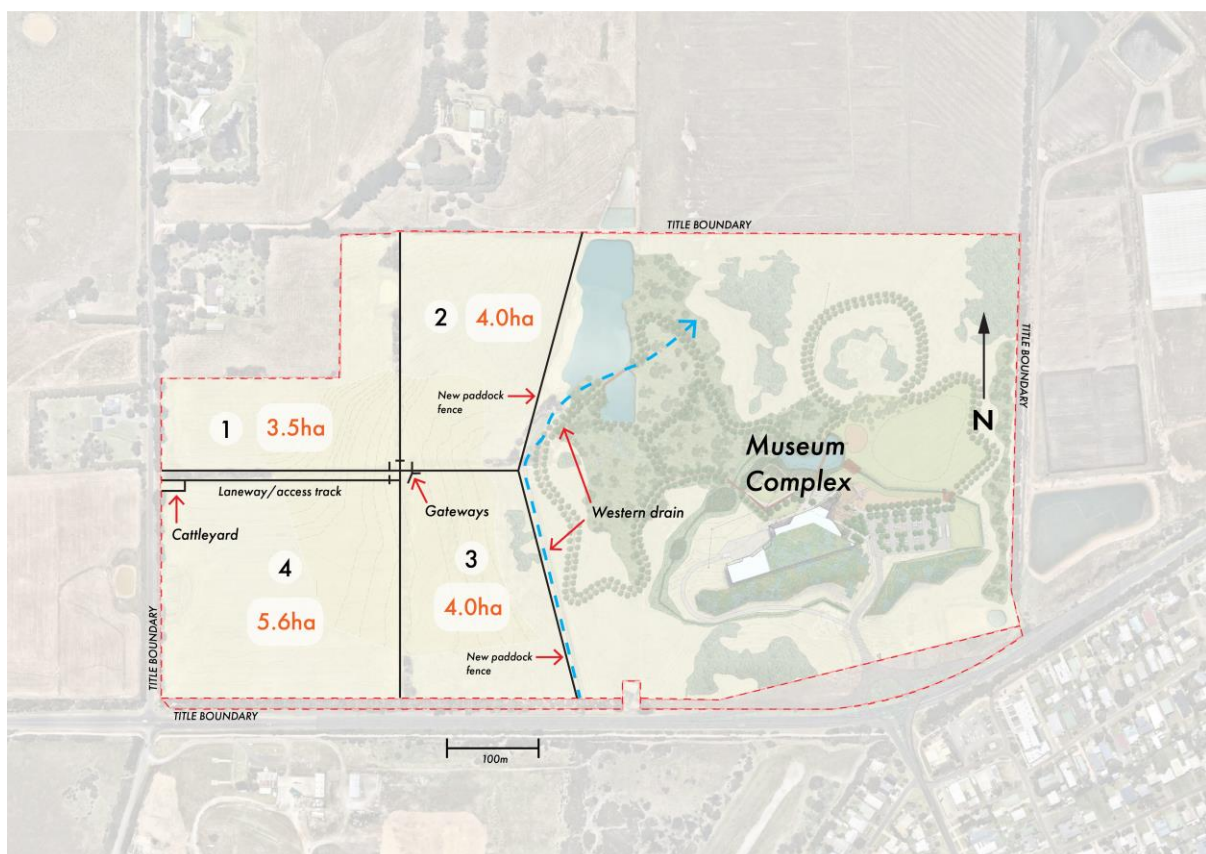
boundary, follows the western drain to the main water bodies, then angles north, lying west of the dams. This alignment respects both contour and drainage patterns. The agricultural area is approximately 17ha and the museum complex area, including dams, 23.11ha.

The internal paddock layout remains the same, albeit with the fences being subject to renovation and additional gateways required to facilitate livestock movement. A single electric outrigger is to be installed on all fences to achieve better stock control. The current paddock size is between 3.5-5.6 ha and sufficient to allow rotational grazing. Temporary electric fencing can be used to further subdivide paddocks for better pasture utilisation efficiency.

A set of cattle yards, either permanent or portable, is to be installed on the western boundary, with access to Churchill Road. The existing laneway will allow access from all four paddocks to the stockyards.

An additional facility is to install reticulated water to all paddocks. This is a necessary requirement to allow rotational grazing to be practiced.

Figure 2: Proposed property layout



3.4 Development principles

Any future agricultural development program is to be based on the following principles:

- To develop an intensive pasture grazing system where deep-rooted perennial grass species are introduced, soil fertility levels improved and controlled stocking practiced to achieve high pasture utilisation rates.

- The selection of a beef enterprise that is easy to operate and provides good economic returns.
- Raising environmental values through the renovation and renewal of existing plantations.
- Maintain high landscape values through layout design, productive pastures and complementary tree and shrub plantings.

Improved pasture productivity

- Improve soil fertility levels through correcting nutrient deficiencies and raising soil pH levels. The anticipated nutrient deficiencies are phosphorous and potassium with periodic lime applications to raise soil pH. Verification is required through soil testing.
- Improve the botanical composition of pastures through weed control, stocking rate control and rotational grazing. More productive perennial grass and clover species can be introduced through direct drilling. Under Best Management Practice a stocking rate of 20-22 dse/ha should be possible, equivalent to a weaner beef herd of 40.
- Upgrade paddock fencing where necessary to meet intensive grazing requirements. Reticulated water supply needs to be available to all paddocks.
- Practice fodder conservation for winter supplementation of the grazing enterprise.

Enterprise selection

The indicative farming system is to undertake a weaner beef fattening operation which requires the purchase of store animals in the late summer-autumn period for fattening throughout the winter and spring months. Expected sale is late spring-early summer at a live weight between 410-420 kg.

A small set of cattle yards would be required, best located off Churchill Road near the laneway. The management of this enterprise could be independent of the current owners, possibly through contracting with a local farmer.

Improving environmental values

Plantations have been established along most of the fence lines and laneways but are deteriorating in their condition and require attention.

Most of the tree species include Swamp Paperbark, Drooping She-oak and Swamp Gum. Many are in a mature state and require either pruning or replacement. Additional plantations may be required, potentially along the new western drain boundary fence.

Establishing deep rooted perennial grass species also raise environmental values through providing better water infiltration and therefore runoff control.

Photo 1 shows tree condition along the laneway while Photo 2 is a north-south fence-line plantation that requires pruning and tree replacement.

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Photo 1: Laneway plantation



Photo 2: North-south fence line plantation



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Figure 3 is the proposed site plan⁵. It shows the extent of existing retained vegetation within the agricultural area and the future revegetation program for the museum development. The hatched area to the west of the site may be subject to revegetation and contour rehabilitation should there be any soil removal.

Figure 3: Proposed site plan



4.0 SCHEDULE OF ACTIVITIES

The following Schedule of Activities lists the major farm tasks that would be required over the year, with their timing varying according to season and priority. Two seasons are listed, after which most of the development work is completed with the subsequent years being largely repetitive in the activities.

Action	Activity	Description	Timing	Action
2023 Pasture management				
1.1	Grazing & renovation	Controlled grazing of pastures Supplementary feeding winter & summer Pasture renovation of selected paddocks	All year July/Mar Jan/May	Manager Manager Manager
1.2	Fertiliser	Conduct soil tests across all paddocks Design fertiliser program & implement	Autumn Autumn	Contract Contract
1.3	Weed & pest control	Monitor infestation levels Apply corrective action when required	All year Seasonal	Manager Manager
1.4	Fodder conservation	Shut selected paddock up early spring Conduct harvest, silage or hay	September late Oct	Manager Contract
2023 Livestock Management				
1.5	Purchase	Buy store replacement weaner heifers or steers	Feb-April	Manager

⁵ Developed by Tract Consultants: December 2023

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1.6	Animal husbandry	Identification, internal & external parasite control vaccinations, Clostridial & Leptospirosis	Feb-May April-Sept	Manager Manager
1.7	Animal nutrition	Adequate pasture intake, supplementary feeding nutritional supplements	All year May-Sept	Manager As need
1.8	Sale	Sale of prime beef 18-20 months age	Dec-April	Manager
2023 Environmental values				
1.9	Tree replacement	prune/remove/replace aging trees	All year	Manager
1.10	Tree/shrub addition	Add/extend plantations & woodlots	Winter	Contract
1.11	Weed control	Woody weeds, chemical & mechanical methods	April-Dec	Contract
1.12	Grassy weeds control	Slashing-mechanical	Sept-Dec	Contract
1.13	Rabbit control	Warren fumigation & ripping, pindone poisoning	All year	Contract
2023 Infrastructure management				
1.14	Fencing	Boundary fence erection Fencing repairs & renovation	July All year	Contract Manager
1.15	Cattle yards	Erect new set of cattle yards	July	Contract
1.16	Reticulated water	Install pipeline & troughs to each paddock	July-Sept	Contract
2024 Pasture management				
2.1	Grazing & renovation	Controlled grazing of pastures Supplementary feeding winter & summer Pasture renovation of selected paddocks	All year July/Mar Jan/May	Manager Manager Manager
2.2	Fertiliser	Design fertiliser program & implement	Autumn	Contract
2.3	Weed & pest control	Monitor infestation levels Apply corrective action when required	All year Seasonal	Manager Manager
2.4	Fodder conservation	Shut selected paddock up early spring Conduct harvest, silage or hay	September late Oct	Manager Contract
2024 Livestock Management				
2.5	Purchase	Buy store replacement weaner heifers or steers	Feb-April	Manager
2.6	Animal husbandry	Identification, internal & external parasite control vaccinations, Clostridial & Leptospirosis	Feb-May April-Sept	Manager Manager
2.7	Animal nutrition	Adequate pasture intake, supplementary feeding nutritional supplements	All year May-Sept	Manager As need
2.8	Sale	Sale of prime beef 18-20 months age	Dec-April	Manager
2024 Environmental values				
2.9	Tree replacement	prune/remove/replace aging trees	All year	Manager
2.10	Tree/shrub addition	Add/extend plantations & woodlots	Winter	Contract
2.11	Weed control	Woody weeds, chemical & mechanical methods	April-Dec	Contract
2.12	Grassy weeds control	Slashing-mechanical	Sept-Dec	Contract
2.13	Rabbit control	Warren fumigation & ripping, pindone poisoning	All year	Contract
2024 Infrastructure management				
2.14	Fencing	Fencing repairs & renovation	All year	Manager
1.15	Maintenance	Yards, water supply	All year	Manager

5.0 SUMMARY AND CONCLUSION

This report is a Land Management Plan for the total area of the site. The eastern area is dedicated to the museum complex while the western section is to accommodate agriculture. The western drainage channel represents the division between agriculture and the museum

development. It is based on the natural feature characteristics of the site with topography, soil type and drainage patterns being the main ones.

The eastern section of the property is of low agricultural quality but well suited to the museum complex where land-forming, water management and landscaping promise to significantly improve environmental values. The western area is of average agricultural quality but can be retained under productive agriculture as the primary use.

The soils of the agricultural area are a light brown fine sandy clay loams topsoil overlying a clay subsoil. They are well suited to pasture production. Current pastures comprise mostly volunteer species where productivity levels are moderate but responsive to improvement through raising soil fertility levels, controlled grazing and new species introduction.

The land management plan provides for a weaner beef fattening enterprise which is common to the district. The infrastructure requirements include sufficient paddocks to enable rotational grazing, reticulated water to each paddock and a set of stock yards for livestock handling. Water and yards are currently not available and need to be installed.

Paddock plantations represent the main environmental contribution to the agricultural component of the property. Intended additions include pruning and tree replacement of existing plantations. A fence line plantation along the western drainage line may be established to improve landscape values.

A Schedule of Activities lists the major farm tasks that are required by year, with their timing varying according to season and priority. The responsibility of implementation is also noted.



Ray Phillips
Phillips Agribusiness
18 January 2024

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