

Section 2;

The Proposed Works

7. The Proposed Facilities

7.1. Generally.

The following proposal for new facilities in the Cotter Plots to serve users of Equestrian Park has evolved from the following considerations;

- The constraints and opportunities described in chapters 1 - 6.
- The protection and maintenance of the Arboretum,
- Minimising the lengths of new roadworks and service connections to contain costs,
- Providing a safe environment for users and horses by separating vehicular and pedestrian/equestrian traffic,
- Designing circulation to minimise congestion,
- Providing a layout that will enable construction to be undertaken in stages, with the construction of later stages not disrupting the operation of the earlier stages.

The following outline of the proposal is intended to be a diagrammatic guide, the implementation of which will be dependent upon factors that may change over time;

- The priorities of the equestrian community,
- The amount of government funding that is available,
- The ability of the equestrian community to contribute a proportion of the funding,
- The availability of volunteer labour and materials to contribute to carrying out works.

The components of the proposal are described in a logical sequence, however there is no reason that this sequence need be adhered to, and it may become appropriate to construct in a different order if the factors outlined above change.

The impact of construction works upon the use of existing facilities will most readily be achieved if the sequence of construction proceeds from areas adjacent to Equestrian Park outwards toward the western and southern perimeters. The facilities for which there is the most pressing need are located close to the Woolshed road, and future works located behind them where construction access may be made using the existing vehicular track that connects from near the front entry and along the southern and western boundaries of the Plots.

The proposal outlined here is diagrammatic, and prior to the construction of stages of the works detailed documentation will need to be prepared, involving engineering and design consultants where appropriate. This documentation will need to take into account;

- The scope of the works to be undertaken,
- The financial and manpower resources available,
- Any approvals required by authorities,

As works to upgrade the facilities in the remainder of Equestrian Park will be carried out concurrently with the works in the Cotter Plots, some of these may be constructed economically by integrating these works with those in the Plots, as noted.

A priority for some Park users is the construction of a clubhouse facility, however as this is likely to be constructed in the Park area close to the competition grounds, it has not been incorporated into this Cotter Plots Management Plan.



Diagram 10. Overall View of the Proposed Facilities.

1. Existing dirt tracks upgraded to gravel roads, with a new entry off the Woolshed road,
2. Parking areas set out as allocated spaces, all weather standing and access, electricity and water services,
3. Amenities building containing toilets, showers and office space,
4. New yards set out adjacent to the parking area,
5. Covered yards, stables and secure stabling including provision for stallions,
6. Equestrian paths separated from vehicular traffic,
7. Wash bays,
8. Recycling facilities,
9. Equestrian only access to Equestrian Park competition grounds,
10. Clubs' storage and maintenance facilities,
11. Building containing amenities, meeting room & rider's retreat, and offices for visiting officials, vets, and farriery facilities,
12. Extended parking area to accommodate large vehicles, with areas for more yards or portable yards.
13. Existing show jumping arena and cross country course finish.

7.2. How The Design Functions.

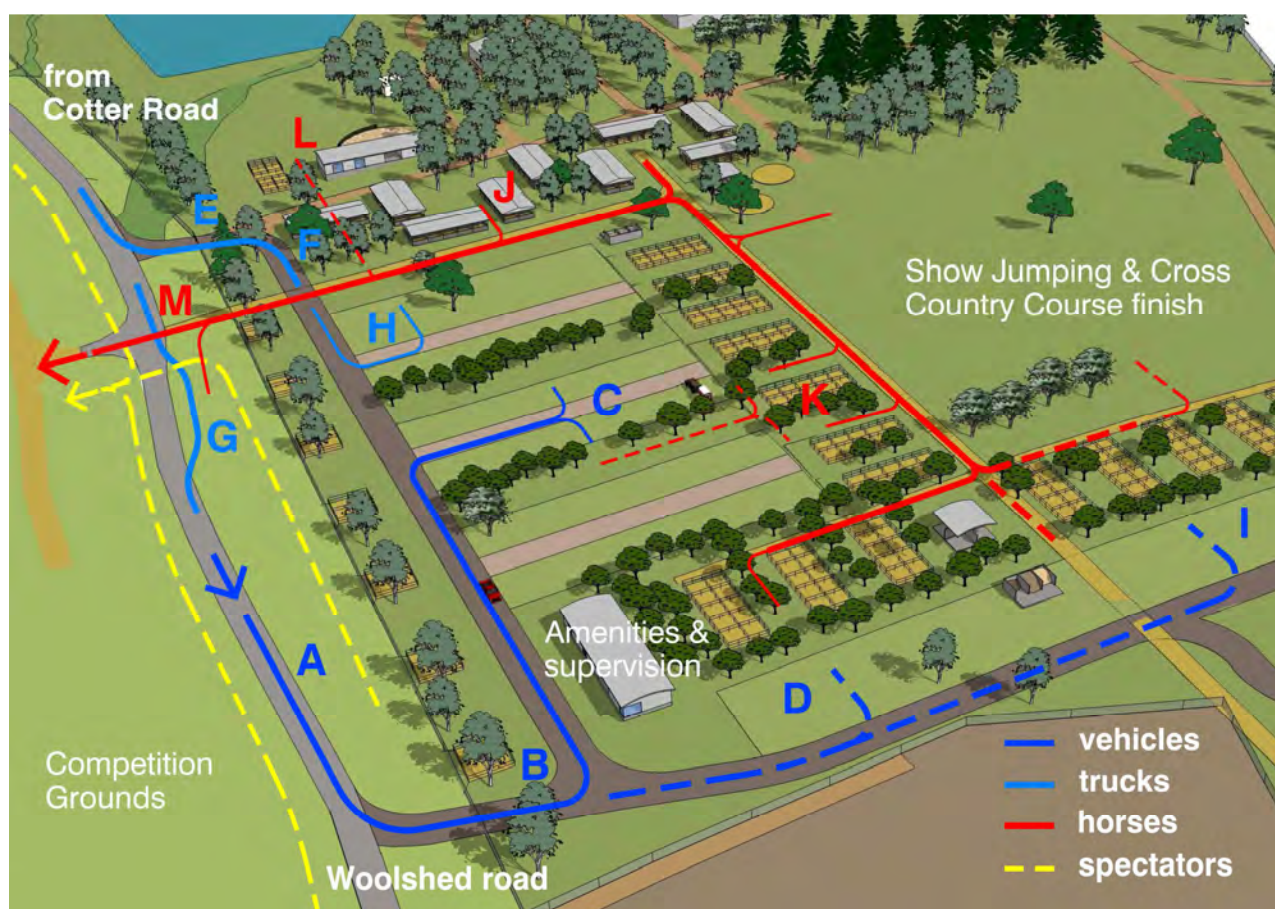


Diagram 11; Functional Diagram of the Proposed Facilities

Events at Equestrian Park vary greatly in size and nature. Different disciplines have different priorities. There is enough space in the Plots to enable clubs to configure the use at a particular event to best suit their purpose. The following notes describe the way that the facilities could be operated during a maximum size competition, where there is the greatest need for the organisation of traffic movements, parking and equestrian movement is required to ensure the safe and smooth conduct of the event.

7.2.1. Vehicular Circulation

All vehicular access to the site is by the Woolshed Road from its intersection with the Cotter Road. Spectator parking is along the verges of the Woolshed road, while competitor's vehicles enter the facilities by the gate at **B**, which may be supervised from the adjacent offices. Any queuing of vehicles waiting to enter can be accommodated along the road at **A** where it will not interfere with equestrian movements.

Vehicle parking is provided at **C** where marked spaces may be allocated prior to an event for the standing of floats and crew vehicles. Electricity and water services will be provided at points each shared by a maximum of four parking spaces. The size of these spaces will accommodate a car and float or small to medium sized trucks.

Competitors arriving with large vehicles and using the stables or covered yards would park at **H** adjacent to the stables area. These vehicles may also stand to unload their

horses in a layby off Woolshed road at **G** or through the service gate at **E** to stand at **F**. Once unloaded, these vehicles may proceed to parking spaces at **H** where longer bays are provided for large vehicles.

Vehicles will generally exit from the Plots by gate **B** and back along the Woolshed road, however if traffic movements are high organisers may also use the gate at **E** as an exit.

With the completion of later stages of construction further parking is provided at **D** and **I** as shown, which will all accommodate vehicles up to large trucks.

7.2.2. Equestrian Circulation

The covered yards and stables (**J**), and yards (**K**), are arranged to be adjacent to the parking areas. At times of heavy use of the parking spaces, horses unloaded from floats and trucks may be walked to the yards by way of corridors between the parking areas, along lines of existing mature trees. The yards then form a separation of the areas of vehicular circulation and the pathways for equestrian circulation, minimising the risk of the two conflicting.

The path for equestrian circulation connects all of the yards, stables and covered yards with the competition grounds, and facilities such as wash bays and sand rolls are located adjacent to it. In this way horses moving between the competition grounds, their holding area and associated facilities without conflicting with vehicular traffic or parking areas. During major events vetting, farriery, massage etc facilities may be located at **L** where they will not interfere with other activities.

Due to the unavoidable layout of the Plots on one side of the Woolshed road and the competition grounds on the other, there must be at least one point where the equestrian circulation must cross the road, and in the interests of safety and controllability this may be confined to one crossing point at **M**, where the entrances on each side of the road to the Plots and competition grounds are exclusively for equestrian use.²¹ In heavy traffic conditions it will be easy for one or two officials to control the crossing.

Stallion holding stables are located at **F** where there is a minimum distance from truck unloading/loading locations, and from which they do not have to pass the other stables or yards in order to reach the competition area.

Wash bays and sand rolls are located where they are convenient to the finish of the cross country course.

7.2.3. Pedestrian Circulation

Conflict between pedestrian and other circulation has rarely presented problems at events held at Equestrian Park, however as the standard of the competition and ancillary facilities, and their capacity to support more prestigious events is improved, there is likely to be an increase in the number of spectators.

²¹ This existing entry to the competition grounds is currently used for vehicular traffic as well, however it is planned to divert all competition area vehicular circulation to a new entry and loop road branching off the Woolshed road approximately opposite **G**. See Diagram 19 which shows the integration of the Plots facilities with the remainder of Equestrian Park. It will be desirable for this loop road to be constructed concurrently with roadworks in the Plots.

Parking for spectators' cars is provided along the verges of the Woolshed road, close to the competition areas. With all the large equestrian vehicles located within the Cotter Plots this area will accommodate a large number of cars, and the circulation of people from this area to the competition grounds will not interfere with equestrian circulation.

During large events equestrian support crew vehicles that are not required for the transport of horses could be required to park in this area also, to free the maximum number of parking locations within the Plots for floats, and to minimise the amount of vehicular traffic within the Plots.

While this area lies outside the Plots, it would be an advantage if some upgrading of the verges to eliminate areas that may become waterlogged were to be undertaken concurrently with the work in the Plots.

7.2.4. Security

The entire Plots area is currently surrounded by a 1.8m 'man proof' chain wire fence, which is generally in serviceable condition but will benefit from additional maintenance. By having only two points of access at **B** and **E** the vehicles and pedestrians entering the Plots area may readily be monitored if required. A higher level of security may be gained if competitors and support crews are issued with identity passes in order to gain access to the Plots.

Prestigious events held here will increasingly attract elite riders and valuable horses, for which increased security may be required. This may be accommodated by enclosing a part of the stabling area with a perimeter fence which may be more closely monitored. Should it be felt desirable to employ security staff for this monitoring during the night, a small office could be incorporated into the stable blocks in this area.

7.2.5. Emergency Access & Egress

There are four routes by which emergency vehicles may gain access to the Plots, and equestrian vehicles may evacuate the site.²²

The main access points at **B** and **E** will allow the most ready egress to the Woolshed road and be familiar to contestants, having been their means of entry. Additional relief egress may be gained via area **I** onto the vehicle track that runs around the western and southern perimeters of the site, leading to an egress to the Cotter Road/Woolshed road intersection to the south, and onto the cross country course to the north. Access to the southern exit may also be gained through the maintenance area.

These routes are of a serviceable earth formation, however there are a number of locations on the southern route that may become waterlogged as a result of extended or heavy rain, and it will be desirable to improve the surface at these locations should all weather trafficability for trucks be required.

These same routes may also be used if access is required for emergency service vehicles in the event of medical or police attendance being required, or in case of fire,

²² Refer to Diagram 19

with the southern entry at the Cotter Road intersection incurring the least interference with the conduct of an event.

An equestrian evacuation ambulance float may be kept in the maintenance area, from where it may quickly gain access to the competition areas via the gate at **E** or along the western track and into the cross country course.

7.3. Roadworks and Parking.

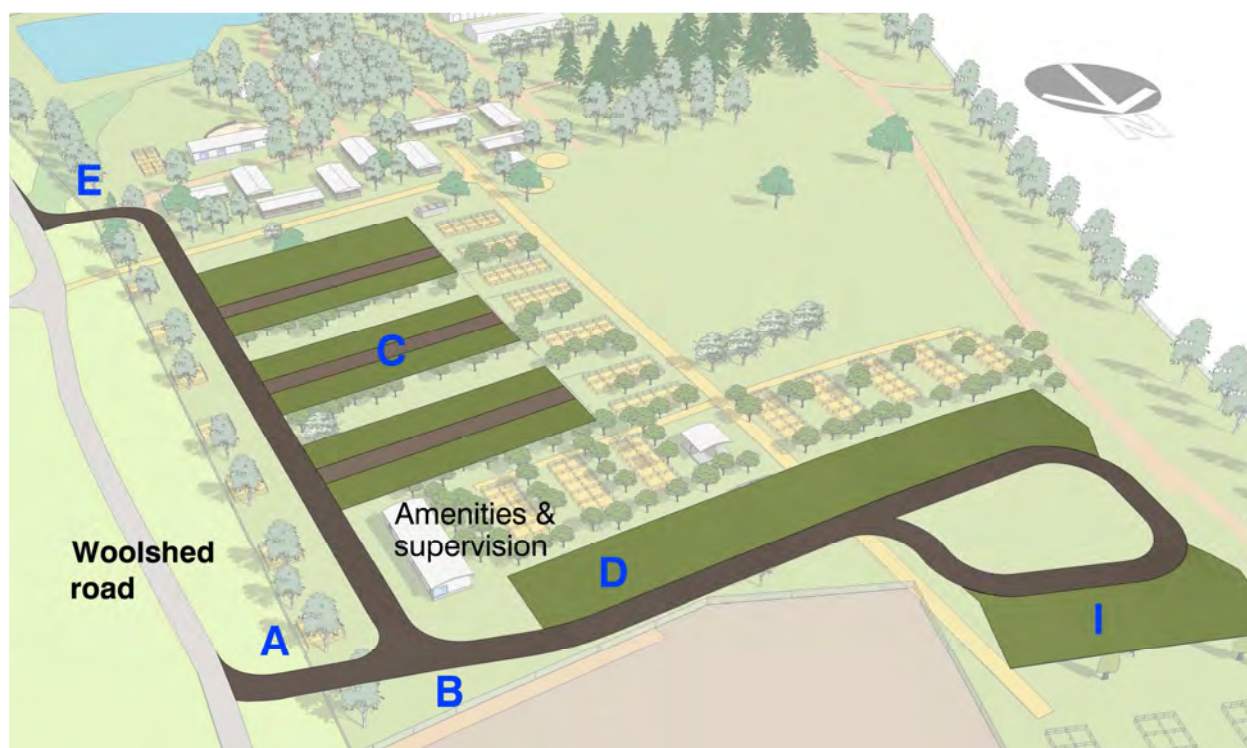


Diagram 12; Roadways and Parking.

Good all weather road access is one of the highest priority components of the proposed works, to have reliable access for equestrian users and also for construction vehicles for later stages.

The proposed roadways shown generally follow the routes of existing vehicular tracks, so that the disturbance to the existing vegetation may be minimised.

The road from **A** to **B** and on to **E** with a new gate at A should be the minimum work to be carried out as the first stage of the works; the additional road from **B** to **D** and **I** may be undertaken as a later stage if limited financial resources are required rather for more urgent works.

Pending advice from Civil Engineers regarding the quality of the foundation material and the carrying requirements of the new pavement, it is anticipated that these roads will perform adequately if constructed with a gravel surface over a well constructed & compacted gravel base and sub base, graded to drain surface water to swale drains on one or both sides. These drains may be permeable or otherwise enable the runoff to percolate into the site clear of the roadway and parking areas. The roadway should be no

less than 6m wide to allow trucks to pass, and the speed of traffic should be contained to, say, no more than 15km/h for safety and to conserve the road structure.

The new gate in the existing fence at **A** should consist of a double vehicle gate of at least the same width as the roadway and an adjacent personnel gate to allow access to the amenities block when the facilities in the Plots are not being used, and otherwise to keep vehicular and pedestrian traffic separated for safety. The existing gate at **E** may require upgrading to a similar standard, and should be provided with an adjacent personnel gate.

The parking areas at **C** should be the first constructed and so will need to cater for cars, float trailers and up to large trucks. The parking areas have been designed as rows of bays on each side of three spine access ways. These access ways may be of a similar construction and width to the roadways. Traffic here will be expected to move more slowly but will be turning and manoeuvring in and out of the parking bays which may impose different construction requirements - to be advised by Civil Engineers.

The ground in the areas shown in green on Diagram 12 where the parking bays are located should be stabilised to allow vehicles to stand without becoming bogged in wet weather. As these areas adjoin corridors containing existing mature shrubs and trees it is desirable that the ground surface permit surface water to readily percolate into the ground, avoid an adverse impact of construction around the plants' root zones and prevent the compaction of the soil in the same areas during normal use.

As the parking areas can be expected to be used on a maximum of 2 - 3 days a week it is likely that ground covers will grow on these surfaces. It is also desirable from a visual point of view to maintain these as green areas. The advice of Civil Engineers and landscape designers is required regarding the suitability of using plants as a ground stabilising device, or construction a load bearing surface that will permit the growth of ground covers through them.

The strip of ground between the roadway from **B** to **E** and the fence on the eastern boundary should also be considered for stabilisation to permit parking and the erection of yards as shown.

7.4. Amenities and Office Building.

The second most urgent need that was identified for the new facilities is to provide toilet and shower amenities.

The location that is shown for this building is desirable as it is;

- Central to the parking and yard areas,
- Close to existing service lines (electricity, water, sewerage),
- Sufficiently close to the competition grounds and existing kiosk to allow access to it even if the Plots facilities are not being used,
- Adjacent to the main vehicular entry to the Plots, so that an office incorporated in the building may be used to monitor / control access to the Plots.

- As this building is being constructed at an early stage, it will be desirable to incorporate additional space that may be used for storage, meetings and office accommodation for officials.

It is unclear from building codes or usage at similar facilities what number of amenities need to be provided, however it is probable that the equivalent of ten wc's and ten showers being provided for each of male and female users, as well as one or more amenities suitable for disabled users will be sufficient. If this proves to be inadequate, further amenities will be provided at a later stage in the rider's retreat building.

7.5. Stables, Yards and Associated Facilities.

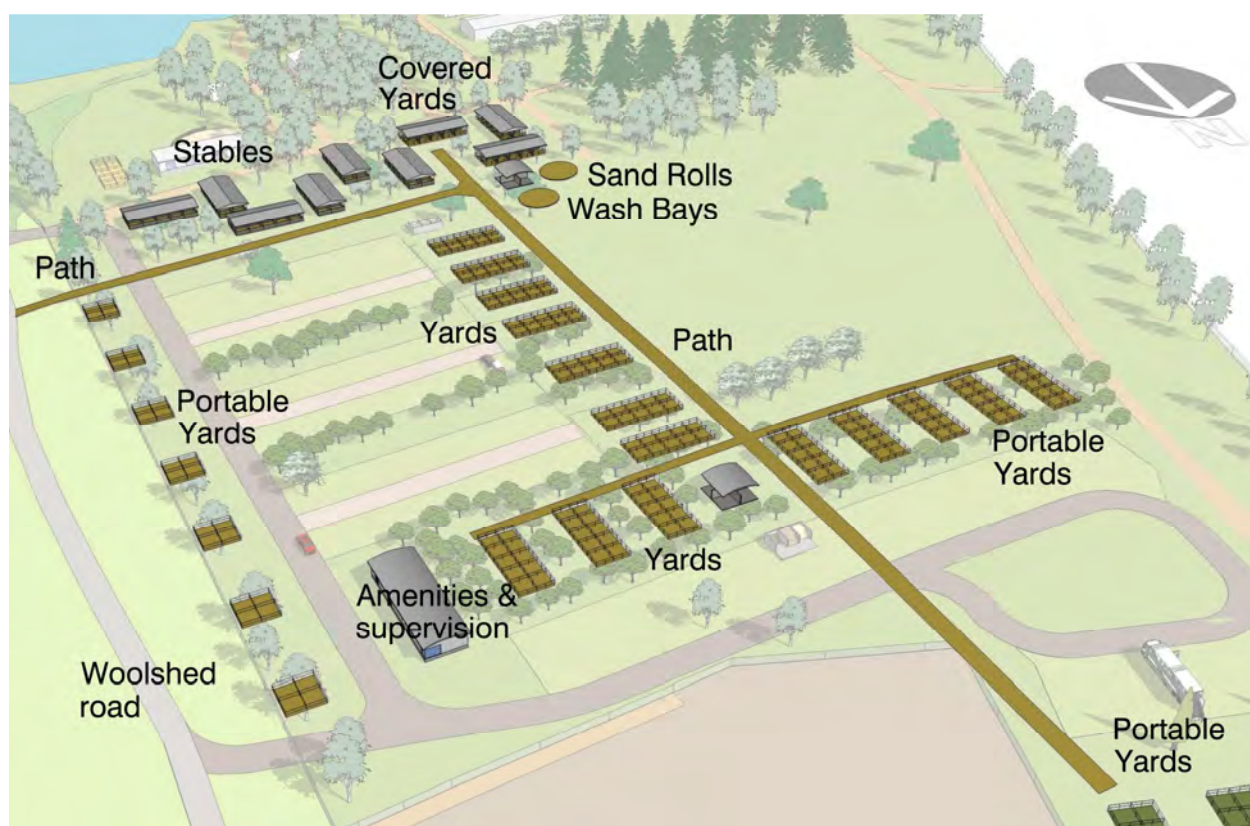


Diagram 13; Stables, Yards & Associated Facilities

These facilities will be constructed in stages in response to demand and as resources permit. The proportions and locations of yards, covered yards and stables may be varied to suit the requirements of user clubs, but it is strongly recommended that the stables, and in particular any secure stabling for valuable horses and stallions, should be located where shown, close to the competition grounds and to loading areas, to ensure security and safety.

7.5.1. Circulation

The pathways for equestrian circulation should be constructed to provide a forgiving footing for horses which will not necessarily be shod, and be of a width that will allow horses being led or ridden to safely pass. There is no standard for such a pathway and

the advice of Civil Engineers needs to be sought to specify the construction, but it is probably that a gravel pathway on a well consolidated base layer, with a fine gravel or sand surface about 4m wide will be adequate. Paths constructed at later stages at the extremities of the network may be of a narrower width, depending upon the experience of the use of the main paths constructed with early stages.

The construction should be permeable to minimise the ability of the existing soil to absorb surface water, in order to protect the existing vegetation. When set out on site, the pathways will be expected to deviate from the straight runs shown on the diagram to protect existing vegetation. This will also provide a visually attractive setting.

7.5.2. Yards

There are few recognised standards for the design of yarding appropriate to this type of facility, and the experience of yards previously constructed in similar facilities is probably as good a guide as any. There is an obvious advantage in minimising the cost if yards are grouped, however the exact locations and sizes of the groups will need to be assessed for each stage of construction.

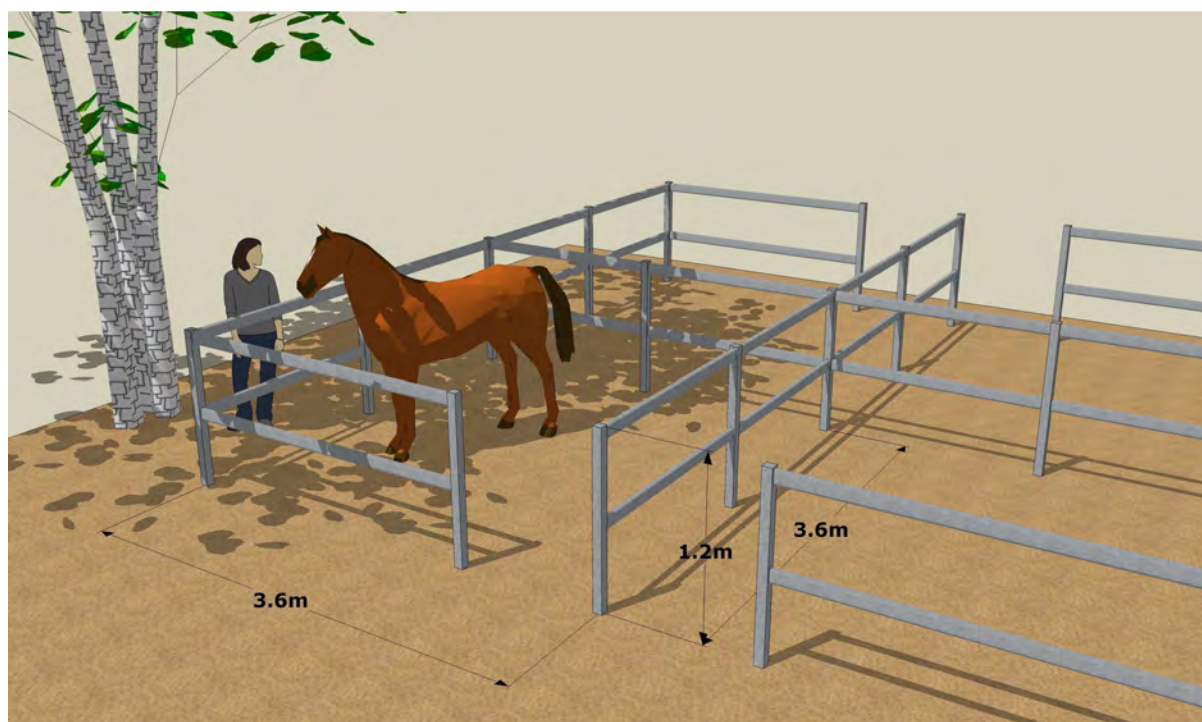


Diagram 14; Yards.

The groups of yards as shown on the diagram have been located where there are no trees that it is considered important to preserve, however the vegetation that is in these areas is well established and it will be to the advantage of users of the yards that many of these specimens be retained to provide shade and visual appeal. This will require that the yards be set out at each location to best suit the vegetation and provide access to the pathways and parking areas, so the somewhat regimented appearance shown in the diagram will not occur.

It will be an advantage if the yards may be constructed such that a roof may be added at a later stage if this is thought desirable. The following specification may be appropriate

for the design of the yards and is based upon common practice; however this may be varied in response to the experience of their use, the availability of materials and so forth.

- Size approximately 3.6 x 3.6m
- Steel fences to all sides to 1.2m high, with an intermediate rail,
- Verticals to be min. 65mm dia round or square section, securely capped,
- Rails to be similar to verticals, or ~100 x 40mm oval section proprietary yard rails.
- Gates or chains fixed on one side may be provided for access.
- Floor to be of similar construction to the pathways, graded to fall for drainage. The ground in the areas nominated for yards generally falls naturally, however some local regrading to make the ground more level may be required.
- It may be desired to make the front panel hinged so that the entire front fence may be opened to facilitate maintenance using a tractor. However, this will require stronger footings to the front posts and a secure anchorage to the ground for the swinging post of the front panel. Clearance from adjacent plants will also be required for the machinery.

7.5.3. Covered Yards

The specifications for the covered yards are similar to those for the yards, with the corner posts extended to support the roof.



Diagram 15; Covered Yards

- The roof need only be of lightweight (metal deck) construction, with a minimum height to the underside of about 2.5 - 2.7m. If an overhang is provided at the front it will provide a little more protection to the gate. It needs to have gutters that, preferably, drain to a small tank at the end of each bank of covered yards that can

provide water for the horses or cleaning purposes. Reticulated water should also be provided to a stand pipe and hose cock near the yards.

- The walls and gate may be fitted at the time of construction or at a future date with solid or mesh panels as required.
- It may be desirable to have solid floors (concrete, brick etc) which will be required to grade to a spoon drain where runoff is collected. As contaminated water this runoff must be prevented from draining into Yarralumla Creek, and should be retained and allowed to percolate into the ground or evaporate, or may be treated using a reed bed or similar to clear the water of nutrients. The recommendations of Civil &/or hydraulic engineers should be sought to determine the most appropriate method.
- These yards will ideally be fitted with electric lighting which should be switched in such a manner that they cannot be left on continuously.

7.5.4. Stables

Stables may be constructed in a similar manner to the covered yards with solid walls, or using pre cast concrete for the lower portions of the walls. The most economical construction method will depend upon building conditions at the time of construction.

7.5.5. Portable Yards

Many competitors bring their own yard fences, and their having permission to erect these and suitable locations for doing so will depend upon the management of the Plots facilities. Organisers of large events may also hire commercial portable yards to be erected for hire to competitors.

The areas that are most likely to be suitable for erecting portable yards are;

- Adjacent to the eastern fence line to the Woolshed Road,
- In the areas most remote from the main facilities, to the west and north west, where permanent yards would be less used, being required only when large events are being held.

It should be ensured that the ground conditions where portable yards are to be used is of a secure footing and not prone to waterlogging.

If competitors are to be permitted to use their own portable yards, locations for their erection will need to be marked and labelled for allocation

7.5.6. Wash Bays

Wash bays should be constructed with a concrete floor and solid dividing walls between bays, and desirably will be roofed. They will be most economically constructed if grouped in pairs or fours. They should be located in several places to be convenient to the yards and stables, so will probably best be included with the stages of construction of the adjacent yards.

As with the covered yards and stables, the runoff water should be treated as being contaminated and contained for percolation, evaporation or treatment.

7.5.7. Sand Rolls

It is desirable to have sand rolls available, probably in close proximity to the wash bays, and in several locations.

As these are minor works their locations and construction may be left to be determined after the main works have been completed, and can probably be built by volunteers on a casual basis.

7.6. Services

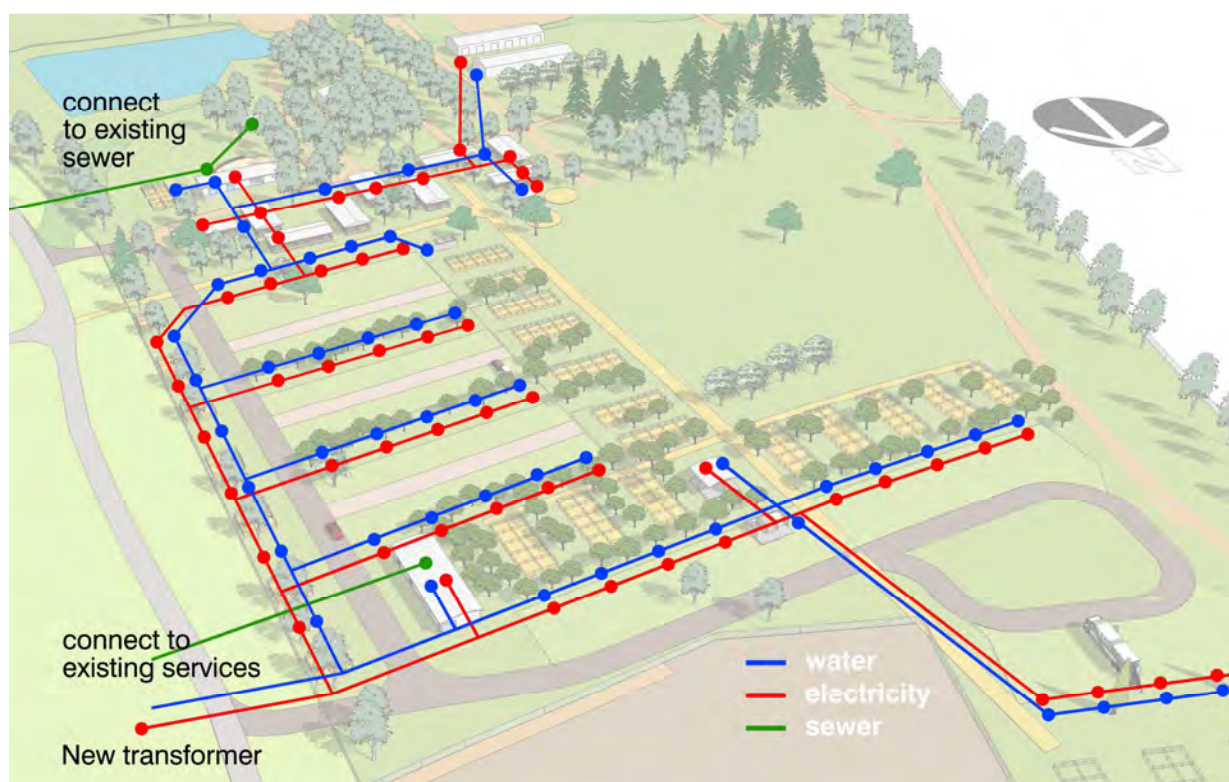


Diagram 16; New Services

The existing electrical, water supply and sewerage services in the Cotter Plots will not have the capacity to provide services to the proposed facilities, although they may suffice to serve the requirements of the arboretum. Good reticulated electrical and water services will be an essential component of the new works in order to provide for a high quality facility.

New services will need to be designed by appropriate Electrical & Hydraulic Engineers. As the work will be undertaken in stages over a planned period of ten years, it will be important to ensure that works undertaken in early stages will have the capacity to serve the full load of the completed works. This will mean that the early stages of work will cost more than might otherwise be required for works to serve only those stages.

The new electricity supply will require the installation of a new transformer cubicle. The locations of new connections to existing electricity, water supply and sewerage services will have to be determined by the Design Engineers with regard to the locations and

capacities of the existing services available to the site. It is beyond the scope of this Plan to be able to determine the locations or likely costs of these connections.

The design of the outlets to provide power and water to the parking areas and the stables will need to ensure that users connections to these outlets (hoses and electrical leads) will not interfere with the movement of horses and pedestrians.

The advice of Civil and Hydraulic Engineers will also be required regarding the collection and disposal of contaminated runoff water from the stables and wash bays, as previously noted. It has been assumed that the amount of spilt water from taps located in the parking areas will not be such that sumps and drainage will be required, as they will be located in areas of existing mature vegetation where spillage is not likely to cause damage or inconvenience.

7.7. Ancillary Buildings

As well as the amenities and office building mentioned previously (Section 7.4), new ancillary buildings will be constructed to provide support facilities for;

- A Riders Retreat, including facilities for officials, support professionals and event organisers,
- The storage and maintenance of clubs' equipment,
- The secure storage of equipment required for the maintenance of the arboretum, the Cotter Plots and the Equestrian Park competition grounds,
- Amenities for maintenance staff.



Diagram 17; New Buildings.

7.7.1. Riders' Retreat

This building will serve several functions, to provide;

- An area where riders may meet and relax away from the competition grounds, horses and spectators,
- A meeting room where riders may be briefed by officials,
- Offices and storage rooms for officials. These functions would move here from the Amenities building as the equestrian facilities reach their completion and large events are held more frequently, allowing the rooms in the Amenities building to be used for the supervision of the parking areas.
- Amenities to serve the building and as back up amenities for riders and support staff during large events,

The meeting room may also serve for meetings held outside competition times, and possibly for club meetings until the clubhouse is constructed in the competition area. It may be equipped with a small kitchen, although for major events will probably be better served using a mobile catering kitchen, provision for the parking of which may be provided adjacent to the building.

It may be cost effective to provide a terrace break out to a small meeting room rather than having a large meeting room.

It will be desirable to have a room available for veterinary staff attending events, and to locate isolation yards, a crush and examination facilities, trot up area and parking spaces for the vets' vehicles and an equestrian ambulance.

Similarly a first aid room with access to a parking space for an ambulance would best be located here.

Adjacent to this building may also be a convenient location for visiting farriers to operate. This will probably be adequately accommodated by several yards, preferably covered, and parking spaces.

7.7.2. Club Stores.

This building will provide covered and possibly secure storage for the equipment used by clubs for their events and an area where construction and maintenance may be carried out. This equipment is currently stored in the open in areas where there is a risk that arboretum specimens may be damaged, and where it is subject to the vagaries of the weather.

It is unclear at this time how much space for how many clubs may be required, however the need may be satisfied by the erection of off the shelf agricultural sheds using a standard ~12 x 6m module, which may be extended as required.

Access to this area may be obtained at any time using the southern entry off the Cotter Road / Woolshed road intersection, so that vehicle movements and maintenance

activities will not interfere with any event taking place in Equestrian Park or the Cotter Plots.

7.7.3. Grounds Maintenance Store.

The area available in the existing maintenance shed will increase when club equipment is relocated to its own storage building. This will provide space for the storage and equipment required for the maintenance of Equestrian Park, the Cotter Plots and the Arboretum. This will include tractors and their accessories, mowers, chain saws and general tools, and horticultural tools. Some of this equipment is currently stored in the open adjacent to the shed.

This building has been renovated recently, although additional maintenance and renovation may be required to render it fully serviceable. It is provided with electricity and water (reticulated and rain water tank).

7.7.4. Maintenance Staff Amenities.

The existing former cottage adjacent to the Maintenance Shed (7.7.3.) is currently used for this purpose, however it requires some renovation and the removal to the club stores of equipment stored there to make it fully serviceable.

This building is constructed with painted asbestos cement sheet cladding, which should not be molested. It contains toilet and shower amenities and a small kitchenette serving a dining area, and other rooms suitable for stores. The internal finishes require repainting and tiling, and the fittings in the bathroom and kitchenette may require maintenance or replacement.

It is provided with electricity, water and sewerage, although the sewerage is managed with a ground absorption system, and it will be desirable to replace this with a connection to the town sewerage system when the Riders' Retreat is constructed nearby.

7.7.5. Recycling Facilities.

The yards and stables will generate a considerable volume of manure and used bedding material and wasted feed, which should be regarded as an asset on site and managed using composting bunkers.

Their design and construction may be the subject of further investigation; however it is probable that their function will be accommodated by their being constructed;

- In banks of three adjoining bins with three sides, approximately 2.5m wide x 3.5m deep x 1.8m high, to allow a tractor and front end loader to handle their contents.
- Having a concrete slab floor and apron, with walls of solid masonry, designed by an engineer to withstand knocks from machinery.

The contents of each bin should be turned into the adjacent bin at regular intervals until the compost is of a suitable quality to be used in the maintenance of the arboretum, or made available for sale to the public should there be a surplus.

It is difficult to estimate how many such sets of bins will be required, however additional installations may be constructed in the future in locations that suit the management of the Plots. They will need to be located such that a tractor may have access to them for handling and for the removal of compost to a vehicle nearby.

They should also be located where the Plots users have convenient access to them. The management of the Plots may make a requirement of the use of yards and stables that the users clean their yards and remove manure and spent bedding etc to the composting area(s). This is commonly achieved by way of a deposit being required for the use of the facilities, returnable only upon verification that the yards have been cleaned. Such management will necessitate that barrows and rakes be available and may require that more installations are provided than are shown on the diagram to maintain reasonable walking distances to them.

The management of general waste in the parking areas must be considered also, and may be catered for by locating sets of standard domestic waste & recycling bins convenient to the parking areas for pickup and disposal by the city waste management vehicles or commercial contractors.

The Cotter Plots Management Plan

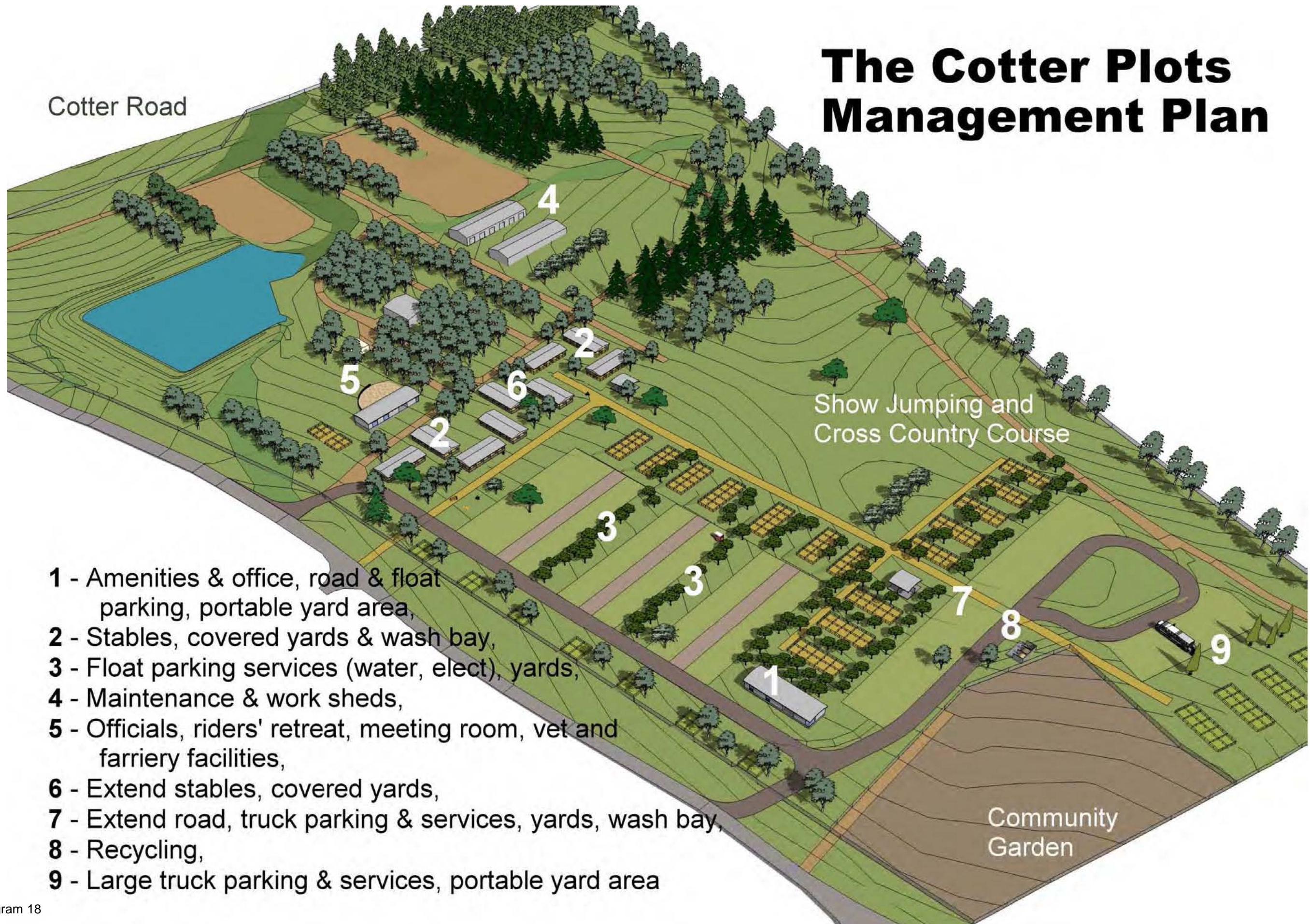


Diagram 18

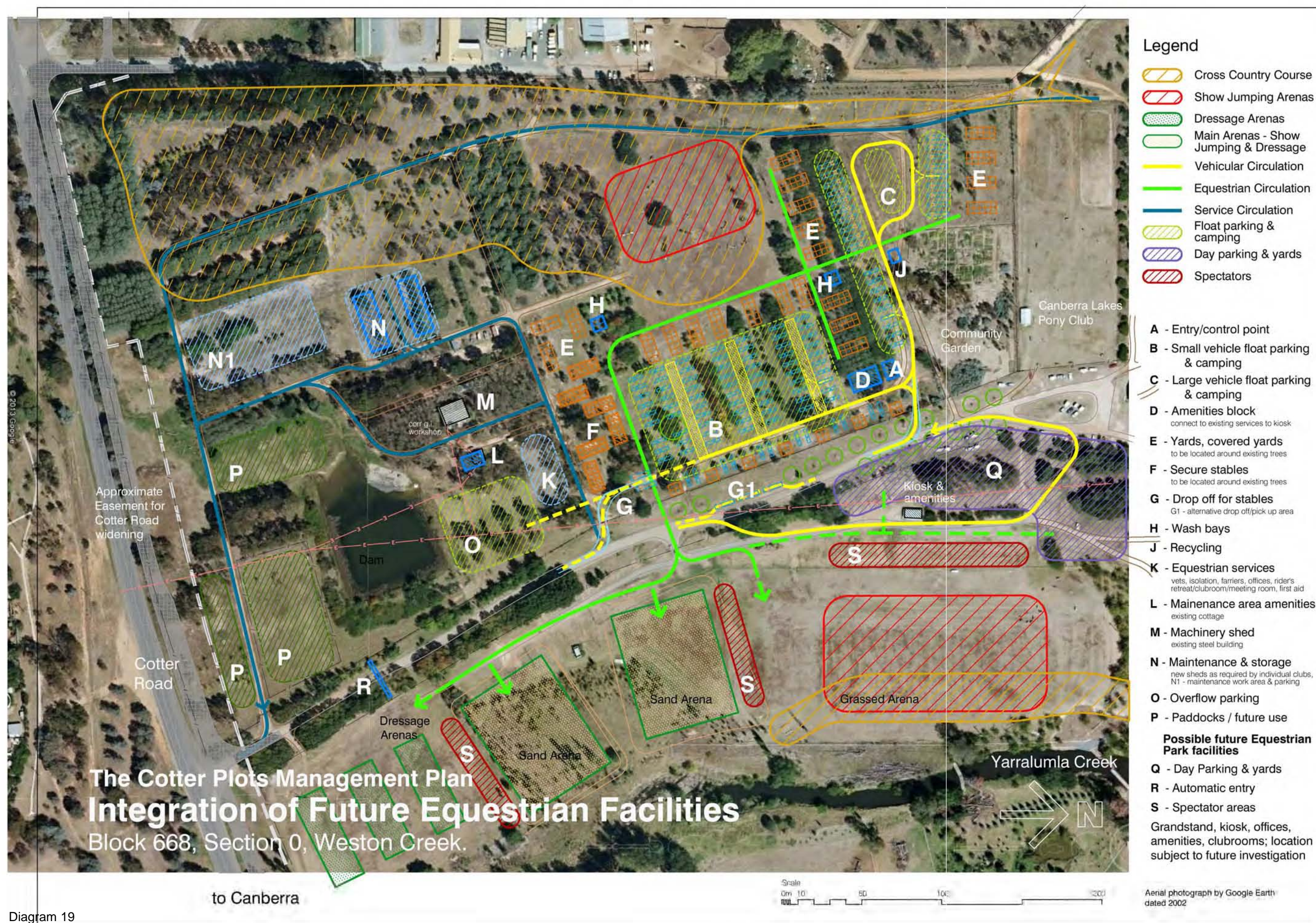


Diagram 19

8. The Environmental Management Plan

8.1. Generally.

This Plan provides a statement of the environmental policies to be adopted for the use and development of the Cotter Plots at Equestrian Park.

8.2. Water

8.2.1. Issues

The Cotter Plots slope to the flood plain of Yarralumla Creek. Surface water run-off can cause flooding, erosion and water logging to the facilities between the Plots and the Creek.

In periods of high or sustained rainfall low lying sections of the Plots are susceptible to water logging.

The Cotter Plots receive surface water outside the direct catchment from Curtin through a culvert under the Cotter Road. These drainage lines are mapped as part of the Cotter Plots Strategic Plan.

EP will also have to manage storm water flows from hard surface constructions including roofs and roads, and waste water from wash bays, machinery wash down areas etc.

8.2.2. Policies

- Any development should be mindful of existing drainage lines and ensure that infrastructure is not located in such a way as to cause longer term maintenance problems or to transfer flooding, water logging or erosion problems to other parts of the Park.
- Any development proposed on drainage lines should include consideration of water flow management in the Park.
- Installation of water tanks should be considered with any new roofing on site
- Water from wash bays should be managed to meet best practise Water Sensitive Urban Design practises and so as not to flood other parts of the Plots or have a negative impact on trees.
- Trails should be re-routed or upgraded to ensure that water moves off the trail and does not form pools or erosion channels.

8.3. Trees

8.3.1. Issues

The trees in the Cotter Plots are remnants of plantings by the now discontinued Research Unit of the ACT Government. The surviving material represents the species which have grown through difficult times of neglect, drought and fire. As such the trees now form an important data set.

This information is valuable to help inform decisions about new plantings. Some plots are of little value such as the *Sorbus domestica* but others are extremely important. The best example of this is the large planting near the Cotter road of *Pinus torreyana*, the rarest pine species in North America. Many other plots or individuals are important for seed collection such as the *Pinus gerardiana*, *Quercus variabilis* and *Cupressus duclouxiana*. Seed of these species cannot be obtained from elsewhere at this time. The trees have been mapped and classified and in any development due consideration should be given to the merits of the species affected by development.

The increasing use of the Plots as a parking and activities area means that there needs to be higher vigilance regarding damage to trees above and below ground level, including their access to ground and surface water.

Providing a sympathetic approach is adopted the use of the area can be enhanced by careful consideration of the trees on the site whilst preserving the values indicated above.

8.3.2. Policies

- No trees are to be removed from the Plots unless they have been classified by the Cotter Plots Strategic Plan as belonging to a class of tree that can be removed and the EPMG agrees that the removal of the trees is necessary.
- Any trees likely to be overhanging or overshadowing areas of planned high use or new infrastructure should be professionally assessed for their safety before development proceeds or as part of a development application
- Horses are not to be tied to any trees at any time.
- Floats or yards are not to be parked or erected under the drip line of trees.
- Any surface strengthening for roadways, parking areas or yards is not to impinge inside the drip line of trees.

8.4. Waste

8.4.1. Issues

Horses produce substantial amounts of waste material composed of faeces and bedding. This will need to be either used in the Park for surface improvement or removed to reduce odour and other impacts on the surroundings.

8.4.2. Policies

- Identify sites for manure piles and require park users to clean yards and stables and dispose of waste in designated areas.
- Institute a system of removal of waste from the site.
- Manage contaminated surface water runoff to prevent nutrient laden water from entering the Yarralumla Creek catchment.

8.5. Structures

8.5.1. Issues

Horse property facilities such as stables, yards and exercise areas need to be well designed and managed to avoid environmental and neighbourhood problems such as:

- excess odour (especially from urine),
- excess noise (potential concern to neighbours),
- rodents (attracted to stored feed and spilt feed),
- dust and mud, and
- pollution of water resources from water run-off.

8.5.2. Policies

- Construction of new facilities will be consistent with the Cotter Plots Strategic Plan and approved by the Equestrian Park Management Group.
- Design and manage stables to control odour from urine - install an impervious floor, regularly clean stable floors and replace bedding material.
- Manage manure so that odour problems are avoided - regularly remove manure from stable collection bays and around intensive work areas.
- Surface high horse traffic areas with a suitable material that will prevent dust or mud problems.
- Keep horse feed in sealed containers, promptly clean up spilt feed, and use baiting for rodent control. It also helps to use large containers when feeding horses so that they don't spill much feed on to the ground.
- Install gutters on stables and shelters to control storm water

9. Links

9.1. Generally.

The reader may find the following links to be of value. Please note that they are correct as shown at the time of writing (June 2014) but may not remain active at later dates.

- NSW Department of Primary Industries; Agriculture - Horse Yards and Handling Facilities - www.dpi.nsw.gov.au/agriculture/livestock/horses/management/general/yards
- NSW Eventing Organisers Handbook - <http://www.eventingnsw.com.au/site/equestrian/eventingnsw/downloads/admin/Event%20Managenent/2009%20Eventers%20Handbook.pdf>
- Australian Horse Welfare Protocol 2011 - http://www.australiananimalwelfare.com.au/app/webroot/files/upload/files/AUST_HORSE_WELFARE_PROTOCOL_FINAL_2_2011_2.pdf
- Code of Practice for the Welfare of Horses - Victorian Department of Environment and Primary Industries - www.dpi.vic.gov.au/agriculture/about-agriculture/legislation-regulation/animal-welfare-legislation/codes-of-practice-animal-welfare/code-welfare-of-horses
- National Horse Standards and Guidelines Update from AHA, 2009 - <http://www.horsecouncil.org.au/ahic/index.cfm/horse-welfare/downloads/national-horse-standards-and-guidellines-update-from-aha-pdf/>
- NSW Animal Welfare Code of Practice No 3 - Horses in Riding Centres and Boarding Stables, NSW Department of Primary Industries - www.dpi.nsw.gov.au/agriculture/livestock/animal-welfare/general/aw-code-3
- NSW Department of Primary Industries; Agriculture - Fact Sheet 16 keeping horses - <http://www.dpi.nsw.gov.au/agriculture/livestock/animal-welfare/general/dogs-horses/horses/awfact16>
- The Urban Stable Yard; HorseLandWater South Australia (Adelaide) - http://www.horseslandwater.com/zdocument/file/103/Urban_FINAL_ONLINE.pdf