NEW GISBORNE DEVELOPMENT PLAN

CONSERVATION MANAGEMENT PLAN

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1. INTRODUCTION

This Conservation Management Plan accompanies the New Gisborne Development Plan prepared for future residential development, approximately 50 kilometres north-west of Melbourne's CBD. The New Gisborne Development Plan was prepared pursuant to a Development Plan Overlay (Schedule 16) in the Macedon Ranges planning scheme.

Under this New Gisborne Development Plan the land is earmarked for residential subdivision ('the development'), incorporating community infrastructure, passive open space, natural environment areas and provision for vehicle, bicycle and pedestrian access.

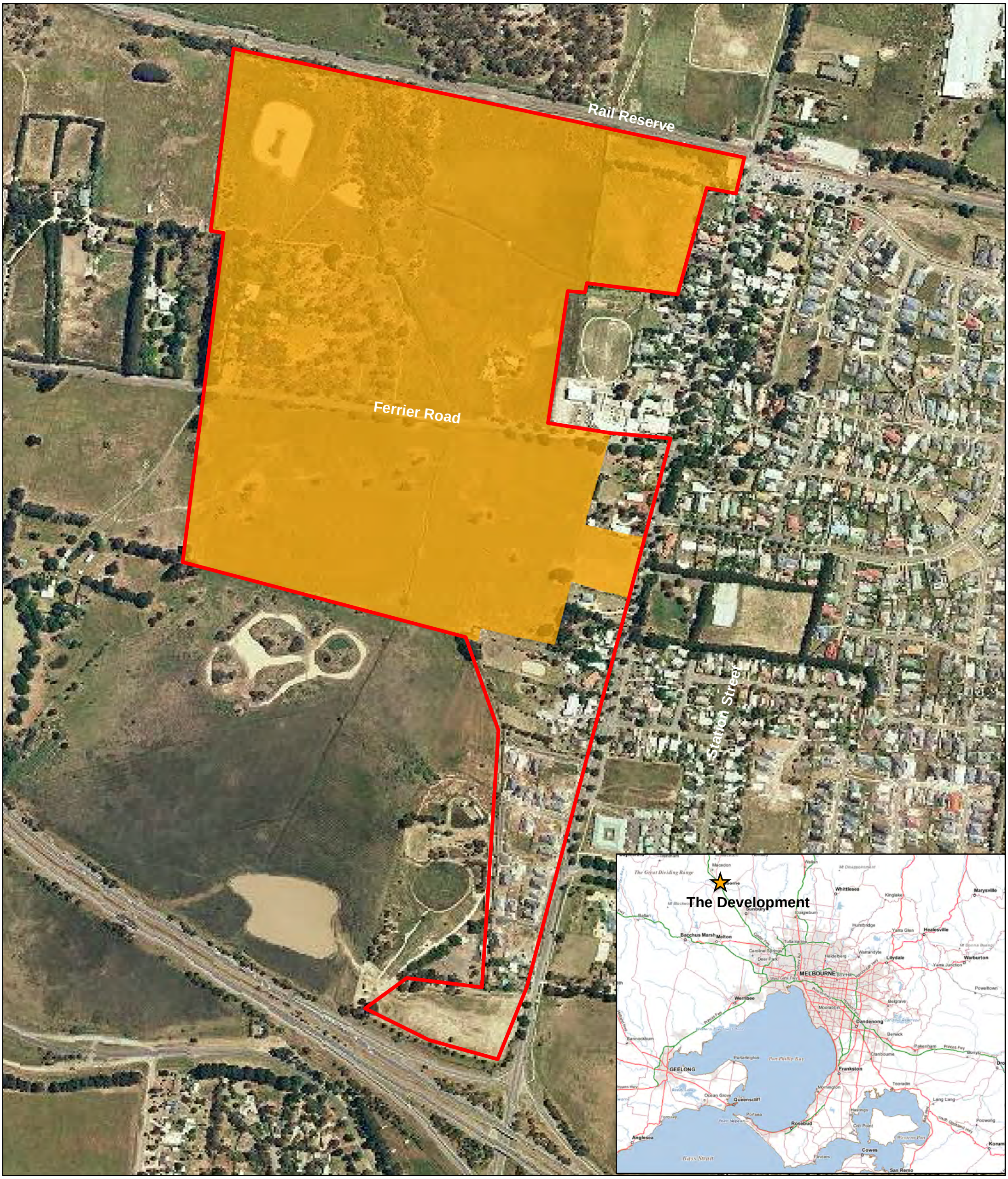
The configuration of individual components of the development outlined in the New Gisborne Development Plan (NGDP) has been developed to concept stage. This Conservation Management Plan (CMP) provides overarching conservation principles to guide future planning processes associated with establishment of the various elements of the development by providing objectives and strategies aimed at protecting environmental values through the design, construction and post-construction phases of development.

The development will advance in stages, and each stage of development will comply with the relevant aspects of this CMP in the preparation of management plans such as Construction Environmental Management Plans, Environmental Management Plans and, where applicable, Offset Plans.

The Gisborne Racecourse Marshlands Reserve immediately to the south of the development supports particularly significant environmental values and this CMP provides a comprehensive management framework to protect this resource.

A drainage reserve will connect the marshlands reserve in the south to a future retarding basin in the north of the development and will be managed by Melbourne Water. It will incorporate conservation elements and public open space.

The land covered by this CMP (Figure 1) is primarily 'greenfield' land characterised by fertile basalt soils and an average annual rainfall of more than 700 millimetres.



Legend

- New Gisborne Residential Development
- Development Plan Area

0 100 200 400 Metres

Figure 1: Area of the New Gisborne Development Plan addressed in this CMP

Project: New Gisborne Conservation Management Plan

Client: Collie Pty Ltd

Project No.: 13078	Date: 9/08/2013	Created By: M. Ghasemi / D. Coppolino

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2. OBJECTIVES AND SOURCES OF INFORMATION

2.1. Objectives of the Conservation Management Plan

The objectives of this Conservation Management Plan are to:

- Document environmental values of several environmental features of the development area;
- Provide measures to manage impacts on environmental values which may be directly or indirectly affected by the development;
- Ensure that the construction phase of the project does not result in the direct or indirect degradation of environmental values on and adjoining the construction zone;
- Ensure that environmental rehabilitation measures and habitat linkages are appropriately designed and implemented where required;
- Address the Conservation Management Plan requirements under Schedule 16 to the Development Plan Overlay in the Macedon Ranges Planning Scheme – Section 3.0: *Requirements for development plan*. These requirements include:
    - Consideration of the impacts of the development on flora, fauna and surface and groundwater hydrology of the Gisborne Racecourse Marshlands Reserve;
    - Identification of buffers between the edge of the swamp in Gisborne Racecourse Marshlands Reserve and habitat linkages through the development plan area, and the development interface;
    - Measures to be adopted to protect, enhance and manage identified environmental values of Gisborne Racecourse Marshlands Reserve from impacts of the development during pre-construction, construction and post-development;
    - Management actions and pre-construction/construction protocols for the development plan area to ensure there are no significant impacts on the Growling Grass Frog and migratory water birds, and their habitat and linkages, monitoring measures and ongoing management for the development plan area;
    - Methods to explain the environmental values of the Gisborne Racecourse Marshlands Reserve to the community and encourage responsible pet management, litter, rubbish and garden waste control.

2.2. Sources of information

The documents and resources listed below were reviewed for the preparation of this Plan.

- Macedon Ranges Planning Scheme – Schedule 16 to the Development Plan Overlay (DPCD 2010)
- The New Gisborne Development Plan (Hansen Partnership 2012)
- Racecourse Reserve Marshlands – New Gisborne Groundwater Assessment (Hyder 2009a)
- Ferrier Road New Gisborne – Flora and Fauna Assessment (BL&A 2008)

- Gisborne Racecourse Marshlands Reserve – Biophysical Assessment (BL&A 2009)
- Draft Report: Flora, fauna and Net Gain Assessment of the New Gisborne Development Plan area, New Gisborne, Victoria, (James *et al* 2012)
- Ferrier Road, New Gisborne: Peer Review of Ecology and Heritage Partners Flora & Fauna Assessment (BL&A 2012)
- Environmental Protection and Biodiversity Conservation Act 1999, Protected Matters Search Tool (DSEWPC 2013)
- Victorian Biodiversity Atlas (VBA 2013)
- Biodiversity Interactive Map 2.0. (DEPI 2013)

3. SUMMARY OF ENVIRONMENTAL VALUES AND RISKS

3.1. Environmental features and values

A number of important features are found within the New Gisborne Development Plan area and surrounds. This Conservation Management Plan describes the environmental values existing in each of these features, as well as environmental values these features may support once development is completed (such as Growling Grass Frog habitat). The important features addressed in this Plan are listed below and presented in Figure 2.

- The Gisborne Racecourse Marshlands Reserve immediately south of the development;
- Two future conservation reserves within the development;
- A number of large scattered remnant trees to be retained within the development; and
- A future drainage reserve and retarding basin within the development.

The boundaries of the features occurring within the development as shown in Figure 2 are indicative based on concept plans in the NGDP.

3.2. Risks to environmental values

Potential risks posed on environmental values during the pre-construction, construction and post construction phases of the development include:

- Impacts on flora and fauna;
- Impacts on surface and groundwater hydrology;
- Edge effects such as weed invasion, input of pollutants, litter and pedestrian/vehicle traffic;
- Loss of habitat linkages to other nearby habitat areas;
- Impacts on the fauna habitats during the pre-construction and construction phases of the development; and
- Post-construction impacts (legacy of the development on the environment) from the establishment of the new community, such as impacts from pets, litter, rubbish and garden waste.

Specific activities that may pose risks to environmental values are outlined below with reference to activity numbers and associated potential impacts outlined in Appendix 1.

Pre-construction

- Inappropriate design of drainage network leading to disruption of surface and ground water hydrology (Activity 6).

Construction phase

- Personnel and vehicle movement (Activity 1) leading to: habitat destruction through burial or crushing; soil compaction; weed invasion due to soil disturbance and introduction of weeds; or stress or mortality caused by changes to surface or sub-surface hydrology.

- Material and equipment lay-down in sensitive areas (Activity 2), leading to habitat destruction from being temporarily covered or crushed; or poisoning from toxic chemicals coating or leaking from laid down materials and equipment.
- Inappropriate management, storage and/or disposal of construction materials, substances and wastes (Activity 3) leading to: an exacerbation of predation by vermin (e.g. rabbits, hares and foxes) by providing harbor; poisoning or impacts associated with changes in soil composition from toxic chemicals or material leaks; or degradation of water ways from pollution or sedimentation.
- Earthworks (Activity 4) leading to vegetation clearing or loss of vegetation through: direct removal; burial or coating from dust; weed invasion due to soil disturbance; or stress caused by changes to surface or sub-surface hydrology.
- Soil/fill stockpiling (Activity 5) leading to: habitat destruction through burial or crushing; impacts associated with changes in soil composition; or exacerbation of predation by vermin (e.g. rabbits, hares and foxes) by providing harbor.

Post-construction phase

- Motor vehicle traffic (Activity 7) leading to increased fauna fatality on roads;
- Adjacent residential land use (Activity 7) leading to predation of, or competition with native wildlife by domestic plants and animals and degradation of habitat and water quality from littering, dumping of waste and inappropriate access.

3.3. Risk management

Specific actions to mitigate these risks to the environmental values for each important feature of the New Gisborne Development Plan area and surrounds are prescribed in the following sections of this Plan.

Future Retarding Basin

Conservation Reserve

Rail Reserve

Conservation Reserve

Future Drainage Reserve

Ferrier Road

Gisborne Racecourse Marshlands Reserve

Calder Freeway

Station Road

Legend

- Conservation Management Plan Area
- Conservation Reserve (NO GO ZONE)
- Drainage Reserve
- Scattered Indigenous Trees
- Matted Flax-lily

0 100 200 400 Metres

N

Figure 2: Environmental features

Project: New Gisborne Conservation Management Plan

Client: C/- Collie Pty Ltd

Project No.: 13078	Date: 2/12/2013	Created By: M. Ghasemi / D. Coppolino

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4. IMPORTANT ENVIRONMENTAL FEATURES

4.1. Gisborne Racecourse Marshlands Reserve

4.1.1. Environmental values

The Gisborne Racecourse Marshlands Reserve (Plate 1) contains a large depression in its southern section which supports high-quality indigenous swamp vegetation. The northern part of the reserve comprises dryer land with a man-made wetland. The northern part of the reserve is more modified than the southern section and has significant weed cover.

The Gisborne Racecourse Marshlands Reserve is recognised as having significant biodiversity in the region and supports the environmental values listed below.

- A high quality remnant of the Ecological Vegetation Class *Plains Sedgy Wetland* (EVC 647) in the south – classified as *endangered* in the Victorian Volcanic Plain bioregion;
- A lower quality remnant of Ecological Vegetation Class *Plains Grassy Wetland* (EVC 651) in the north – classified as *endangered* in the Victorian Volcanic Plain bioregion;
- Potential examples of the nationally threatened ecological community *Seasonal Herbaceous Wetlands of the Temperate Lowland Plains* as listed under the EPBC Act (not currently assessed under this criteria);
- Nationally threatened flora species listed under the EPBC Act and the *Advisory List of Rare and Threatened Plants in Victoria*:
    - Swamp Everlasting; and
    - Swamp Fireweed.
- Threatened additional flora species listed on the *Advisory List of Rare and Threatened Plants in Victoria*:
    - Pale Swamp Everlasting;
    - Perennial Blown-grass;
    - Plains Yam-daisy;
- Potential habitat for listed fauna species, described in more detail below.

Growling Grass Frog

The Growling Grass Frog – listed as threatened under the EPBC Act and *Advisory List of Threatened Vertebrate Fauna in Victoria* – has not been recorded in the marshlands reserve or the future residential development during surveys undertaken of the marshlands in 1997 and 2003 (Carr *et al* 2003), as well as targeted surveys of both the marshlands and future residential development area over two nights in 2012 (EHP 2012). No historic records of the species exist from the marshlands reserve (VBA 2013) and the marshland habitat has been described as only 'marginal' potential habitat (Carr *et al* 2003).

Only one record of the species is found within a 10-kilometre search radius of the marshlands on the DEPI database (VBA 2013) from the last 30 years. This record was from approximately 1.5 kilometres to the northwest of the marshlands and located outside of the catchment boundary for the marshlands as identified in a 2009 drainage

review report (Hyder 2009b). Given the paucity of historical records in the nearby region and the failure to detect the species during recent targeted surveys, it is considered reasonable to conclude that the species does not currently inhabit the marshlands.

Contingency measures in the event that the species migrates to the marshlands in the future are discussed in the following section.

Latham's Snipe

The Latham's Snipe – listed as a migratory species under the EPBC Act was recorded in the marshlands reserve in 2003 (Carr *et al* 2003) and there is potential for the reserve to continue providing habitat for this species in the future. Habitat protection measures for this species are discussed in the following section.

In the adjacent Gisborne Racecourse Marshland Reserve, this species is most likely to use the habitat coinciding with Plains Sedgy Wetland vegetation. This lies approximately 100 metres south of the reserve boundary, and, therefore, over 120 metres south of any new residences in the New Gisborne Development Plan area, taking into account the 20 metre separation between residences and the reserve boundary.

Plate 1: Plains Sedgy Wetland in the Gisborne Racecourse Marshlands Reserve

4.1.2. Managing risks to environmental values

Management measures prescribed in this plan to mitigate risks to the Gisborne Racecourse Marshlands Reserve are summarised below and described in detail in Appendix 1 according to potential impacts identified here.

All development phases

Growling Grass Frog habitat management

As a contingency in the event that the species is found in the development area during construction or post-construction, a management, salvage and translocation protocol has been developed to mitigate any potential risks to the species (Appendix 2).

The measures included in this protocol relating to the Gisborne Racecourse Marshlands Reserve are:

- The installation of drift-netting to manage the movement of the species away from potential risks; and
- Salvage and translocation protocols in the event that the species is found adjacent to the reserve during construction.

Latham's Snipe habitat management

The Gisborne Racecourse Marshlands Reserve has been identified as providing habitat for the migratory species Latham's Snipe. The management measures outlined for all phases of development below include the following urban interface mitigation measures that will prevent significant impacts on snipe:

- Maintaining a 20 meter separation between residential allotments and the reserve boundary;
- Fencing to exclude vehicle and pedestrian access into the reserve from the new residential areas to the north; and
- Provision for landscape plantings along the northern reserve boundary that include a screening shrub layer to minimize indirect disturbance to birds in the reserve.

Pre-construction

Surface water runoff and drainage of groundwater design

A consultant report by Hyder Consulting Pty Ltd has indicated that the development is not likely to increase groundwater flows into the Gisborne Racecourse Marshlands Reserve as groundwater was found to flow north, away from the reserve (Hyder 2009a).

However, in order to avoid disruption of surface and ground water hydrology (Potential Impact 6.1) within the development area, earthworks and drainage reserves (including the future retarding basin) will be designed and implemented in a way that does not increase or reduce surface or groundwater flows out of the Gisborne Racecourse Marshlands Reserve, to be detailed in a Stormwater Management Plan required under Clause 3, Schedule 16.

Interface design principles

Appropriate design and management of interfaces between development and environmental values will mitigate the risk of degradation of habitat and water quality from littering, dumping of waste and inappropriate access (Potential Impact 7.3). Interface design between the development and reserve will incorporate the following features:

- Sturdy post and wire fencing of the reserve to exclude pedestrian and vehicle access to the Gisborne Racecourse Marshland Reserve;
- Low indigenous ground cover behind bollards with a row of two metre high screening shrubs adjacent to the fence to screen habitats from disturbance by cars and pedestrians using the adjacent road;
- The integration of plantings with any required drainage infrastructure to capture high flows from the reserve and which prevents flows back into the reserve; and
- Mown lawn between indigenous plantings and the curb of perimeter roads; and
- No shared paths to be constructed on the reserve side of the perimeter roads.

Principles guiding the interface design are shown in Appendix 3 and Figure 3. These principles will guide the final design of the interfaces and roadsides.

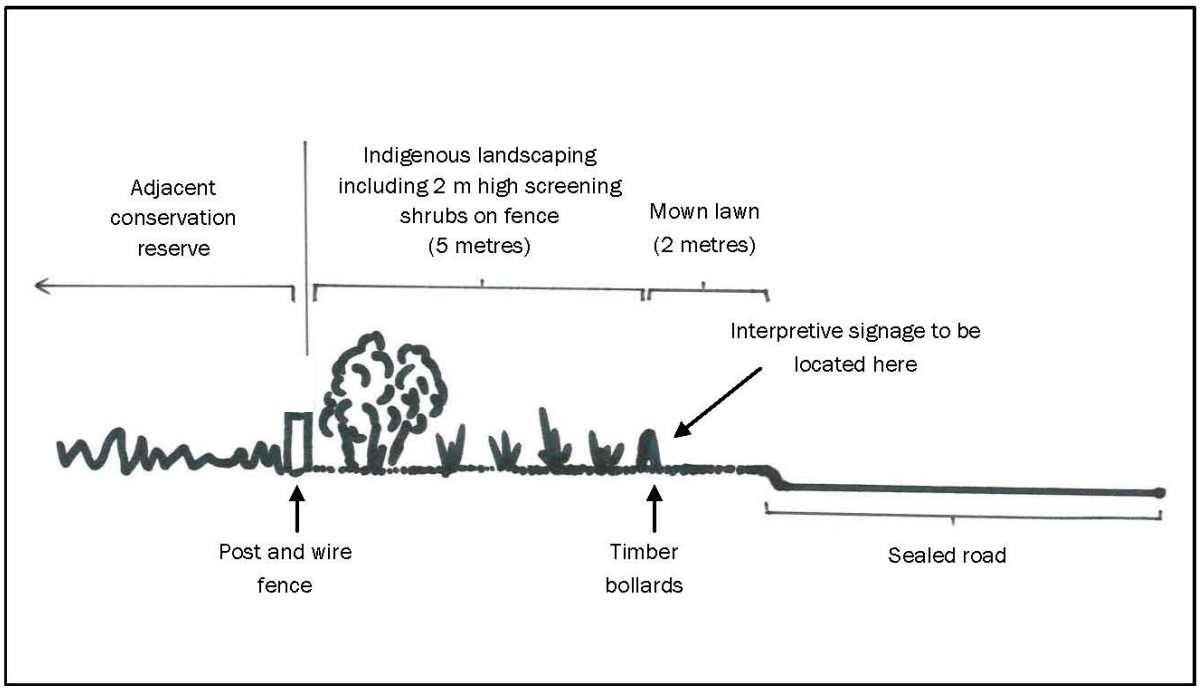

Figure 3: Principles of interface design between development and marshlands reserve

Reserve fencing

To prevent the environmental values of the marshlands reserve from being buried or crushed (Potential Impact 1.1), temporary fencing of the northern boundary of the reserve at the development interface will be implemented prior to the commencement of construction where existing fencing is considered inadequate. Prior to construction all temporary and existing fencing on this northern boundary will have para-webbing affixed.

Permanent fencing, to be implemented post-construction, will be a post & wire design at a height of approximately 1.4 metres.

Construction phase

In addition to Growling Grass Frog management measures (Appendix 2), the measures listed below are prescribed to manage risks to environmental values of the Gisborne

Racecourse Marshlands Reserve during the construction phase, with reference to potential impacts and detailed management prescriptions provided in Appendix 1.

- Temporary high-visibility fencing and signage (Potential Impacts 1.1 and 1.2)
- Weed control (Potential Impacts 1.3 and 4.3)
- Vermin control (Potential Impact 5.3)
- Identification of appropriate site access points (Potential Impact 1.3)
- Vehicle and personnel hygiene (Potential Impact 1.3)
- A 20-metre exclusion buffer for stockpiling, lay down and wash down as shown in Figure 4 (Potential Impacts 1.3 and 3.1)
- Proper disposal of construction wastes (Potential Impact 3.1)
- Managing surface water runoff and drainage of groundwater (Potential Impacts 4.4 and 6.1)

Post-construction phase

In addition to Growling Grass Frog management measures (Appendix 2), the measures listed below are prescribed to manage risks to environmental values of the Gisborne Racecourse Marshlands Reserve during the post-construction phase, with reference to potential impacts and detailed management prescriptions provided in Appendix 1.

- Weed control (Potential Impact 1.3)
- Vermin control (Potential Impact 5.3)
- Promoting community awareness through the use of information brochures, interpretive signage (Potential Impacts 7.2 and 7.3)
- Manage future use of area by community through the management of various aspects of residential living and the ongoing maintenance of landscape interfaces (Potential Impacts 7.1 and 7.3)

4.2. Conservation reserves

Two reserves characterised by remnant woodland are to be set aside in the northwest of the development for conservation purposes (Figure 2). The precise boundaries and management of these reserves will be the subject of future detailed management plans.

4.2.1. Environmental values

The northernmost conservation reserve (Plate 2) supports the environmental values listed below.

- *Higher Rainfall* Plains Grassy Woodland (EVC 55_63) – classified as *endangered* in the Victorian Volcanic Plain bioregion;
- Large old habitat trees; and
- Potential future dispersal habitat for the nationally threatened Growling Grass Frog within a formed drainage channel that bisects the reserve.

Plate 2: Woodland in the northernmost reserve

The southernmost conservation reserve (Plate 3) supports the following environmental values:

- *Higher Rainfall* Plains Grassy Woodland (EVC 55_63) – classified as *endangered* in the Victorian Volcanic Plain bioregion;
- Large old habitat trees;
- Matted Flax-lily – listed as threatened under the EPBC Act and on the *Advisory List of Rare and Threatened Plants in Victoria*; and
- The nationally threatened ecological community *Grassy Eucalypt Woodland of the Victorian Volcanic Plain* as listed under the EPBC Act.

Plate 3: Woodland in the southernmost reserve

4.2.2. Managing risks to environmental values

Management measures outlined in this plan to mitigate risks to the conservation reserves are summarised below and described in detail in Appendix 1 according to potential impacts identified here.

Pre-construction

- Permanent reserve fencing to be implemented at the interface between residential development and each reserve, to be detailed in specific management plans prepared under permit requirements (Potential Impacts 1.1, 1.2 and 4.1)
- Temporary fencing to be implemented at the boundaries between conservation reserves and the drainage reserve prior to drainage construction works (Potential Impacts 1.1, 1.2 and 4.1)
- Consideration to be given to permanent reserve fencing at the boundaries between the drainage reserves and conservation reserves at the detailed environmental planning phase for the drainage reserve and conservation reserves (Potential Impacts 1.1, 1.2 and 4.1). This consideration will depend on the proposed design and use of adjacent drainage reserves.
- Appropriate design of interfaces between development and environmental values as described in Appendix 3 (Potential Impact 7.3)

Construction phase

The measures listed below are prescribed to manage risks to environmental values of the Northern Conservation Reserve during the construction phase.

- Temporary high-visibility fencing and signage (Potential Impacts 1.1, 1.2, 1.3, 2.1, 2.2, 3.1, 3.2, 4.1 and 4.3)
- Weed control (Potential Impacts 1.3 and 4.3)
- Vermin control (Potential Impact 5.3)
- Identification of appropriate site access points (Potential Impacts 1.3 and 4.3)
- Vehicle and personnel hygiene (Potential Impacts 1.3 and 4.3)
- A 20-metre exclusion buffer for stockpiling, lay down and wash down as shown in Figure 4 (Potential Impacts 1.3, 2.1, 2.2, 3.1, 3.2, 4.3, 5.1 and 5.2)
- Proper disposal of construction wastes (Potential Impacts 3.1 and 3.2)
- Sediment control (Potential Impacts 3.1, 3.2, 5.1 and 5.2)
- Minimising areas of excavation to minimise dust (Potential Impacts 4.2 and 4.4)

Post-construction phase

The measures listed below are prescribed to manage risks to environmental values of the conservation reserves during the post-construction phase.

- Weed control (Potential Impacts 1.3 and 4.3)
- Vermin control (Potential Impact 5.3)
- Promoting community awareness through the use of information brochures, interpretive signage (Potential Impacts 7.2 and 7.3)
- Manage future use of area by community through the management of various aspects of residential living and the ongoing maintenance of landscape interfaces (Potential Impacts 7.1 and 7.3)

4.3. Scattered trees

Scattered (indigenous) trees occur in various locations within the development, including to the north-west of the future southernmost conservation reserve and across the land between Ferrier Road and the Gisborne Racecourse Marshlands Reserve to the south. The intent of the NGDP is to retain scattered trees wherever possible within the development, subject to detailed design. The precise number and location of trees to be retained will be determined at the detailed planning (planning permit application) stage.

4.3.1. Environmental values

Scattered indigenous trees within the development (Plate 4) provide connectivity for bird and bat species, allowing then to disperse between the conservation reserves and to other habitat areas across the broader landscape. In particular, they connect the Gisborne Racecourse Marshlands Reserve with the future Southern Conservation Reserve and wildlife corridor along the future drainage reserves.

Plate 4: Scattered indigenous trees south of Ferrier Road

4.3.2. Managing risks to environmental values

Management measures prescribed in this plan to mitigate risks to retained scattered indigenous trees are summarised below and described in detail in Appendix 1 according to potential impacts identified here.

Construction phase

- Establishment and fencing of Tree Protection Zones as described in Appendix 4 (Potential Impacts 1.1, 1.2, 4.1, 5.1 and 5.2)
- Temporary high-visibility fencing and signage (Potential Impacts 1.1, 1.2, 1.3, 2.1, 2.2, 3.2 and 4.1)
- Vehicle and personnel hygiene (Potential Impact 1.3)
- Minimising areas of excavation to minimise dust (Potential Impact 4.2)
- Proper disposal of construction wastes (Potential Impact 3.2)

Post-construction phase

- Enforcement of Tree Protection Zones as described in Appendix 4 (Potential Impacts 1.2, 4.1, 5.1 and 5.2)

4.4. Drainage reserves and retarding basin

4.4.1. Environmental values

Existing man-made drainage channels within the development (Plate 5) have been recolonised by indigenous flora, which provides some habitat value. The future drainage reserve will be remodelled to direct flows to a retarding basin in the northwest of the development area. The current concept design for drainage lines within the drainage reserve is indicative as shown in the NGDP – the precise configuration will be determined as part of the detailed design process.

Plate 5: Drainage line supporting indigenous vegetation

4.4.2. Managing risks to environmental values

Management measures prescribed in this plan to mitigate risks to the future drainage reserves and retarding basin are summarised below and described in detail in Appendix 1 according to potential impacts identified here. Specific measures relating to the design and construction process for the drainage reserves themselves will be dealt with under separate construction environmental management planning processes in consultation with Melbourne Water and DEPI.

Pre-construction

- Temporary fencing to be implemented at the boundaries between conservation reserves and the drainage reserve prior to drainage construction works (Potential Impacts 1.1, 1.2 and 4.1)

- Consideration to be given to permanent reserve fencing at the boundaries between the drainage reserves and conservation reserves at the detailed construction environmental planning phase for the drainage reserve and conservation reserves (Potential Impacts 1.1, 1.2 and 4.1).
- Appropriate design and management of interfaces between development and environmental values as described in Appendix 3 (Potential Impact 7.3)
- Managing surface water runoff and drainage of groundwater (Potential Impacts 4.4 and 6.1)
- Appropriate design of habitat provision as described in Appendix 2 for Growling Grass Frog

Construction phase

- The implementation of Growling Grass Frog salvage and translocation contingencies as described in Appendix 2 (Potential Impacts 4.1 and 7.1)
- Weed control (Potential Impacts 1.3 and 4.3)
- Vermin control (Potential Impact 5.3)
- Identification of appropriate site access points (Potential Impacts 1.3 and 4.3)
- Vehicle and personnel hygiene (Potential Impacts 1.3 and 4.3)
- A 30-metre exclusion buffer extending into the residential development for stockpiling, lay down and wash down as shown in Figure 4 (Potential Impacts 1.3, 2.1, 2.2, 3.1, 3.2, 3.3, 4.3, 5.1 and 5.2)
- Proper disposal of construction wastes (Potential Impacts 3.1, 3.2 and 3.3)
- Sediment control (Potential Impacts 3.1, 3.2, 3.3, 5.1 and 5.2)
- Managing surface water runoff and drainage of groundwater (Potential Impacts 4.4 and 6.1)

Post-construction phase

- Weed control (Potential Impacts 1.3 and 4.3)
- Vermin control (Potential Impact 5.3)
- Promoting community awareness through the use of information brochures, interpretive signage (Potential Impacts 7.2 and 7.3)
- Manage future use of area by community through the management of various aspects of residential living and the ongoing maintenance of landscape interfaces (Potential Impacts 7.1 and 7.3)

5. REFERENCES

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Appendix 1: Identifying and managing risks

The activities considered in the current risk assessment (i.e. activities that have the potential to impact on significant environmental values during the pre-, during and post-construction phases of the development) are listed below:

- Personnel and vehicle movement;
- Material and equipment lay-down;
- Management, storage and/or disposal of construction materials, substances and wastes;
- Earthworks, including vegetation clearing;
- Soil/fill stockpiling;
- Alteration of the site hydrology, though the alteration of natural and man-made drainage systems, increase in the area of hard surfaces such as concreted areas, alteration of soils and vegetation, etc.;
- Future recreational use and amenity/infrastructure maintenance; and
- Increased local motor-vehicle traffic during construction and in the future as the development is populated by residents.

Risk management

Activities which may impact on environmental values, and the management measures aimed at reducing the risk of impact are outlined in Table 1.

Management methods are to be reviewed and adapted as required over the life of the Plan in consultation with relevant experts and the relevant Victorian government department.

Table 1: Measures for managing risks to significant environmental values

Potential Impacts		Environmental Values	Significant biodiversity values	Risk Management		
#	Description			Management Measures	Responsibility	Monitoring* Frequency
Activity 1: Personnel and vehicle movement						
1.1	Destruction from being buried or crushed.	Gisborne Racecourse Marshlands Reserve Conservation Reserves Scattered indigenous trees	Native vegetation Listed vegetation communities Threatened flora Threatened fauna habitat Scattered trees	Prior to the commencement of construction erect temporary fencing on the boundaries between conservation reserves and residential development and affix high-visibility para-webbing. Prior to construction, affix signage reading '**NO GO ZONE**' at ten metre spacings along the conservation reserve perimeter fences and other para-web fencing. **NO GO ZONES** to be strictly enforced to exclude machinery. Para-webbing and '**NO GO ZONE**' signs must be kept affixed and clearly visible until the completion of construction works and clean-up. Set up Tree Protection Zones (TPZs) around retained scattered trees as per Appendix 4. Following construction, permanently fence conservation reserve boundaries as described in Appendix 3 and Figure 4.	Construction Contractor	Weekly
1.2	Impacts associated with soil compaction (e.g. inhibition of recruitment; altered permeability of moisture into soils; etc.).	Conservation Reserves Scattered indigenous trees	Native vegetation Listed vegetation communities Threatened flora Scattered trees			
1.3	Competition or loss of habitat from weed invasion due to soil disturbance and/or introduction of weed seed/propagules	Gisborne Racecourse Marshlands Reserve Conservation Reserves Drainage reserve and retarding basin	Native vegetation Listed vegetation communities Threatened flora Threatened fauna habitat	Control all weed outbreaks in disturbed areas after construction to prevent any significant weed outbreaks in adjacent conservation reserve and/or drainage reserves (see Appendix 5). All vehicles are to enter and exit works sites along defined routes that do not cause significant soil disturbance (i.e. boggy areas) and significant weed spread (i.e. areas infested with weeds). All vehicles brought on site are to be weed free and all personnel are to ensure that they do not carry seeds or mud (on their cloths or footwear) into or out of the development. All vehicle wash down, lay down and personnel rest areas are to be clearly defined (fenced and/or signed) and located at least 30 metres away from conservation reserves (Figure 4).	Bushland Contractor Construction Contractor Driver Construction Contractor	Weekly Monthly Daily Monthly

Potential Impacts		Environmental Values	Significant biodiversity values	Risk Management		
#	Description			Management Measures	Responsibility	Monitoring* Frequency
Activity 2: Material and equipment lay-down						
2.1	Destruction from being temporarily covered or crushed.	Conservation Reserves Scattered indigenous trees	Native vegetation Listed vegetation communities Threatened flora	**NO GO ZONES** strictly enforced to exclude material or equipment storage. All lay down areas are to be clearly defined (fenced and/or signed) and located at least 30 metres away from conservation reserve and at least 30 metres away from drainage reserves (Figure 4).	Construction Contractor	Monthly
2.2	Poisoning from toxic chemicals coating or leaking from laid down materials and equipment.	Conservation Reserves Drainage reserve and retarding basin Scattered indigenous trees	Native vegetation Listed vegetation communities Threatened flora Threatened fauna habitat Scattered trees			
Activity 3: Management, storage and/or disposal of construction materials, substances and wastes						
3.1	Exacerbation of impacts such as predation from vermin (e.g. rabbits, hares and foxes) by providing harbor.	Gisborne Racecourse Marshlands Reserve Conservation Reserves Drainage reserve and retarding basin	Native vegetation Listed vegetation communities Threatened flora Threatened fauna habitat	All vehicle wash down, lay down and personnel rest areas are to be clearly defined (fenced and/or signed) and located at least 30 metres away from the conservation reserves and at least 30 metres away from drainage reserves (Figure 4). Provide enclosed skips for construction waste and ensure that they are emptied within 24 hours of being full. At the end of each day, clean up from the site any construction waste and place garbage in the skips provided. Install sediment fencing between works and drainage areas as well as around any areas where hazardous/toxic materials or substances are to be used or stored onsite (e.g. acids used to clean concreted areas or brickwork) (Figure 4). Ensure that chemicals and construction runoff do not come within seven metres of the conservation reserves (to retain an undisturbed buffer planting zone as shown in Figure 3 and Appendix 3) or within 30 metres of drainage reserves (Figure 4).	Construction Contractor Construction Contractor Construction Contractor Construction Contractor Construction Contractor	Monthly Daily End of each day Weekly Weekly
3.2	Poisoning or impacts associated with changes in soil composition from toxic chemicals or material leaks.	Conservation Reserves Drainage reserve and retarding basin Scattered indigenous trees	Native vegetation Listed vegetation communities Threatened flora Threatened fauna habitat Scattered trees			
3.3	Degradation of water ways from pollution or sedimentation	Drainage reserve and retarding basin	Threatened fauna habitat			

Potential Impacts		Environmental Values	Significant biodiversity values	Risk Management		
#	Description			Management Measures	Responsibility	Monitoring* Frequency
Activity 4: Earthworks, including vegetation clearing						
4.1	Direct removal, damage or destruction.	Conservation Reserves Drainage reserve and retarding basin Scattered indigenous trees	Native vegetation Listed vegetation communities Threatened flora Threatened fauna habitat Scattered trees	Prior to the commencement of construction erect temporary fencing on the boundaries between conservation reserves and residential development and affix high-visibility para-webbing. Prior to construction, affix signage reading '**NO GO ZONE**' at ten metre spacings along the conservation reserve perimeter fences and other para-web fencing. **NO GO ZONES** to be strictly enforced to exclude machinery. Para-webbing and '**NO GO ZONE**' signs must be kept affixed and clearly visible until the completion of construction works and clean-up. Set up Tree Protection Zones (TPZs) around retained trees as per Appendix 4. Induct all construction personnel in the salvage protocol for Growling Grass Frog outlined in Appendix 2.	Construction Contractor Construction Contractor Proponent	Weekly Weekly During earthworks in drainage areas
4.2	Burial or coating from dust.	Conservation Reserves Scattered indigenous trees	Native vegetation Listed vegetation communities Threatened flora Scattered trees	Minimise the area of cleared land left exposed at any one time. Revegetate cleared areas with indigenous or non-invasive plant species immediately following the completion of construction works.	Construction Contractor Bushland/ Landscape Contractor	Weekly On completion of works
4.3	Competition or loss of habitat from weed invasion due to soil disturbance.	Conservation Reserves Drainage reserve and retarding basin	Native vegetation Listed vegetation communities Threatened flora Threatened fauna habitat	Control all weed outbreaks in disturbed areas after construction to prevent any significant weed outbreaks in the conservation reserves and/or drainage reserves (see Appendix 5). All vehicles are to enter and exit works sites along defined routes that do not cause significant soil disturbance (i.e. boggy areas) and significant weed spread (i.e. areas infested with weeds). All vehicles brought on site are to be weed free and all personnel are to ensure that they do not carry seeds or mud on clothes or footwear into or out of the development. All vehicle wash down, lay down and personnel rest areas are to be clearly defined (fenced and/or signed) and located at least 30 metres away from the conservation reserves and at least 30 metres away from drainage reserves (Figure 4).	Bushland Contractor Construction Contractor Driver Construction Contractor	Weekly Monthly Daily Monthly
4.4	Stress or mortality to vegetation caused by changes to surface or sub-surface hydrology (i.e. water/moisture levels and movement).	Gisborne Racecourse Marshlands Reserve Northern Conservation Reserve Drainage reserve and retarding basin	Native vegetation Listed vegetation communities Threatened fauna habitat	Minimise the period that cleared/excavated areas and trenches (e.g. for foundations or the installation of underground infrastructure) are left exposed/unfilled. Manage surface runoff from stormwater or construction works (e.g. hosing down or clean-up) so that no runoff is directed towards the Gisborne Racecourse Marshlands Reserve. Runoff will be directed to the north-flowing drain in the development area. Ensure that earthworks and drainage reserves (including the future retarding basin) are designed and constructed in a way that does not increase or reduce surface or groundwater flows out of the Gisborne Racecourse Marshlands Reserve.	Construction Contractor Construction Contractor Proponent (design) & Construction Contractor (implementation)	Daily during associated earthworks Weekly and after any rain Daily during associated earthworks

Potential Impacts		Environmental Values	Significant biodiversity values	Risk Management		
#	Description			Management Measures	Responsibility	Monitoring* Frequency
Activity 5: Soil/fill stockpiling						
5.1	Burial under soil, including areas where soil has been placed as well as areas over which piled soils may spread over time.	Conservation Reserves Scattered indigenous trees	Native vegetation Listed vegetation communities Threatened flora Scattered trees	Stockpile soil/fill outside of **NO GO ZONES** (including **TPZs**), and at least 30 metres from the conservation reserves and at least 30 metres away from drainage reserves (Figure 4). Bund all soil/fill stockpiles.	Earthmoving equipment operator Construction contractor	Daily during earthworks
5.2	Impacts associated with changes in soil composition (e.g. altered nutrient and moisture provision).	Conservation Reserves Scattered indigenous trees	Native vegetation Listed vegetation communities Threatened flora Scattered trees			
5.3	Exacerbation of impacts from vermin (e.g. rabbits, hares and foxes) by providing harbor.	Gisborne Racecourse Marshlands Reserve Northern Conservation Reserve Drainage reserve and retarding basin	Native vegetation Listed vegetation communities Threatened flora Threatened fauna habitat	Vermin control is to be undertaken as required based on weekly monitoring by the construction contractor of the presence of vermin within the construction site for the duration of works. Any vermin control required must be undertaken by a suitably qualified vermin control specialist (see Appendix 6).	Construction contractor/vermin control contractor	Monthly
Activity 6: Alteration of the site hydrology, though the alteration of natural and man-made drainage systems, increase in the area of hard surfaces such as concreted areas, alteration of soils and vegetation, etc.						
6.1	Disruption of surface and ground water hydrology	Gisborne Racecourse Marshlands Reserve	Native vegetation Threatened flora Threatened fauna habitat	Ensure that earthworks and drainage reserves (including the future retarding basin) and designed and implemented in a way that does not increase or reduce surface or groundwater flows out of the Gisborne Racecourse Marshlands Reserve. **Note**: A consultant report by Hyder Consulting Pty Ltd has indicated that the development is not likely to increase groundwater flows into the Gisborne Racecourse Marshlands Reserve (Hyder 2009a).	Proponent (design) & Construction Contractor (implementation)	Daily during associated earthworks

Potential Impacts		Environmental Values	Significant biodiversity values	Risk Management		
#	Description			Management Measures	Responsibility	Monitoring* Frequency
Activity 7: Motor vehicle traffic, recreational use, amenity/infrastructure maintenance and adjacent residential land use						
7.1	Increased fauna fatality on roads	Gisborne Racecourse Marshlands Reserve Northern Conservation Reserve Drainage reserve and retarding basin	Indigenous fauna	Set appropriate speed limits and erect signage to alert motorists of fauna passage across or onto roads, particularly adjacent to the conservation reserves and at wildlife corridors. **Note**: Drift fencing will be implemented at the interface between the development and the marshlands reserve in the event of any future detection of the Growling Grass Frog (Appendix 2)	Proponent (design) & Construction Contractor (implementation)	On completion of works
7.2	Predation of, or competition with native wildlife by domestic plants and animals	Gisborne Racecourse Marshlands Reserve Northern Conservation Reserve Drainage reserve and retarding basin	Native vegetation Listed vegetation communities Threatened flora Threatened fauna habitat	Provide all new residents with a brochures, which outlines the following information/guidelines: • Keep cats indoors at night. • Keep dogs secured within property and on a lead when taken outside of the property. • Ensure that garden plants are not allowed to escape beyond owner's property. • Do not introduce any fish or aquarium plants into waterways or retarding basin. • Do not litter or dump rubbish in public areas or any reserves. • A simple location map showing the locations of conservation reserves, retarding basin (described in the brochures as a lake or wetland) and wildlife corridors (i.e. drainage reserves). Erect and maintain interpretive signage as recommended in Appendix 7 and Figure 5.	Land Sales Manager Construction Contractor	On sale of property Once erected then quarterly for the next two years
7.3	Degradation of habitat and water quality from littering, dumping of waste or from domestic pet faeces	Gisborne Racecourse Marshlands Reserve Northern Conservation Reserve Drainage reserve and retarding basin	Native vegetation Listed vegetation communities Threatened flora Threatened fauna habitat	Install garbage receptacles at appropriate locations and maintain them until responsibilities are transferred (see Appendix 8). Install bollards to prevent vehicle accessing perimeters of conservation reserves to dump rubbish. Landscape interface between residential development and the natural environment as per Appendix 3 Maintain indigenous landscaping at low height to keep clear line of sight into the conservation and drainage reserves to deter illegal activity within these areas. In areas where dog-walking is likely to be a common land use, erect and maintain signage that states that pet owners must clean up and appropriately dispose of any dog faeces in dog spoil bags provided on-site in dedicated dispensers.	Construction Contractor Construction Contractor Landscape Contractor Landscape Contractor Construction Contractor	Once installed then quarterly Once installed On completion of works Quarterly Once erected then quarterly

Note: TPZ = Tree Protection Zone; ***** monitoring is to be undertaken as per Appendix 8, including directing adaptive management

Future Retarding Basin

Conservation Reserve

Rail Reserve

Conservation Reserve

Future Drainage Reserve

Ferrier Road

Gisborne Racecourse Marshlands Reserve

Legend

- Conservation Management Plan Area
- Conservation Reserve (NO GO ZONE)
- Drainage Reserve
- Residential Development
- 30m Stockpile, Laydown and Washdown Exclusion Zone
- Scattered Indigenous Trees
- Matted Flax-lily
- Sediment Fencing
- Reserve Fencing

0 75 150 300 Metres

N

Figure 4: Works exclusion zones and fencing

Project: New Gisborne Conservation Management Plan

Client: C/- Collie Pty Ltd

Project No.: 13078	Date: 2/12/2013	Created By: M. Ghasemi / D. Coppolino

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Legend

- Conservation Management Plan Area
- Conservation Reserve (NO GO ZONE)
- Drainage Reserve
- Residential Development
- Interface
- Scattered Indigenous Trees
- Matted Flax-lily
- Signs
- Sign Direction

0 100 200 400 Metres

Figure 5: Interfaces and Interpretation

Project: New Gisborne Conservation Management Plan

Client: C/- Collie Pty Ltd

Project No.: 13078	Date: 2/12/2013	Created By: M. Ghasemi / D. Coppolino

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Appendix 2: Growling Grass Frog management, salvage and translocation protocol

This salvage and translocation protocol is to be implemented for earthworks within any existing drainage areas, including dams and drainage lines. Impacts on Growling Grass Frogs within the Gisborne Racecourse Marshlands Reserve are not expected to arise from works associated with the development provided that the development is designed to avoid alterations to the natural hydrology of this area (as prescribed in this CMP).

Construction briefing

Prior to the drainage reserve construction, all key construction personnel will be briefed about the occurrence of Growling Grass Frog in the area. Other construction personnel will be informed about the species as part of the general environmental briefing of construction personnel.

If the Growling Grass Frog is encountered during construction, all construction activities will cease until the species has been salvaged according to the protocol outlined below. No fauna handling will be undertaken by untrained personnel – a suitably licensed zoologist will be contacted to implement the salvage protocol and any handling will be undertaken in accordance with relevant permit conditions and animal ethics standards.

Management of Growling Grass Frog movement

In the event that Growling Grass Frog is encountered during construction or post-construction, frog drift fencing will be installed to manage the movement of Growling Grass Frogs away from potential risks. In this event, frog drift fencing will be designed and installed along the interface between the marshlands reserve and the development in consultation with DEPI to direct Growling Grass Frogs away from the development and into areas of suitable habitat. This drift fencing would then be maintained in perpetuity.

Salvage and translocation

Salvage of Growling Grass Frogs should operate under permits issued by DEPI under the *Wildlife Act 1975* and be carried out by a qualified zoologist. Note that between four and six weeks should be allowed for DEPI to issue a licence to translocate any frogs.

This protocol is subject to variations following any new information that comes to hand, or due to any unforeseen circumstances arising at the development.

Note that all frog handling will be undertaken by qualified zoologists, under licence from DEPI. Consultation with DEPI is required to approve a site-specific salvage protocol. Qualified animal handlers are to be covered by Professional Indemnity Insurance, Public Liability Insurance, WorkCover and Workers Compensation Insurance.

The salvage and translocation procedure is as following:

- Salvage personnel shall undergo a site induction and implement approved on-site OH&S safety procedures, which will include as a minimum:
    - Wearing fluorescent safety vests and appropriate footwear (e.g. gumboots).
    - Carry appropriate communication equipment (e.g. mobile phones and contact numbers of relevant authorities) at all times.

  - Comply with standard DEPI-approved frog handling disinfection measures (washing hands and footwear with disinfectant prior to handling each frog).

- The translocation site will be chosen prior to the commencement of construction activities. The translocation site will be located in the Gisborne Racecourse Marshlands Reserve, in suitable habitat with fringing and emergent vegetation, with water at least 50 centimeters in depth and between 100 and 500 metres from capture site.
- Latex gloves are to be used for handling each frog and disposed prior to handling the next frog.
- Frogs should be placed in a plastic container – one container per individual frog, and transported to the translocation site as soon as practicable.
- Once translocation has started, a temporary frog fence at least one metre high will be placed at the border of the drainage reserve to prevent frogs from entering the construction zone.
- Salvage operation will be undertaken at night when the frogs are active.

Captured frogs will be translocated following the above procedures. Once translocation is complete, construction activities may recommence. A report to DEPI will need to be prepared under the terms of any licence to translocate.

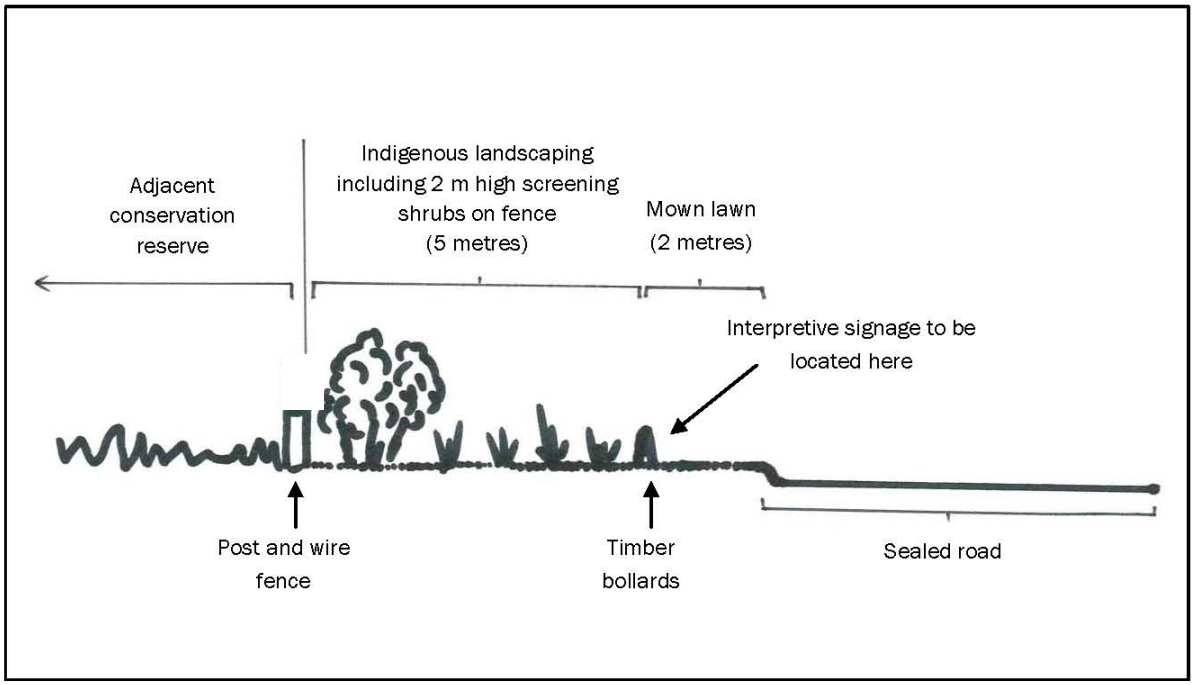
Any injured animals will be delivered to the Melbourne Zoo and treated by a veterinarian and will be reported to DEPI.

Habitat provision

Drainage lines within the future drainage reserves may be designed with consideration given to the provision of habitat for the Growling Grass Frog. Channels may be designed in a way that ensures slow water-flows or still water according to Melbourne Water requirements.

Appendix 3: Principles for interface design between the development and reserves

Design principles for the interface between residential development and reserves is represented in Figure 5. The cross-sectional concept plan for these interfaces is shown below:



The following two key landscaping zones within interfaces are to be planted out with indigenous species:

- Lawns
- Indigenous landscaping

Species recommended for plantings within each of the above-listed zones are outlined below. Advice should be sought from local indigenous nurseries, bushland contractors and/or Parks Victoria on the availability of the plant species recommended for revegetation in this Plan. Indigenous seed should be collected from areas of native vegetation within a 10 kilometre radius of the plantings.

Indigenous plantings should involve cluster plantings and will involve planting tubestock, cells and/or direct seeding. Planting should occur when there is adequate soil moisture. Depending on seasonal conditions, this is most likely to be between May and September each year. Planting may be required over several years. The placement of plants should incorporate a balanced design that takes account of the following considerations:

- Moisture, exposure, soil drainage and other habitat requirements of the species (information for each species should be available from the plant supplier);
- Disperse small clusters of fire-promoting species (e.g. Common and Grey Tussock-grasses) amongst fire-retarding species (e.g. Pithy Sword-sedge); and

Lawns

It is recommended that one or more of the following indigenous species be considered for lawns, including at least one of the grass species:

- Weeping Grass (*Microlaena stipoides var. stipoides*)
- Windmill Grass (*Chloris truncata*)
- Kidney-weed (*Dichondra repens*)

Lawns are to be kept slashed.

Indigenous Landscaping

The following indigenous species are recommended for areas of indigenous landscaping:

Larger graminoids

- Common Tussock-grass (*Poa labillardierei var. labillardierei*)
- Five-awned Spear-grass (*Pentapogon quadrifidus var. quadrifidus*)
- Pithy Sword-sedge (*Lepidosperma longitudinale*)
- Spiny-headed Mat-rush (*Lomandra longifolia subsp. longifolia*)

Smaller graminoids

- Fen Sedge (*Carex gaudichaudiana*)
- Grey Tussock-grass (*Poa sieberiana var. sieberiana*)
- Wattle Mat-rush (*Lomandra filiformis subsp. coriacea*)

Forbs and low shrubs

- Bidgee-widgee (*Acaena novae-zelandiae*)
- Common Rice-flower (*Pimelea humilis*)
- Milky Beauty-heads (*Calocephalus lacteus*)

The above species can be kept slashed to a height of no less that 100mm if required (e.g. to maintain the functionality of drainage channels).

Shrubs to two metres

- Prickly Tea-tree (*Leptospermum continentale*)
- Tree everlasting (*Ozothamnus ferrugineus*)
- Scrub She-oak (*Allocasuarina paludosa*)

Appendix 4: Tree Protection Zone setup and guidelines

Tree Protection Zones (TPZs) are to be set up around all retained scattered indigenous trees prior to the commencement of construction or works. Tree Protection Zones are to meet the following specifications:

- Protect an area within a radius of 12 times the diameter at breast height (DBH) of the tree trunk, including the area above and below ground; to a minimum of two metres and a maximum of 15 metres radius from the tree trunk.
- Be securely fenced off with high-visibility temporary fencing and appropriately signed as “Tree Protection Zone – Keep Out” or similar.

The following must not occur within TPZs:

- Encroachment of earthworks into more than 10% of TPZ during construction activities unless with advice from a qualified arborist.
- Directional drilling at less than 600 millimetres below the surface, or other directional drilling that is not confirmed to be appropriate (including considerations concerning bore hole width) by a qualified arborist.
- Any tree trunk damaged.
- Lopping that removes more than 1/3 of the retained tree’s crown.

Note: Tree Protection Zones as described here do not correspond to the definition of protection for the purpose of providing native vegetation offsets under Victoria’s permitted clearing regulations.

Appendix 5: Weed control

The weed control techniques detailed in Table 2 are to be applied in areas or within 15 metres of soil disturbance during works and continuing at least two years following the completion of works. If weed outbreaks have not been controlled by this time, weed management is to continue until the weed outbreaks have been controlled (i.e. advances in extent have been halted and weed extent is no greater than it was prior to the commencement of works).

Herbicide is not to be applied in the following situations:

- Wet areas;
- Within two days of rain (before or after); or
- During windy conditions.

All non-target kill within conservation reserves (i.e. cover of indigenous flora killed as a log result of weed control works) is to be documented and provided in an annual report. Non-target kill is not to exceed 1% projective foliage cover in any given area.

Weed control efforts should be intensified in the first two years of this Plan and should aim to prevent any weed proliferation within, or introductions into the adjacent conservation reserves or drainage network. Where mulch is to be used, it should be laid immediately after weeds have been controlled to less than 5% cover, to ensure that weeds do not reinvade. Follow-up weed control, utilising the measures in Table 2, will then be required for the remaining duration of this Plan.

Mulch is not to be laid within any of the conservation reserves as this is likely to destroy indigenous ground layer vegetation and adversely impact the long-term viability of other indigenous vegetation (e.g. by inhibiting natural plant recruitment/regeneration).

Adaptive management is to be applied to all weed control measures provided in this Plan (see Adaptive Management sub-section below).

Where possible, weed control should be co-ordinated with adjacent landowners as well as Macedon Ranges Shire Council and Melbourne Water to minimise ongoing threats from weeds on adjacent land.

Every weed control action must be undertaken by a suitably qualified bushland contractor with experience in weed management within the region.

Table 2: High threat weed species and control methods

Common Name	Scientific name	Objective	Control method	Optimal timing
Blackberry	*Rubus fruticosus* spp. agg.	<5% total combined cover of high-threat weeds* remaining	Cut and swab mature plants using an appropriate herbicide. Spot-spray seedlings with appropriate herbicide.	Spring
Brown-top Bent	*Agrostis capillaris*	<5% total combined cover of high-threat weeds* remaining	Spot-spray using a non-selective or grass-selective herbicide.	Autumn and spring
Cocksfoot	*Dactylis glomerata*	<5% total combined cover of high-threat weeds* remaining	Spot-spray using an appropriate herbicide.	Autumn and spring
Couch	*Cynodon dactylon* var. *dactylon*	<5% total combined cover of high-threat weeds* remaining	Spot-spray using a non-selective or grass-selective herbicide. Repeat applications are always required. Fire before spraying large infestations can improve site access and minimise off target spray.	Spring
Drain Flat-sedge	*Cyperus eragrostis*	<5% total combined cover of high-threat weeds* remaining	Spot-spray with glyphosate (avoid spraying in areas of standing water).	Spring and autumn
English Broom	*Cytisus scoparius*	<5% total combined cover of high-threat weeds* remaining	Hand-pulling of young individuals before seed set. Cut and paint mature plants using an appropriate herbicide.	Winter to spring
Gorse	*Ulex europaeus*	<5% total combined cover of high-threat weeds* remaining	Cut and swab mature plants using an appropriate herbicide. Spot-spray seedlings with appropriate herbicide.	Autumn
Hawthorn	*Crataegus monogyna*	<5% total combined cover of high-threat weeds* remaining	Cut and paint mature plants using an appropriate herbicide. Dig up or hand-pull seedlings from roots (up to 10 cm deep for larger plants).	Any time of year

Common Name	Scientific name	Objective	Control method	Optimal timing
Horehound	*Marrubium vulgare*	<5% total combined cover of high-threat weeds* remaining	Chip out or burn mature plants; spot-spray seedlings with an appropriate herbicide.	Spring (before flowers mature)
Kikuyu	*Pennisetum clandestinum*	<5% total combined cover of high-threat weeds* remaining	Spot-spray using an appropriate herbicide.	Spring to early-summer
Montpellier Broom	*Genista monspessulana*	<5% total combined cover of high-threat weeds* remaining	Hand-pulling of young individuals before seed set. Cut and paint mature plants using an appropriate herbicide.	Winter and spring
Panic Veldt-grass	*Ehrharta erecta*	<5% total combined cover of high-threat weeds* remaining	Spot-spray using a non-selective or grass-selective herbicide. Weed control for this species should occur frequently (i.e. at least three times yearly, twice between September and March) until the species has been eliminated.	Any time of year - at least twice between September and March
Paspalum	*Paspalum distichum*	<5% total combined cover of high-threat weeds* remaining	Burn or slash low invested area. When the grass begins to reshoot, treat with multiple low doses of glyphosate about 4 weeks apart using a dabber or by spot spraying.	Late-winter to Early-spring (burn /slash); Spring to Summer (herbicide treatment)
Prairie Grass	*Bromus catharticus*	<5% total combined cover of high-threat weeds* remaining	Spot-spray using a non-selective or grass-selective herbicide.	Autumn and spring
Radiata Pine	*Pinus radiata*	<5% total combined cover of high-threat weeds* remaining	Ring-bark mature plants then remove when dead. Pull seedlings and saplings by hand.	Any time of year
Spanish Heath	*Erica lusitanica*	<5% total combined cover of high-threat weeds* remaining	Hand pull.	Any time of year
Spear Thistle	*Cirsium vulgare*	<5% total combined cover of high-threat weeds* remaining	Remove any flower heads before they go to seed. Spot-spray leaves using an appropriate herbicide.	Autumn and spring

Common Name	Scientific name	Objective	Control method	Optimal timing
Spiny Rush	*Juncus acutus*	<5% total combined cover of high-threat weeds* remaining	Slash low during spring/summer. Follow up with spot spraying of sprouting clumps and seedlings for minimum of one year.	Spring/Summer
Sweet Briar	*Rosa rubiginosa*	<5% total combined cover of high-threat weeds* remaining	Cut and swab mature plants using an appropriate herbicide. Spot-spray seedlings with appropriate herbicide.	Autumn and spring
Sweet Pittosporum	*Pittosporum undulatum*	<5% total combined cover of high-threat weeds* remaining	Cut and swab mature plants using an appropriate herbicide. Spot-spray seedlings with appropriate herbicide.	All year for cut and swamp: Spring and Autumn for spot spraying
Sweet Vernal-grass	*Anthoxanthum odoratum*	<5% total combined cover of high-threat weeds* remaining	Spot-spray using a non-selective or grass-selective herbicide.	Winter to spring (before seeds ripen)
Toowoomba Canary-grass	*Phalaris aquatica*	<5% total combined cover of high-threat weeds* remaining	Spot-spray using an appropriate herbicide.	Autumn and spring
Twiggy Turnip	*Brassica fruticulosa*	<5% total combined cover of high-threat weeds* remaining	Hand-pull for small infestations	Any time of year
Wild Oat	*Avena fatua*	<5% total combined cover of high-threat weeds* remaining	Spot-spray using a non-selective or grass-selective herbicide.	Winter to spring (before seed-set)
Willow	*Salix* spp.	<5% total combined cover of high-threat weeds* remaining	Pull seedlings by hand. Herbicide stem injection or application to leaves and stem, or cut and paint with herbicide if possible to avoid chemical runoff into waterways.	Summer to early autumn
Yorkshire Fog	*Holcus lanatus*	<5% total combined cover of high-threat weeds* remaining	Spot-spray using a non-selective or grass-selective herbicide.	Autumn and spring

* High-threat weed include species listed in this table as well as any other weed species likely to pose a significant threat to environmental values identified in this Plan

Appendix 6: Vermin control methods

Considering the close proximity to residential properties, the following vermin control methods should be used in conjunction with material published on the DEPI website.

Vermin control is to be undertaken as required based on weekly monitoring by the construction contractor of the presence of vermin within the construction site for the duration of works.

Any vermin control required must be undertaken by a suitably qualified vermin control specialist.

Foxes

- Den fumigation using a carbon monoxide fumigant

It is anticipated that the implementation of the weed and construction material management measures outlined in this plan will aid fox control by reducing above-ground harbour for the species.

Rabbits and hares

- Warren destruction, ensuring that this is undertaken in a manner that does not result in the destruction or degradation of native understorey vegetation or the Matted Flax-lily
- Warren fumigation using a carbon monoxide fumigant
- Trapping

It is anticipated that the implementation of the weed and construction material management measures outlined in this plan will aid hare and rabbit control by reducing above-ground harbour for the species.

Appendix 7: Signage

All signage must be simple, clear and consistent in design. Interpretive signage will be erected at the approximate locations shown in Figure 5 and will contain the following information:

- Simple map showing the locations and names of each of the conservation reserves;
- Clear indication that the purpose of the conservation reserves is environmental conservation;
- A brief description of the environmental values within the conservation reserves, including attractive pictures and/or diagrams;
- Contact details of the current conservation reserve manager; and
- Contact details for the appropriate person to contact to report prohibited activity within the conservation reserves.

Information to deter illegal activity within the conservation reserves is to be clearly legible on these signs and will clearly state the prohibited activities listed below, indicating maximum penalties where they apply:

- Dumping of rubbish;
- Unauthorised works and access (including machinery, vehicles and personnel);
- Allowing livestock or domestic pets to enter the conservation reserves; and
- Removal of rock, organic litter and/or course organic debris (e.g. logs/timber).

All signage is to be updated where required (i.e. when information within the sign is outdated) and maintained in perpetuity.

Appendix 8: General management requirements

Monitoring

Monitoring is to be undertaken on a regular basis to ensure the successful implementation of this Plan and to inform adaptive management processes. The outcomes of management measures are to be monitored for at least two years after the completion of works to ensure impacts have been effectively mitigated.

Adaptive management

This Plan provides actions for a period of two years from the completion of works. The timing of actions and whether they occur is based on adaptive management. By monitoring the outcomes of actions, management may be adapted to ensure the stated commitments in the Plan are upheld. For example, new techniques for controlling weeds may become available and may necessitate adjustment to management actions.

Transfer of responsibilities

On expiry of this Plan, responsibility for the following will be handed over to Melbourne Water:

- Management of the retarding basin and drainage reserves.
- Control of weeds within the retarding basin and drainage reserves.
- The management of indigenous vegetation and landscaping within the retarding basin and drainage reserves.

On expiry of this Plan, responsibility for the following will be handed over to Macedon Ranges Shire Council (excluding responsibilities outlined above):

- Control of weeds on public land (e.g. public open space).
- Management and maintenance of indigenous vegetation and landscaping on public land (e.g. public open space).
- Maintenance of fencing and interpretive signage.
- Maintenance of garbage receptacles.