

# 5. MANAGEMENT ACTIONS AND DIRECTIONS

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The following recommended management actions or directions are grouped according to the Strategic Management Plan's three core areas of vegetation and habitat management, water quality, and managing recreational uses and impacts (Section 5.2 to 5.4 below).

Actions and directions are presented, by subject area, in priority order – very high, high and medium.

Recognising that funding can come from many sources, and often be linked to specific issues or programme objectives, the Strategic Management Plan has not ranked or prioritised actions and directions as a single list of the catchment as a whole – allowing instead for different issue areas to proceed at different rates as funding becomes available or collaborative project emerge.

These recommendations are summarised graphically in the Catchment Masterplan – Figure 10 - and in the following Table 4.

## 5.1 CO-OPERATIVE LAND AND RESOURCE MANAGEMENT INITIATIVES

Several of the land and resource management actions recommended in this Strategic Management Plan require, to varying degrees, the co-operation and active participation of the catchment's major land owners and managers.

Beyond Sutherland Shire Council and a number of State government agencies, notably the Land and Property Management Authority (formerly the Department of Lands) and the National Parks and Wildlife Service, this Strategic Management Plan also includes actions that will be dependent on the co-operation of the following bodies:

- ANSTO;
- WSN Environmental Solutions; and
- the Gandangara Local Aboriginal Land Council (where not limiting the Land Council's wider land use/development options).

Several actions also involve, or target, the large number of private/residential landholders in the catchment's north-east.

Both ANSTO and WSN Environmental Solutions have clear land use priorities and on-going uses/activities for their respective lands. As described above, both also have environmental management and monitoring systems in place in regard to their operations. However it cannot be assumed that bushland within the ANSTO and WSN Environmental Solutions areas is intrinsically protected, as both are commercial enterprises and can be expected to seek the

economic use of their land. As a Commonwealth body ANSTO is also not subject to Local or State planning regulations.

Although the Gandangara Local Aboriginal Land Council has far less clearly defined land use plans for that large proportion of the catchment which is under, or is in the process of being transferred to, their ownership they generally indicated a desire to protect and conserve the valley and steep slopes along Mill Creek and tributaries. The Land Council also chose to be less closely involved in this Plan's preparation (as discussed in Section 1.3.2). However the Land Council has clearly expressed its requirement to keep open its land use and development options across their extensive landholdings on the catchment's flatter western uplands adjacent to Heathcote Road.

Therefore this Strategic Management Plan's approach has been framed to achieve improvements in biodiversity protection, water quality and recreation management across the catchment – but without being completely reliant on the participation of these major private or commercial enterprises. These “foundation” actions can be implemented largely independently by Council, the MGRSI, and other public land managers to achieve the desired natural resource management and water quality improvements.

However such a partial or fragmentary approach does limit the Strategic Management Plan's overall effectiveness. So a number of “additional” management actions have been identified, which will require the co-operation of the catchment's major private land holders/managers. These “additional” actions range from minor adjustments to existing monitoring programmes, through co-operative on-ground operations, to lease or land management/transfer arrangements.

These “additional” management actions, that will require the co-operation or involvement of catchment's major private land holders/managers, are shown boxed in pale yellow in the following sections of this chapter – as indicated below.

<p>➤ <b>Action ##</b> #####</p> <p><b>Priority - #####</b></p>
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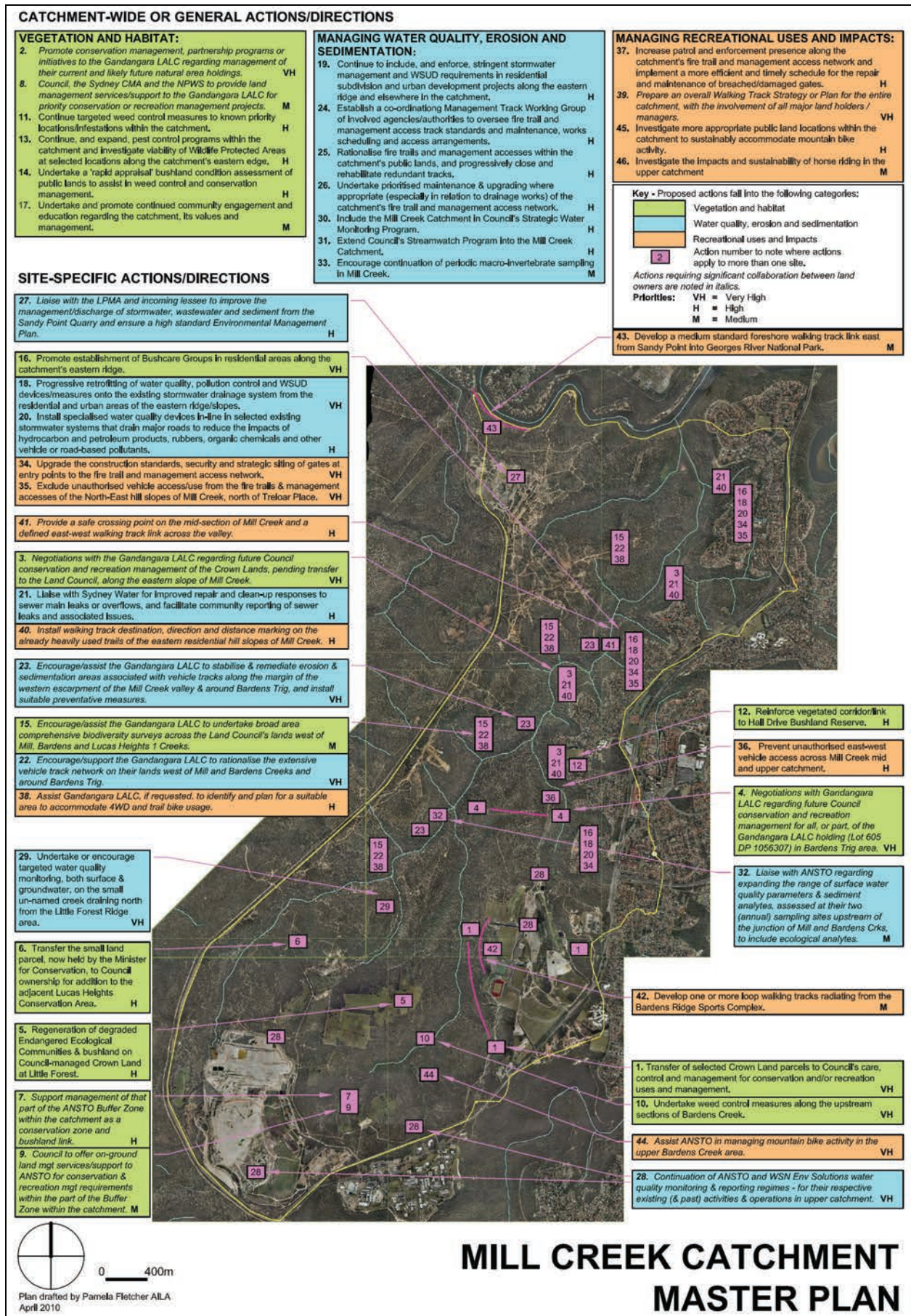


Figure 10 Mill Creek Catchment Master Plan

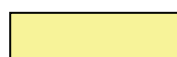
**Table 4 Management Actions and Directions**

<b>No.</b>	<b>Action/Direction</b>	<b>Priority</b>
<b>VEGETATION AND HABITAT</b>		
<b>Conservation Management – Vegetation Communities and Significant Flora/Fauna</b>		
1	Transfer of selected Crown Land parcels to Council's care, control and management for conservation and/or recreation uses	<b>Very High</b>
2	Promote conservation management, partnership programmes or initiatives to the Gandangara LALC regarding management of their current – and likely future – natural area landholdings	<b>Very High</b>
3	Negotiations with Gandangara LALC regarding future Council conservation and recreation management of the Crown Lands, pending transfer to the Land Council, along the eastern slope of Mill Creeks	<b>Very High</b>
4	Negotiations with Gandangara LALC regarding future Council conservation and recreation management for all, or part, of the Gandangara landholding (Lot 605 DP 1056307) in the Bardens Trig area	<b>Very High</b>
5	Regeneration of degraded Endangered Ecological Communities and bushland on Council-managed Crown Lands at Little Forest	High
6	Transfer the small land parcel, now held by the Minister for Conservation, to Council ownership for addition to the adjacent Lucas Heights Conservation Area.	High
7	Support management of that part of the ANSTO Buffer Zone within the catchment as a conservation zone and bushland link	High
8	Council, the Sydney Metropolitan Catchment Management Authority and the NPWS to provide land management services/support to the Gandangara LALC for priority conservation or recreation management projects	Medium
9	Council to offer on-ground land management services/support to ANSTO for conservation and recreation management requirements within that part of the Buffer Zone within the catchment	Medium
<b>Weed Management, and Vegetation Restoration and Enhancement</b>		
10	Undertake weed control measures along the upstream sections of Bardens Creek	<b>Very High</b>
11	Continue targeted weed control measures to known priority locations/infestations within the catchment	High
12	Reinforce vegetated corridor/link to Hall Drive Bushland Reserve	High
<b>Pest Management</b>		
13	Continue, and expand, pest control programmes and investigate viability of Wildlife Protected Areas at selected locations along the catchment's eastern edge.	High
<b>Biodiversity Surveys and Information</b>		
14	Undertake a "rapid appraisal" bushland condition assessment of public lands to assist in weed control and conservation management	High
15	Encourage/assist the Gandangara LALC to undertake broad area comprehensive biodiversity surveys across the Land Council's lands west of Mill, Bardens and Lucas Heights 1 Creeks	Medium
<b>Community Involvement</b>		
16	Promote establishment of Bushcare Groups in residential areas along the catchment's eastern ridge	<b>Very High</b>
17	Undertake and promote continued community engagement and education regarding the catchment, its values and management	Medium



No.	Action/Direction	Priority
<b>MANAGING WATER QUALITY, EROSION AND SEDIMENTATION</b>		
<b>Water Quality Management/Improvement</b>		
<i>Managing Residential and Urban Stormwater/Runoff</i>		
18	Progressive retrofitting of water quality, pollution control and WSUD devices/measures onto the existing stormwater drainage system from the residential and urban areas of the eastern ridge/slopes	Very High
19	Continue to include, and enforce, stringent stormwater management and WSUD requirements in residential subdivision and urban development projects along the eastern ridge and elsewhere in the catchment	High
20	Install specialised water quality devices in-line in selected existing stormwater systems that drain major roads to reduce the impacts of hydrocarbon and petroleum products, rubbers, organic chemicals, and other vehicle or road-based pollutants	High
21	Liaise with Sydney Water for improved repair and clean-up responses to sewer main leaks or overflows, and facilitate community reporting of sewer leaks and associated issues	High
<i>Managing Erosion and Sedimentation from Fire Trails and Management Accesses</i>		
22	Encourage/support the Gandangara LALC to rationalise the extensive vehicle track network on their lands west of Mill and Bardens Creeks and around Bardens Trig	Very High
23	Encourage/assist the Gandangara LALC to stabilise and remediate erosion and sedimentation areas associated with vehicle tracks along the margin of the western escarpment of the Mill Creek valley and around Bardens Trig, and install suitable preventative measures	Very High
24	Establish a co-ordinating Management Track Working Group of involved agencies/authorities to oversee fire trail and management access track standards and maintenance, works scheduling, and access arrangements	High
25	Rationalise fire trails and management accesses within the catchment's public lands, and progressively close and rehabilitate redundant tracks, according to an agreed Management Track Network Plan.	High
26	Undertake prioritised maintenance, and upgrading where appropriate (especially in relation to drainage works), of the catchment's fire trail and management access network	High
<i>Managing Sandy Point Quarry Stormwater/Runoff</i>		
27	Liaise with the Land and Property Management Authority and incoming lessee to improve the management/discharge of stormwater, wastewater and sediment from the Sandy Point Quarry and ensure a high standard Environmental Management Plan	High
<b>Water Quality Monitoring</b>		
28	Continuation of ANSTO and WSN Environmental Solutions water quality monitoring and reporting regimes – for their respective existing (and past) activities and operations in the upper catchment	Very High
29	Undertake or encourage targeted water quality monitoring, both surface and groundwater, on the small un-named creek draining north from the Little Forest Ridge area	Very High
30	Include the Mill Creek Catchment in Council's Strategic Water Monitoring Programme	High
31	Extend Council's Streamwatch Programme into the Mill Creek Catchment	High

<b>No.</b>	<b>Action/Direction</b>	<b>Priority</b>
32	Liaise with ANSTO regarding expanding the range of surface water quality parameters and sediment analytes, assessed at their two (annual) sampling sites upstream of the junction of Mills and Bardens Creeks, to include ecological analytes	Medium
33	Encourage continuation of periodic macro-invertebrate sampling in Mill Creek	Medium
<b>MANAGING RECREATIONAL USES AND IMPACTS</b>		
<b>Unauthorised Vehicle Access and Use</b>		
34	Upgrade the construction standards, security and strategic siting of gates at entry points to the fire trail and management access network	<b>Very High</b>
35	Exclude unauthorised vehicle access/use from the fire trail and management access network of the north-eastern hillslopes of Mill Creek, north from Treloar Place	<b>Very High</b>
36	Prevent unauthorised east-west vehicle access across Mill Creek headwater	High
37	Increase patrol and enforcement presence along the catchment's fire trail and management access network, and implement a more efficient and timely schedule for the repair and maintenance of breached/damaged gates	High
38	Assist Gandangara LALC, if requested, to identify and plan for a suitable area to accommodate 4WD and trailbike usage	High
<b>Walking Tracks</b>		
39	Prepare an overall Walking Track Strategy or Plan for the entire catchment, with the involvement of all major landholders/managers	<b>Very High</b>
40	Install walking track destination, direction and distance marking on the already heavily used management trails of the eastern residential hillslopes of Mill Creek	High
41	Provide a safe crossing point on the mid section of Mill Creek and a defined east-west walking track link across the valley	High
42	Develop one or more loop walking tracks radiating from the Bardens Ridge Sports Complex	Medium
43	Develop a medium standard foreshore walking track link east from Sandy Point into Georges River National Park	Medium
<b>Mountain Biking and Horseriding</b>		
44	Assist to ANSTO in managing mountain bike activity in the Bardens Creek area	<b>Very High</b>
45	Investigate more appropriate public land locations within the catchment to sustainably accommodate mountain bike activity	High
46	Investigate the impacts and sustainability of horseriding in the upper catchment	Medium



= collaborative measures with other/private land owners or managers

## 5.2 VEGETATION AND HABITAT MANAGEMENT

### 5.2.1 Conservation Management - Managing Vegetation Communities and Flora and Fauna Species of Conservation Significance

#### ➤ ACTION 1

**Transfer of selected Crown Land parcels to Council's care, control and management for conservation and/or recreation uses.**

#### Priority – Very High

*Council and the Land and Property Management Authority negotiate the transfer of Crown Land parcels identified as having potential for high natural heritage conservation, habitat corridor or bushland links, or recreation to Council's care, control and management.*

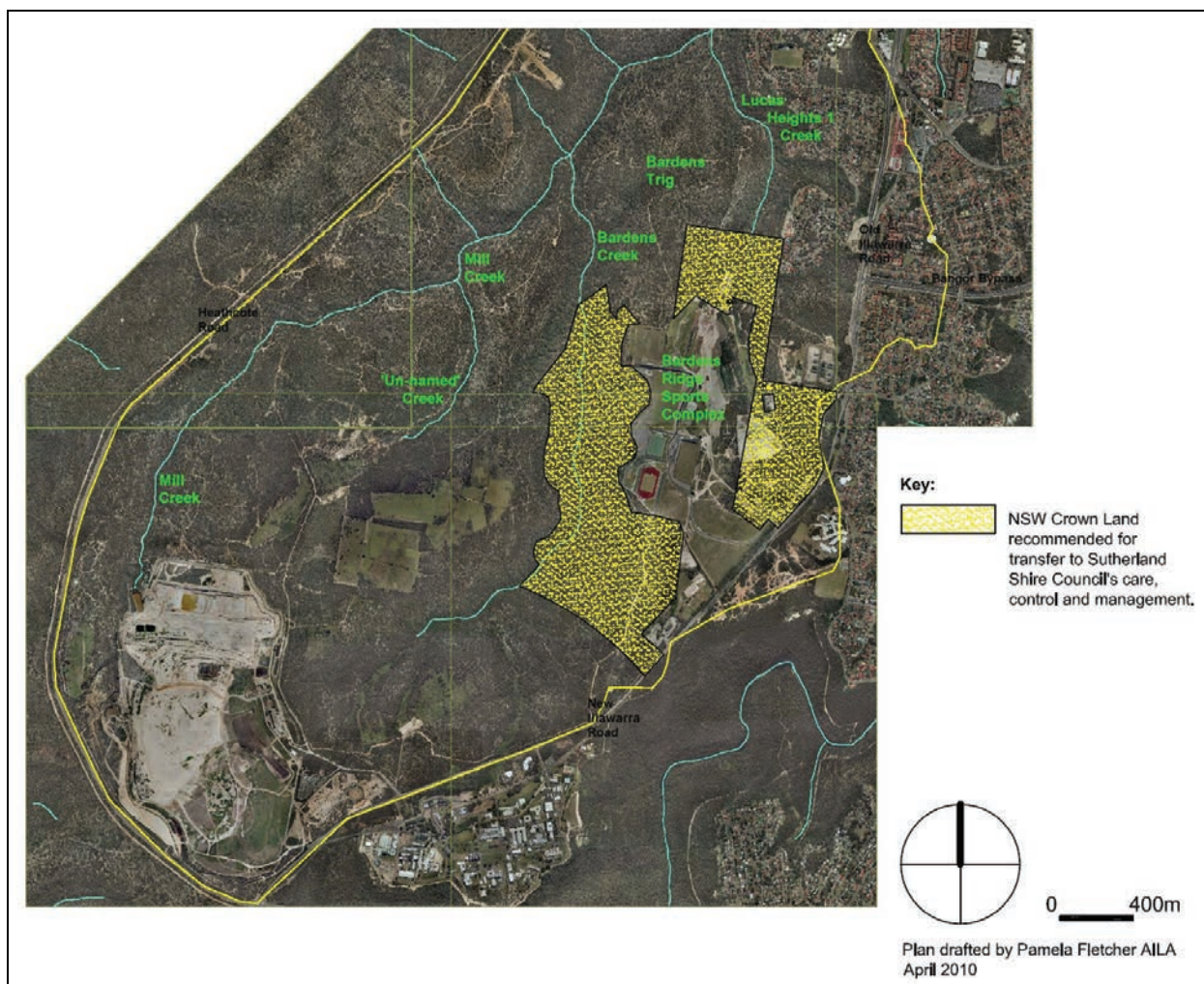
Rationale – to secure high conservation value or vegetation/habitat corridor areas, or areas having nature-based recreation potential (or issues) under Council's active management.

The following existing Crown Land areas – as shown in Figure 11 – all warrant transfer to Council's care, control and management for more active conservation and/or recreation land management:

- a large area along the upper section of Bardens Creek (east to the Jenko Sutherland Shire Pony Club and Menai Sand and Soil leases) – a scenic area with a comparatively low incidence of weeds and high quality bushland, an important link from the Council owned/managed bushland areas and Endangered Ecological Communities of Little Forest to the north-south bushland of the Lucas Heights 1 and Mill Creek valley corridors (a role that could become more significant under any future land use changes west of Mill Creek), and an area subject to increasing levels of mountain bike use warranting more active management;
- the bushland hillslope east of the Lucas Heights 1 Power station (south of Ella Avenue) – a potential location for the provision of a dedicated mountain bike area, or other higher impact bushland recreations; and
- the area on both sides Lucas Heights 1 Creek below the Bardens Ridge Sports Complex, towards Bardens Trig – a priority weed control area, an important link between the bushland areas of the upper catchment and the north-south bushland of the Lucas Heights 1 and Mill Creek valley corridors (again a role that could become more significant with any future land use changes), and a valuable area for potential recreation trail connections.

These areas are all shown as a “deferred matter” under the Sutherland Shire LEP 2006, and as such the “existing zoning under SSLEP 2000 continues until resolved”. The Sutherland Shire LEP 2000 zones the greater majority of these Crown Land parcels as Zone 1(b) Rural (Future Urban). A more appropriate zoning under the Sutherland Shire LEP 2006 – such as Zone 14 Public Open Space (Bushland) – should be sought as/when they come under Council's ownership or management.

In the longer term, if Council succeeds in assembling a larger continuous natural area estate in the upper catchment and along the valley of Mill Creek, the option of transferring these lands to State ownership and management – most appropriately under the NPWS, or possibly as a State Reserve managed by the Land and Property Management Authority – warrants consideration.



**Figure 11 Crown Lands recommended for transfer to Sutherland Shire Council's care, control and management**

- **Action 2**  
**Promote conservation management, partnership programmes or initiatives to the Gandangara LALC regarding management of their current – and likely future – natural area landholdings.**

**Priority – Very High**

*The MGRSI, Council, NPWS and other sections of the Department of Environment, Climate Change and Water to promote possible conservation management, partnership programmes or initiatives to the Gandangara LALC regarding conservation management of their current – and likely future – landholdings.*

Rationale – to ensure that the Gandangara LALC is fully aware of the opportunities, including commercial opportunities, and programmes available to support them in the conservation management of their current and likely future landholdings within the catchment, and especially for those bushland areas of high conservation value. This includes opportunities to generate an economic return from the protection of these areas.



The Gandangara LALC can legitimately claim that the lands they have already successfully claimed west of Mill Creek were previously degraded while held and managed as Crown Land, and that they were transferred to the Land Council in an already impacted condition.

Therefore a level of State government assistance can be reasonably requested, or expected, to assist in the remediation and management of these areas. Such a principle and obligation was recognised in the 2004 Department of Infrastructure, Planning and Natural Resources report *Georges River Catchment: Guidelines for Better Practice in Foreshore Works* which stated, in relation to managing water quality, “ ... obtain state government assistance to restore land that is reverting to Aboriginal ownership, where that land was degraded while under crown ownership and management’ (DIPNR, 2004, p. G3-2).

In addition to any direct State government funding assistance, key programmes or opportunities to promote to the Land Council include:

- participation in the DECCW Biodiversity Banking Programme, under the “Land Alive” Programme for bio-banking on Aboriginal lands, to achieve biodiversity conservation outcomes and economic returns;
- participation in the DECCW Conservation Partner Programmes, such as Wildlife Refuges and Conservation Agreements;
- continued involvement/collaboration with Sydney Metropolitan Catchment Management Authority (CMA) natural resources projects, in both planning and implementation – building on the current start-up projects to create an extended programme of works achieving environmental objectives and offering a wider range of training opportunities; and
- the various grant funding programmes and opportunities available to them for natural and cultural heritage protection purposes.



*The DECCW “Land Alive” programme promotes both protection and economic returns on Aboriginal owned lands of conservation value.*

The Gandangara LALC should also be assisted to develop an understanding of the legislative, conservation, land management and planning obligations and implications as they apply to their lands and the values they contain – especially in relation to bushfire hazard/management, Endangered Ecological Communities, flora or fauna species of significance, weeds and pests, recreational vehicle access/use, erosion control, and water quality issues.

The Land Council should be supported in resurrecting their earlier initiative of “Community Park Rangers”, with Aboriginal people employed by Gandangara LALC to undertake land management roles and provide an on-site presence within their catchment landholdings. This could be combined with, or part of, the Land Council’s current involvement in Sydney Metropolitan CMA natural resources projects and DECCW “Land Alive” projects. The role of these Rangers could potentially be expanded, in time, to include educational and extension services – including income generating activities, such as guided tours or cross-cultural activities (possibly in conjunction with the proposed Gandangara Living Culture and Learning Centre, a concept which warrants continued Council and agency support). As an on-site presence the Rangers may also eventually offer land management services to other agencies with natural lands in the catchment – such as Council or ANSTO – on a fee-for-service basis.

These initiatives would not compromise the Land Council’s future land use options, and would assist the organisation to meet its obligations as a land owner/manager responsible for areas with significant natural values.

➤ **Action 3**  
**Negotiations with Gandangara LALC regarding future Council conservation and recreation management of the Crown Lands, pending transfer to the Land Council, along the eastern slope of Mill Creek.**

**Priority – Very High**

*Council and the Land and Property Management Authority to negotiate with the Gandangara LALC with the aim of securing the future Sutherland Shire Council management of the bushland slopes along the eastern side of Mill Creek (below the residential areas), which are pending transfer to the Land Council, as a conservation and recreation zone – with suitable land tenure arrangements to secure the long-term use of this corridor for these purposes.*

Rationale – to provide for the long-term active management of this eastern hillslope of Mill Creek as a valuable bushland/wildlife corridor from Georges River National Park in the north to the remnant/managed bushland areas of the upper catchment in the south, as a nature-based recreation zone, and for essential bushfire hazard management and fire fighting purposes.

The bushland hillslopes from Landy Close in the south to Lavender Place in the north, on the eastern side of Lucas Heights 1 and Mill Creeks – as shown in Figure 12, are pending transfer to the Gandangara LALC. The lands in question extend from the eastern bank of Lucas Heights 1 and Mill Creeks upslope to the rear of the residential properties or road reserves on the ridges above. The area is mostly a moderate to steep rocky slope, with ledges and escarpments in many places (especially in the north), covered predominantly by Sydney Sandstone Gully Forest. It is bisected by Sydney Water sewer mains approximately mid-slope. The area's zoning is a "deferred matter" under the Sutherland Shire LEP 2006, and as such the "existing zoning under SSLEP 2000 continues until resolved". The Sutherland Shire LEP 2000 zones virtually the entire area as Zone 7(b) Environmental Protection (Bushlands).

Given these physical and land use zoning constraints this band of steep bushland hillslopes has extremely limited, if any, commercial development potential – either at present or following their transfer to the Land Council's ownership.

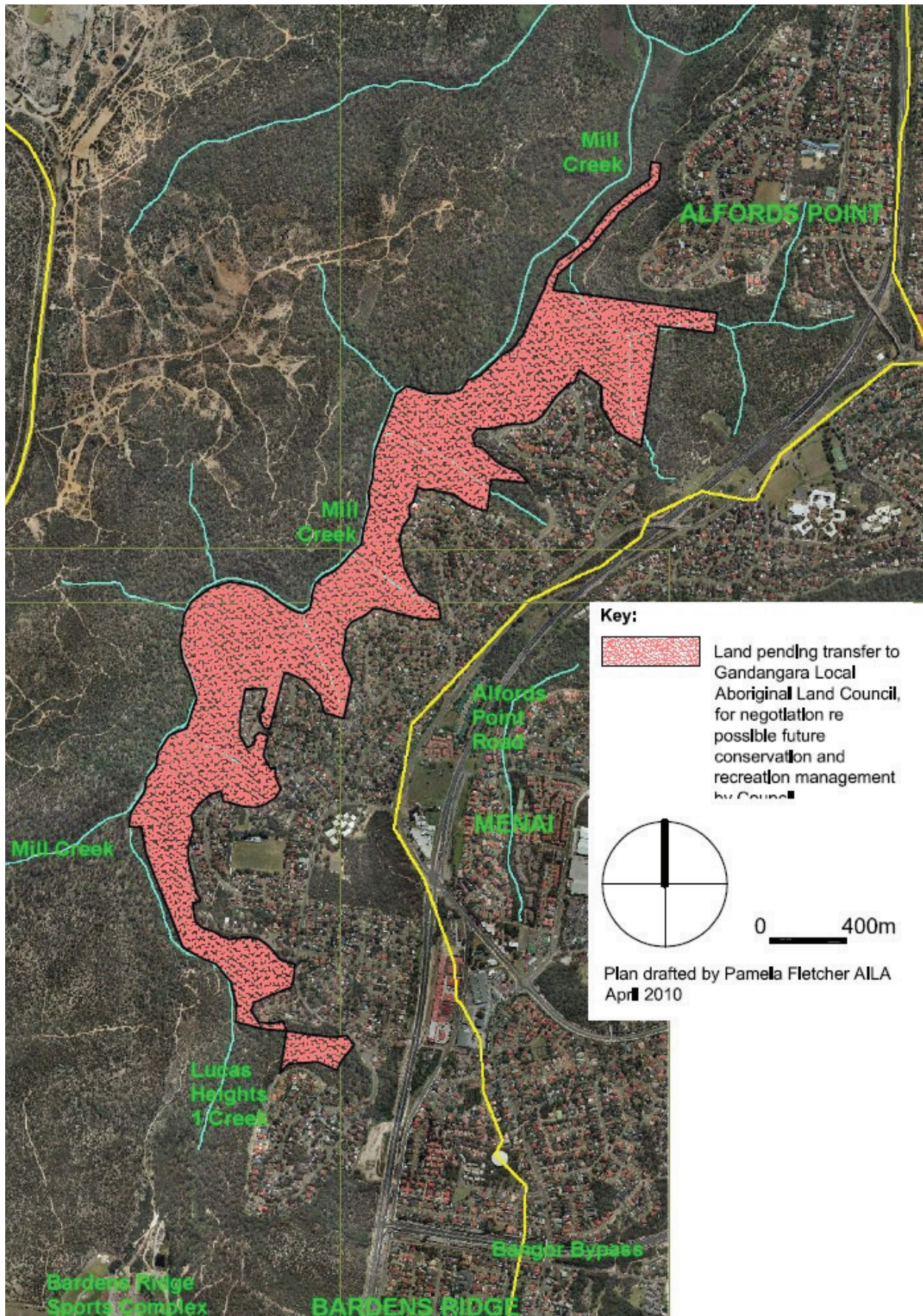
However the area is:

- ❑ heavily used for passive and active nature-based recreation, taking advantage of the linear network of trails and access to the Mill Creek waterway (conversely private ownership typically limits Council's ability/willingness to promote or provide for recreational use of private land);
- ❑ extremely important in terms of bushfire management – including for fire trail location and maintenance, hazard reduction operations, and the management of Asset Protection Zones and enabling fire-fighting access close to the houses above (conversely private ownership seriously complicates fire trail maintenance obligations and expenditure, as well as potentially limiting bushfire hazard management activities);
- ❑ an important area in terms of weed control requirements, as well as providing space for water quality and stormwater management measures (conversely private ownership typically restricts weed control and stormwater management operations by Council and other agencies); and



Steep forested slopes lead up to residential areas along the on the eastern side of Mill Creek.





**Figure 12** Lands pending transfer to Gandangara LALC for possible negotiation re transfer to Council care, control and management



- an important bushland and wildlife link, from Georges River National Park in the north to the southern remnant/managed bushland areas of the upper catchment, both now and more so in the future (if natural areas to the west are developed).

Negotiating an outcome with the Gandangara LALC for these lands to be subject to Council's long-term management responsibility – under a leaseback, co-management or joint management, permissive occupancy, or other suitable arrangement – will enable the full community value and benefits of these lands (which have minimal private development or commercial potential) to be realised. Ownership of the land would remain with the Gandangara LALC. The same situation would possibly apply to the Gandangara LALC owned western escarpment/hillslope to Mill Creek, although these lands are more distant from residential areas and less significant in terms of fire management.

Again in the longer term, if Council succeeds in assembling a larger continuous natural area estate in the upper catchment and along the valley of Mill Creek the option of transferring these lands to State ownership and management – most appropriately under the NPWS, or possibly as a State Reserve managed by the Land and Property Management Authority – warrants consideration with an appropriate sale price negotiated with the Gandangara LALC (which could potentially fund the Land Council's development initiatives elsewhere in the catchment).

➤ **Action 4**  
**Negotiations with Gandangara LALC regarding future Council conservation and recreation management for all, or part, of the Gandangara landholding (Lot 605 DP 1056307) in the Bardens Trig area**

**Priority – Very High**

*Council to negotiate with the Gandangara LALC with the aim of securing the future Sutherland Shire Council management of all, or at least the eastern portion, of the Land Council's landholding in the Bardens Trig area (Lot 605 DP 1056307) as a conservation and recreation zone.*

Rationale – to provide for the long-term active management of this block, or at least the eastern parts of it, as a valuable bushland/wildlife link between the bushland areas of the upper catchment and the north-south bushland of the Lucas Heights 1 and Mill Creek valley corridors, as well as for the provision and management of recreational uses.

This block around the high point of Bardens Trig is isolated from the Gandangara LALC's western landholdings by the deep valleys of Mill Creek and Bardens Creeks, access from the east is constrained by the valley of Lucas Heights 1 Creek, and from the south by the Bardens Ridge Sports Complex and Crown Lands. As such its development potential for more intensive land uses is very constrained.

A negotiated agreement with the Gandangara LALC for the Bardens Trig block (Lot 605 DP 1056307), as shown in Figure 13, to be subject to Council's natural areas land management as part of a long-term arrangement – under a leaseback, co-management or joint management, permissive occupancy, or other suitable arrangement. While ownership of the land would remain with the Gandangara LALC, its conservation management by Council would maintain this area as a valuable bushland link as well as a conservation and recreation zone. Long-term conservation management of this block would link Council's existing and proposed land holdings southwards on Bardens and Lucas Heights 1 Creeks.



**Figure 13 Gandangara LALC Bardens Trig block (Lot 605 DP 1056307)**

Conservation management of this entire block is preferred. However as a fallback a long-term management agreement covering the area east of Bardens Trigg, or as a minimum the bushland corridor east of Lucas Heights 1 Creek, would also fulfill the intended linkage and recreation management roles – but not as completely.

As mostly an upland block the western majority of this area is relatively high quality bushland, apart from localised impacts from the vehicle tracks that bisect the area and associated 4WD/trailbike usage. The vehicle track over Bardens Trig is a critical east-west link in the catchment’s trial system, and is subject to considerable 4WD and trailbike traffic as a result.

The Bardens Trig area itself receives high levels of mountain bike use, including new track creation and establishing “North Shore” style courses in previously unaccessed bushland. Further east the course and banks of Lucas Height 1 Creek are heavily weed infested.

This block warrants active conservation and recreation management as an important link between the bushland areas of the upper catchment (both those already under, and those proposed for, Council ownership or management) and the north-south bushland of the Lucas Heights 1 Creek and Mill Creek valley corridors (again a role that could become more significant with any future land use changes). It is a very strategic area for the management of unauthorised vehicle access/use (as per Action 36). It also requires active management in terms of mountain bike use and impacts (as per Action 45), as well as being a valuable area for potential recreation trail connections. The eastern creek line is a priority weed control area at the catchment scale.

Again these lands could also be part of a possible future transfer package to State ownership and management – under the NPWS, or possibly as a State Reserve under the management of the Land and Property Management Authority – if Council succeeds in assembling a larger continuous natural area estate in the upper catchment and along the valley of Mill Creek– with an appropriate sale price negotiated with the Gandangara LALC (which could potentially fund the Land Council’s development initiatives elsewhere in the catchment).

➤ **ACTION 5**  
**Regeneration of degraded Endangered Ecological Communities and bushland on Council-managed Crown Lands at Little Forest.**

**Priority – High**

*Council to continue, and intensify, its efforts to regenerate degraded areas of Shale/Sandstone Transition Forest and Sydney Turpentine Ironbark Forest Endangered Ecological Communities on the site of the former night soil depot on the Crown Lands under Council’s care, control and management at Little Forest.*

Rationale – to restore degraded Endangered Ecological Communities and reinforce bushland/habitat continuity in this area.

The eastern two-thirds of Council's northernmost former night soil dump-site at Little Forest is on Crown Lands under Council's care, control and management. The western part of this site, adjacent to the ANSTO Buffer Zone extension, supports a large degraded area of Shale/Sandstone Transition Forest Endangered Ecological Community. The night soil waste areas are largely cleared, but regenerating, nutrient-rich zones. Council is trialling broad-area weed control techniques around the margins of the former dump sites to promote regeneration from the remaining native seedbank, with encouraging results to-date. A more active and interventionist approach is warranted to re-establishing these Endangered Ecological Communities in this area.

These regeneration works could be extended, by agreement with ANSTO, to include the continuation of the night soil dump areas on the ANSTO lands to the west.

➤ **ACTION 6**

**Transfer the small land parcel, now held by the Minister for Conservation, to Council ownership for addition to the adjacent Lucas Heights Conservation Area.**

**Priority – High**

*Council and the Department of Environment, Climate Change and Water negotiate the transfer of this small, 7.15 hectare parcel, to Council's ownership for addition to and management as part of the Lucas Heights Conservation area.*

Rationale – to provide enhanced protection and management for the biodiversity values of this small outlying block now subject to only limited management by the NPWS (DECCW), and enhance the Lucas Heights Conservation area.

This small, undeclared, parcel of land held by the Minister for Conservation adjoins the north-east side of the Lucas Heights Conservation Area. It is made up mostly of an area of Shale/Sandstone Transition Forest Endangered Ecological Community. However its small size and isolation from other NPWS-managed areas limits sustainable and cost-effective management by this agency, and the NPWS concluded in 1997 that “the inclusion of this land in a nature reserve or national park is not appropriate at this time”.

It would be more practical that this area be added to the adjacent Lucas Heights Conservation Area to enhance the value and management of both areas.

➤ **Action 7**

**Support management of that part of the ANSTO Buffer Zone within the catchment as a conservation zone and bushland link.**

**Priority – High**

*Council and the MGRSI support ANSTO's efforts to manage the north-eastern sector of the Buffer Zone as a bushland area consistent with the current Buffer Zone Plan of Management's objectives to provide for “the conservation of biodiversity”, “to protect, maintain and rehabilitate bushland and waterways as part of a regional system of natural areas” and to “minimise impacts to the environment”. To manage this area as an important bushland link between adjacent Council-managed natural areas.*



Rationale – to support ANSTO’s land management actions, and improve its conservation management capacity, as well as to protect a key values area and bushland link within the catchment’s natural lands.

Council and MGRSI support may include advise/expertise, assistance in-kind, joint funding applications, co-ordinated management programmes (especially for weeds/pests, fire management and rehabilitation measures), assistance in managing recreational use/impacts, and other initiatives. The ANSTO Buffer Zone supports both the Sydney Turpentine Ironbark Forest and Shale/Sandstone Transition Forest Endangered Ecological Communities (including degraded areas of both these communities that warrant restoration – as per Action 6), as well as high quality bushland along the eastern arm of Bardens Creek, and forms an important link between Council owned/managed bushland areas to the west and east. It is important, at the catchment scale, that this link is maintained and reinforced/enhanced.

Council should also seek input to preparation of the new/replacement Buffer Zone Plan of Management, to advocate for continuation of the current plan’s priority to biodiversity conservation objectives.

➤ **Action 8**  
**Council, the Sydney Metropolitan Catchment Management Authority and the NPWS to provide land management services/support to the Gandangara LALC for priority conservation or recreation management projects.**

**Priority – Medium**

*Council, the Sydney Metropolitan Catchment Management Authority and the NPWS (as the leading natural area managers in the catchment) provide land management services/support to the Gandangara LALC for identified priority conservation or recreation management projects on a fee-for-service or negotiated/agreed basis.*

Rationale – to assist the Gandangara LALC in achieving conservation and recreation objectives on their lands that will have catchment-wide benefits, as well as potentially providing a skills transfer benefit for Land Council staff.

By prior agreement with the Gandangara LALC, Council or the Sydney Metropolitan Catchment Management Authority or the NPWS (or a “consortium” of these and other agencies) could access Land Council lands to undertake agreed identified priority projects that offer catchment-scale environmental benefits. This involvement could be on a contract or fee-for-service basis, via a “permissive occupancy” arrangement, or other suitable mechanisms. Ideally Land Council staff should be involved in these projects to enable a skills transfer benefit and develop collaborative working relationships with other catchment land managers.



*Impacted Shale/Sandstone Transition Forest EEC on the Land Council’s western landholdings.*

Priority projects might include weed control, protection of Endangered Ecological Communities, erosion control works, track closures and fencing – however all projects and locations will need to be determined collaboratively with the Land Council and subject to the prior agreement of all parties.

- **Action 9**  
**Council to offer on-ground land management services/support to ANSTO for conservation and recreation management requirements within that part of the Buffer Zone within the catchment.**

**Priority – Medium**

*Council to offer on-ground land management services/support to ANSTO, on a contract or fee-for-service basis, to assist in managing those areas of the ANSTO Buffer Zone within the catchment.*

Rationale – to assist ANSTO in achieving conservation and recreation objectives within the north-east area of the Buffer Zone, and better address catchment-wide land and water management issues.

Council to assist ANSTO in managing key issues within the Buffer Zone, especially those potentially having downstream impacts for Mill Creek and the catchment or require management at the whole-of-catchment scale.

Possible priority areas for co-operation and involvement include – weed control (as per Action 10), regenerating degraded Endangered Ecological Communities across the western area of Council's former night soil depot (as per Action 5), fire management, the management of mountain bikes (as per Action 45), and walking track development and maintenance.

## **5.2.2 Weed Management, and Vegetation Restoration and Enhancement**

- **ACTION 10**  
**Undertake weed control measures along the upstream sections of Bardens Creek.**

**Priority – Very High**

*Undertake weed control measures along the upstream sections of Bardens Creek targeting post-fire weeds in this previously high quality bushland area.*

Rationale – to protect the integrity of a previously high quality bushland area, with low weed incidence, along an upper tributary within the catchment.

Crofton Weed (*Ageratina adenophora*) and other post-fire weeds have invaded the upper sections of Bardens Creek – an area that was previously one of the most weed-free parts of the catchment's remaining bushland. Control efforts in this upper catchment tributary are a priority, and will require collaboration with ANSTO in the upper sections of the creek within the ANSTO Buffer Zone.

- **ACTION 11**  
**Continue targeted weed control measures to known priority locations/infestations within the catchment.**

**Priority – High**

*Undertake weed control measures for declared Noxious Weeds and at known major weed locations/infestations, on public lands and working co-operatively with other landholders.*

Rationale – to continue to target declared Noxious Weeds and known problem weed locations while more comprehensive/prioritised weed information is being obtained, so as to meet legislative obligations and protect/enhance the catchment’s biodiversity and habitat values.

Priority weeds or locations to target with control efforts in the short term, as based on the local knowledge of key public land managers (Council and NPWS) before more comprehensive weed surveys and bushland condition assessments become available, include the following – as shown on Figure 14:

- ❑ declared Noxious Weeds, wherever occurring in the catchment, on both private and public lands (as per legislative requirements);
- ❑ Pampas Grass – notably the extensive infestation south/south-east of the Sandy Point Quarry on Gandangara LALC lands (co-operatively with the Land Council), as well as other infestations and spot occurrences;
- ❑ the heavily infested area (mainly environmental weeds) downstream of the dam and spillway on Lucas Heights 1 Creek;
- ❑ the length of Mill Creek (and into Lucas Heights 1 Creek) from the tidal limit upstream to the dam and spillway on Lucas Heights 1 Creek (as above);
- ❑ the margins of Heathcote Road;
- ❑ the urban-bushland interface of the eastern ridgeline residential areas, including stormwater impacted gullies (preferably after the installation of stormwater management works – as per Action 18); and
- ❑ recent infestations of Crofton Weed in previously “clean” bushland on the upper sections of Bardens Creek, on Crown Land and within the ANSTO Buffer Zone, to maintain this area as high quality bushland.



*Severe Pampas Grass infestation south/south-east of the Sandy Point Quarry on Gandangara LALC lands.*

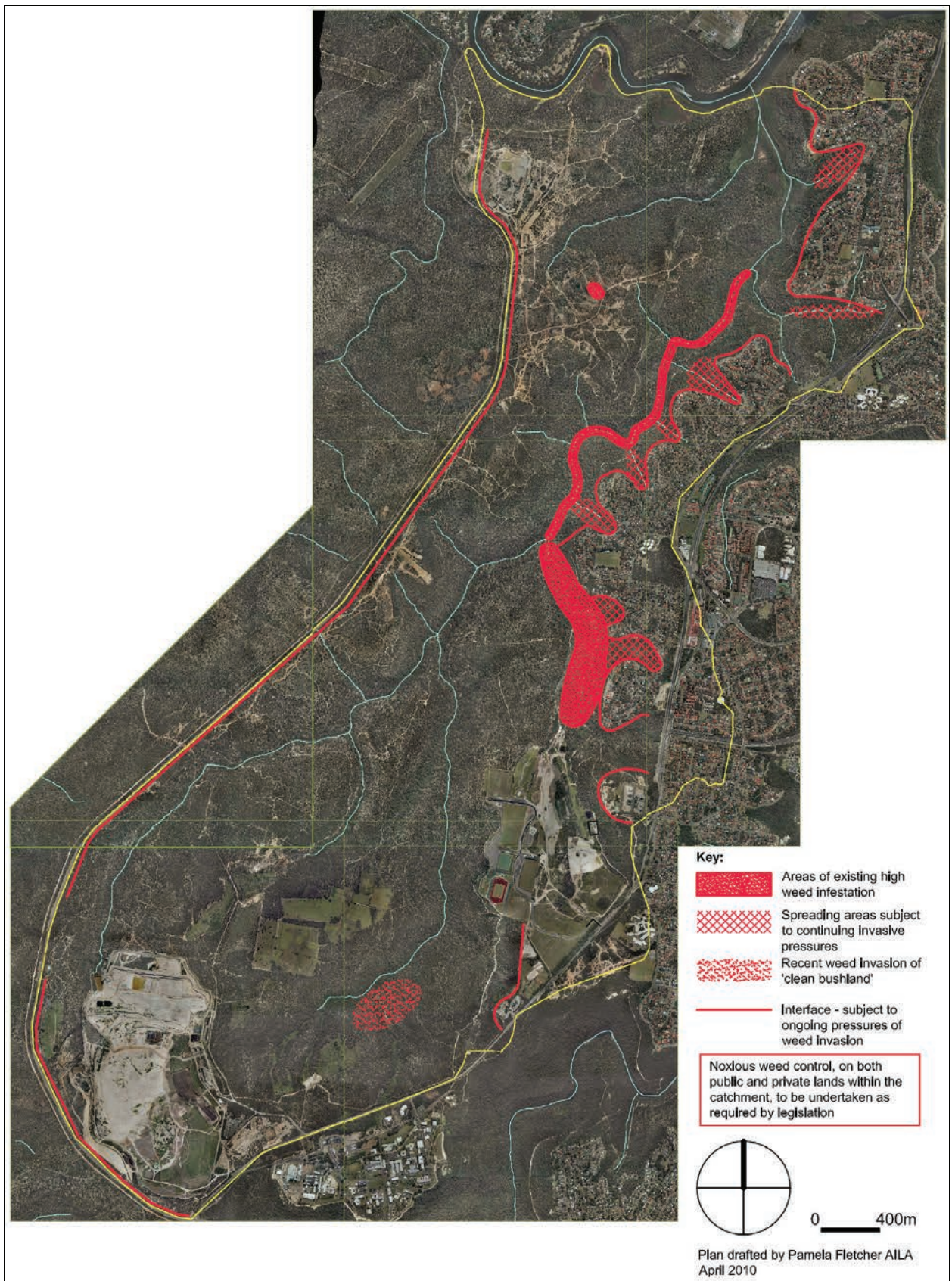
Weed control priorities can be modified when weed survey and bushland condition assessments become available (as per Action 14) - to reflect a “threats-to-values” approach to protect high value conservation assets, reduce risks and minimise weed spread.

➤ **ACTION 12**  
**Reinforce vegetated corridor/link to Hall Drive Bushland Reserve.**

**Priority - High**

*Undertake “reinforcement” planting of appropriate native vegetation species – both trees and understorey – to better link Hall Drive Bushland Reserve and its remnant Shale/Sandstone Transition Forest Endangered Ecological Community with the main native vegetation areas of the catchment.*





**Figure 14** Priority interim weed management areas

Rationale – to reinforce the conservation values of the reserve and enhance the sustainability of the remnant Shale/Sandstone Transition Forest Endangered Ecological Community.

This action will require selected native vegetation plantings west from Hall Drive Bushland Reserve around the margins of Buckle Reserve and linking north and south across Barnes Crescent to the bushland of the eastern hillslopes of Mill Creek. This would establish/reinforce a wildlife corridor link between the Reserve and the catchment's main bushland areas and enhance the viability, conservation value and habitat role of the Hall Drive Bushland Reserve. Fire management and fuel load continuity issues will need to be considered, to avoid increasing the bushfire risk for surrounding residential areas.

### 5.2.3 Pest Management

➤ **ACTION 13**

**Continue, and expand, pest control programmes within the catchment and investigate viability of Wildlife Protected Areas at selected locations along the catchment's eastern edge.**

**Priority – High**

*Council, and other public land managers such as the NPWS (DECCW), continue and expand current pest control programmes. Council investigate the viability of creating Wildlife Protected Areas (no entry by cats, dogs or domestic animals) at selected locations along the catchment's eastern edge.*

Rationale – to reduce the impacts/pressures of introduced animals on the catchment's native flora and fauna.

Fox control is a priority within the catchment. At present pest control efforts are co-ordinated locally among landholders, but not on a regional level. Given the large area of bushland immediately west of the catchment, co-ordinating pest control efforts at least with the Holsworthy Military Area is recommended.

Intrusion by cats, dogs and other domestic animals can be expected to be adversely impacting wildlife along the catchment's eastern margins. *The creation of Wildlife Protected Areas at selected locations along the catchment's eastern edge – with entry of cats, dogs or domestic animals prohibited and appropriate enforcement/control measures undertaken – warrants investigation. Careful site selection would be required to ensure maximum effectiveness and biodiversity benefits, ease of management and local community support.*

### 5.2.4 Biodiversity Surveys and Information

➤ **ACTION 14**

**Undertake a “rapid appraisal” bushland condition assessment of public lands to assist in weed control and conservation management.**

**Priority – High**



*Public land managers collaborate to undertake a catchment-wide “rapid appraisal” bushland condition assessment and weeds survey.*

Rationale – to provide data to inform bushland and water management measures, and in particular for use in targeting weed control efforts.

Involvement of all public land managers (Council, NPWS and the Land and Property Management Authority), as well as ANSTO if possible, would be preferred to provide a data set to complement any biodiversity surveys across the Gandangara LALC lands (as per Action 15), and so provide comprehensive coverage for the entire catchment. However if this is not possible priority areas for bushland condition assessments and weeds survey would be, in order:

1. along the eastern residential hillslopes of Mill Creek;
2. the western hillslopes below the Bardens Ridge Sports Complex in the north to New Illawarra Road in the south;
3. the upper section of the Mill Creek valley below Little Forest (where several vehicle tracks cut or occur in the valley);
4. the eastern margins of Heathcote Road (up to 100 metre depth, with the Land Council’s agreement); and
5. Georges River National Park (especially the foreshore and southern boundary areas).



*The eastern side of Heathcote Road is a priority weed assessment and control area.*

➤ **Action 15**  
**Encourage/assist the Gandangara LALC to undertake broad area comprehensive biodiversity surveys across the Land Council’s lands west of Mill, Bardens and Lucas Heights 1 Creeks.**

**Priority - Medium**

*Encourage or assist the Gandangara LALC to undertake comprehensive biodiversity surveys across its major landholdings in the catchment – possibly using low-cost options such as tertiary institutions, NPA/community biodiversity surveys, volunteers or via seeking additional grant funding.*

Rationale – to provide up-to-date and systematic information regarding the biodiversity values of the Gandangara lands to inform future land use planning and ensure the recognition/consideration of the area’s conservation values.

Improved, systematic and up-to-date, knowledge of the biodiversity values of these extensive areas of the catchment will assist in both short-term land management as well as in medium-term land use planning.

Biodiversity survey information will be required as part of the planning process for any possible future change of land use or development that might be proposed by the Land Council within these natural areas, or to support the case for bio-banking or other forms of conservation management (including any opportunity for acquisitions or joint management for conservation purposes).