NSW GOVERNMENT | Planning & Infrastructure

MAJOR PROJECT ASSESSMENT: Elf Mushroom Farm and Substrate Plant (MP 08_0225)

Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

December 2011

Abbreviations

CIV	Capital Investment Value
Department	Department of Planning and Infrastructure
DGRs	Director-General's Requirements
Director-General	Director-General of the Department of Planning and Infrastructure
EA	Environmental Assessment
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPI	Environmental Planning Instrument
MD SEPP	*State Environmental Planning Policy (Major Development) 2005*
Minister	Minister for Planning and Infrastructure
PAC	Planning Assessment Commission
Part 3A	Part 3A of the *Environmental Planning and Assessment Act 1979*
PEA	Preliminary Environmental Assessment
PFM	Planning Focus Meeting
PPR	Preferred Project Report
Proponent	Elf Farm Supplies and Elf Mushrooms
RTS	Response to Submissions

Cover Photograph: Growing mushrooms (source: Environmental Assessment)

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www.planning.nsw.gov.au

EXECUTIVE SUMMARY

Elf Mushrooms and Elf Farm Supplies operate under the umbrella of the Tolson Group, a family owned company that has been producing mushrooms in the Western Sydney area for over 40 years. The Group currently operates three mushroom farms at Vineyard, Londonderry and Glossodia, a packing and distribution company (at their Vineyard mushroom farm) and a mushroom substrate* plant at Mulgrave.

Elf Mushrooms and Elf Farm Supplies propose to establish a new mushroom farm on a 22 hectare site at Londonderry in the Penrith local government area, and expand the existing Mulgrave Substrate Plant at Mulgrave in the Hawkesbury local government area. This would enable the Proponent to produce up to 220 tonnes of mushrooms per week and up to 3,200 tonnes of Phase 1 substrate per week. The increased production of substrate at Mulgrave would support production at the new mushroom farm at Londonderry.

The Mulgrave site is zoned Rural Living under the *Hawkesbury Local Environmental Plan (LEP) 1989*. Mushroom substrate production is defined as a rural industry. Rural industries are a prohibited land use within the Rural Living zone. To overcome this permissibility issue, the Proponent has sought Concept Plan approval as well as Project approval for both sites.

The Project has a total capital investment value (CIV) of $40 million and would generate up to 100 jobs during construction and 43 additional operational jobs. The proposal constitutes a Major Project under Part 3A of the *Environmental Planning and Assessment Act 1979* and consequently requires the Minister's approval.

During the exhibition period the Department received 18 submissions on the Project, 6 from public authorities and 12 from the general public. The submissions raised a range of issues including potential impacts on traffic, odour, noise, Indigenous heritage, water and biodiversity.

The Department has assessed these issues in detail, along with the Environmental Assessment and Response to Submissions in accordance with the objects of the EP&A Act.

The Department has found that the main issues associated with the proposed mushroom farm relate to traffic, visual and biodiversity impacts, whereas the issues associated with the substrate plant primarily relate to odour. The Department considers these impacts can be adequately mitigated and/or managed to ensure an acceptable level of performance and has recommended a range of conditions to ensure this occurs.

In addition, the Department recognises the significance and need for the Project in terms of social and economic benefits and promotion of sustainable agriculture in the Western Sydney region.

The Department is satisfied that the Project is consistent with *NSW 2021 Plan*, the *Metropolitan Plan*, as well as Penrith City Council's *Rural Lands Strategy*.

Consequently the Department considers the Project is in the public interest and recommends that the Mushroom Farm and Substrate Plant expansion be approved, subject to conditions.

* Mushroom substrate is the nutrient rich growing medium used by mushroom farms for growing mushrooms.

1. BACKGROUND

1.1. Project Background

Elf Mushrooms and Elf Farm Supplies (the Proponent) operate under the umbrella of the Tolson Group, a family owned company that has been producing mushrooms in the Western Sydney area for over 40 years. The Tolson Group currently operates three mushroom farms (at Vineyard, Londonderry and Glossidia), a packing and distribution company (at the Vineyard farm) and a mushroom substrate plant (at Mulgrave).

The Mulgrave substrate plant (see Figure 1), was established in 1981 following approval from Hawkesbury Council. It currently produces up to 1,000 tonnes of Phase 1 substrate per week to supply the Tolson Group's mushroom farms, as well as other mushroom farms in the Sydney area.

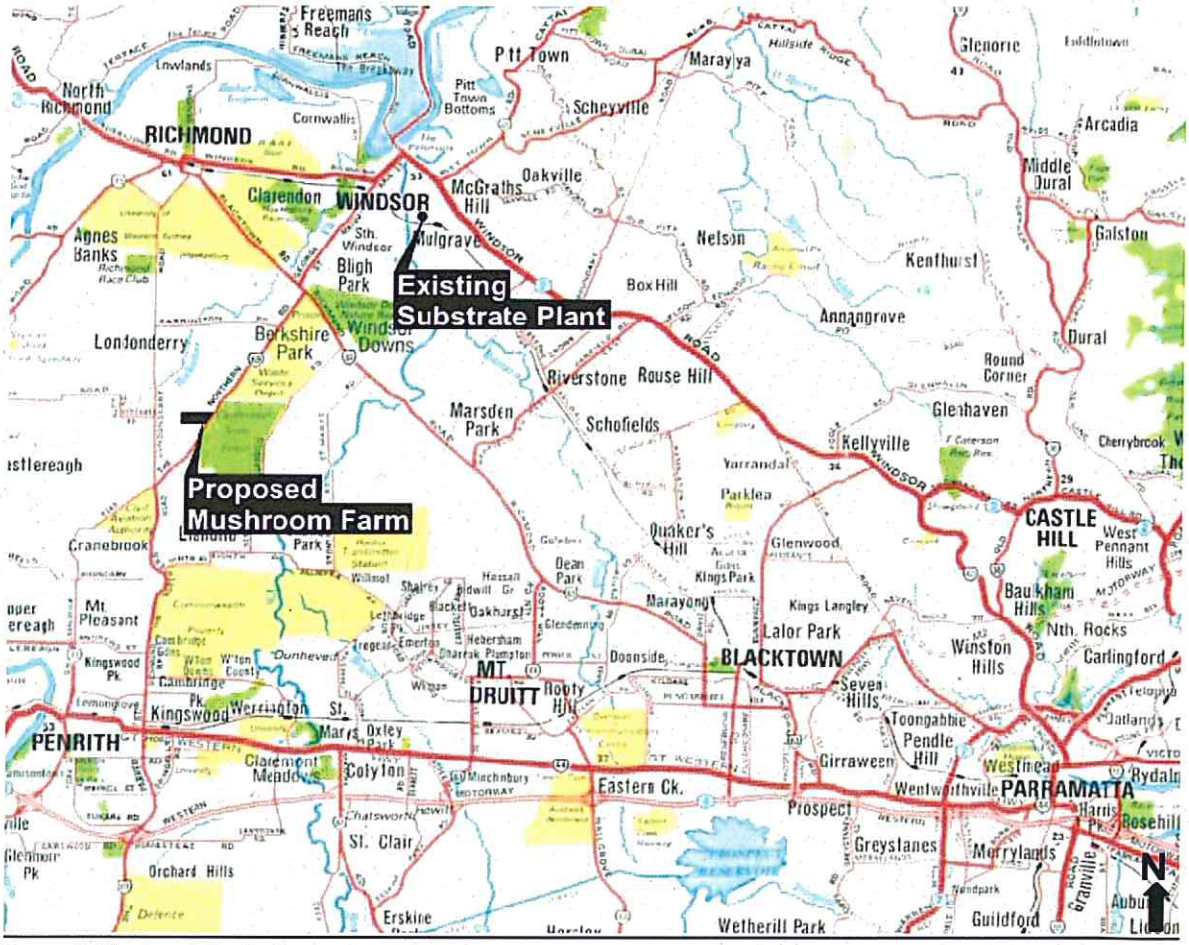

***Figure 1**: Regional Context*

1.2. Current Operations – Mushroom Substrate Production at Mulgrave

Site description

The Mulgrave site is part of a wide band of rural land on the flood plain of South Creek and comprises all of Lot 14 DP 1138749 and part of Lot 13 DP 1138749 at 108 Mulgrave Road in Hawkesbury local government area (LGA) (see Figure 2). The site is roughly triangular in shape with an area of some 12.4 hectares.

The existing development area has been filled to a level of 16 metres Australian height datum (AHD). Most of the balance of the site that is earmarked for further development is in the process of being raised to the same level, in accordance with a development consent issued by Hawkesbury City Council in November 2006.

The substrate plant has a small frontage and access off Mulgrave Road. Hawkesbury Valley Way, which is the flood evacuation road for Windsor, runs along most of the north-eastern boundary of the site.

The substrate plant boundary is set back at the edge of the filled land about 150 to 200 metres from South Creek. The remainder of the site is cleared farming land which gently slopes to South Creek.

Land uses in the vicinity of the site include market gardens, turf farms, dairy farms, feedlots, grazing and sewage treatment. The Blacktown to Richmond Railway line is located adjacent to the southern boundary with Mulgrave Station some 100m from the front gate of the facility. The nearest residential dwelling is associated with the market gardens and is located approximately 200m to the south of the site.

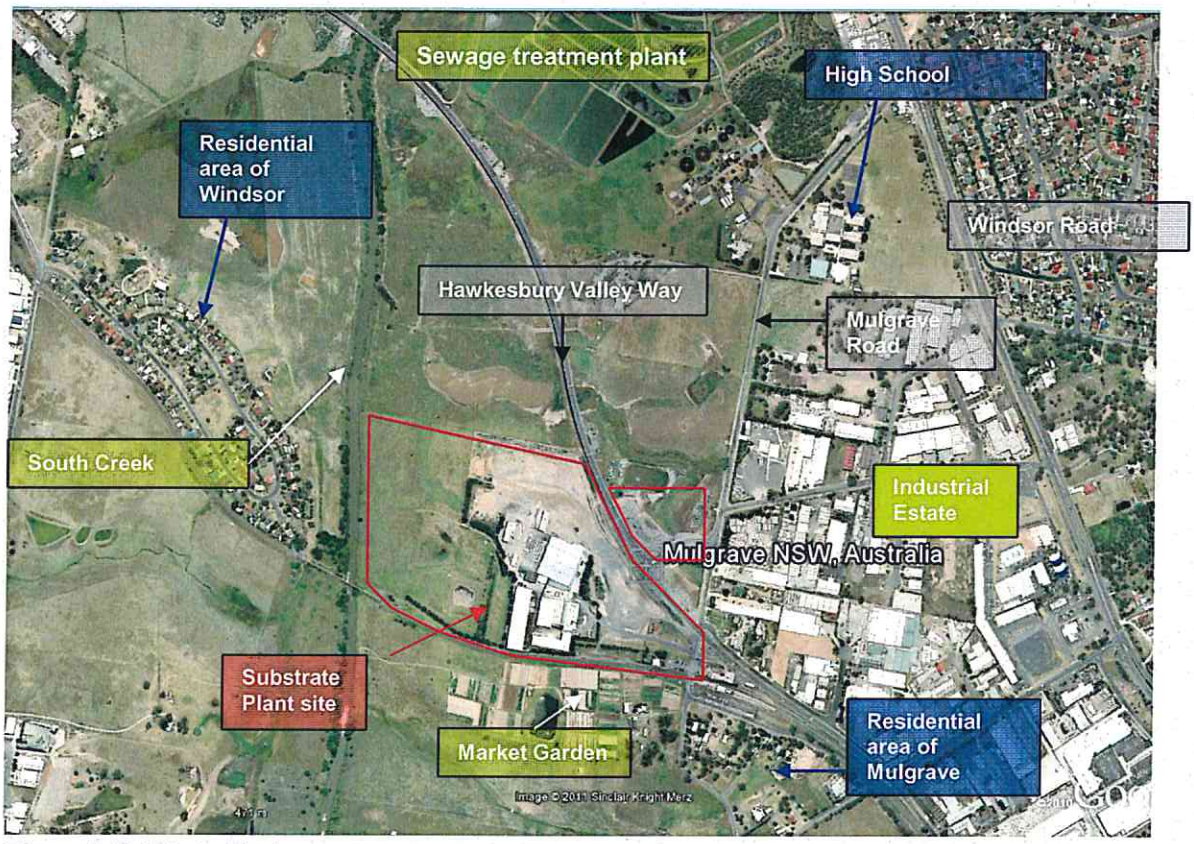

Figure 2: *Substrate Plant*

The Mulgrave substrate plant has undergone a number of modifications since operations commenced in 1981.

Current significant features of the plant include:

- pre-wet building;
- Phase 1 tunnel structure with eight tunnels and enclosed loading area;
- storage shed for raw materials;
- Phase 2/3 tunnel building with 22 processing tunnels and a storage tunnel;
- substrate blocking and packing facility; and
- bioscrubber with chimney exhaust.

In addition there are a number of minor structures including storage sheds, workshops, an office and amenities, weighbridge and water storage tanks (see Figure 3 for the existing site layout). There is also a dwelling on the property near the front gate.

The substrate plant also operates under an Environment Protection Licence (No 2992) issued by the Office of Environment and Heritage (OEH).

Substrate production

Mushroom substrate is the nutrient rich growing medium used by mushroom farms for growing mushrooms. Raw materials used in substrate manufacture include wheaten straw, water, poultry manure, other recycled agricultural products, gypsum and dry stable bedding. The key components of substrate production are depicted in Figure 4 and detailed in Table 1. Processing takes approximately 6 weeks from start of the bale wetting to the end of Phase 3.

Solid raw materials, other than straw, are stored in a three-sided shed, leaving an open side for material to be delivered by tip truck. Straw is stored in the bale storage shed.

Table 1: Stages of mushroom substrate production

Stage	Process description
1. Bale Wetting	Straw bales are spray watered in the bale wetting area for several days to remove the waxy layer and increase water content. Water draining from the bales is collected, filtered, aerated and re-circulated via the sprays.
2. Pre-Wet	The wetted straw bales are laid out in rows in the pre-wet building and blended with raw materials and water.
3. Phase 1 Composting	The pre-wet material is placed into a Phase 1 tunnel, where it must remain above 75° Celsius for at least 90 hours to enable the process to reach completion. Part way through the process, the tunnel is emptied and the contents placed in the hopper where water is added uniformly and the mix returned by conveyor to an empty tunnel. The finished Phase 1 product is placed in the hopper so that the conveyor system can either load it to trucks for delivery as Phase 1 substrate or transfer it to the Phase 2/3 tunnel building for further processing.
4. Phase 2 Processing	Phase 2 is a pasteurisation process undertaken at high temperature on finished compost to kill unwanted spores and organisms.
5. Phase 3 Processing	Phase 3 is the initial growth of mushroom spawn from introduced mycelium, undertaken in controlled atmospheric conditions

Substrate is delivered from the plant following Phase 1, Phase 2 or Phase 3 processing, depending on the preference of mushroom farms.

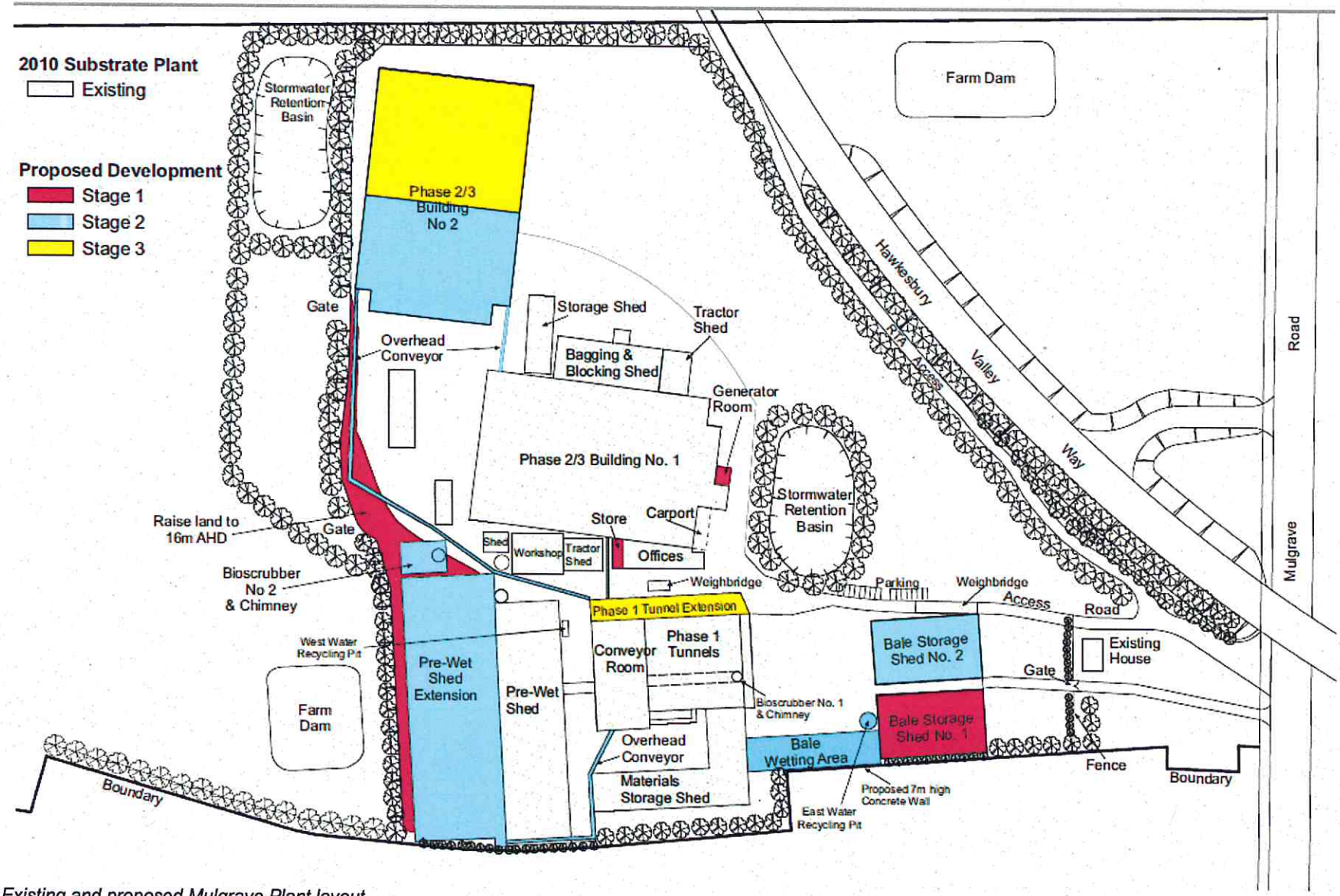

Figure 3: *Existing and proposed Mulgrave Plant layout*

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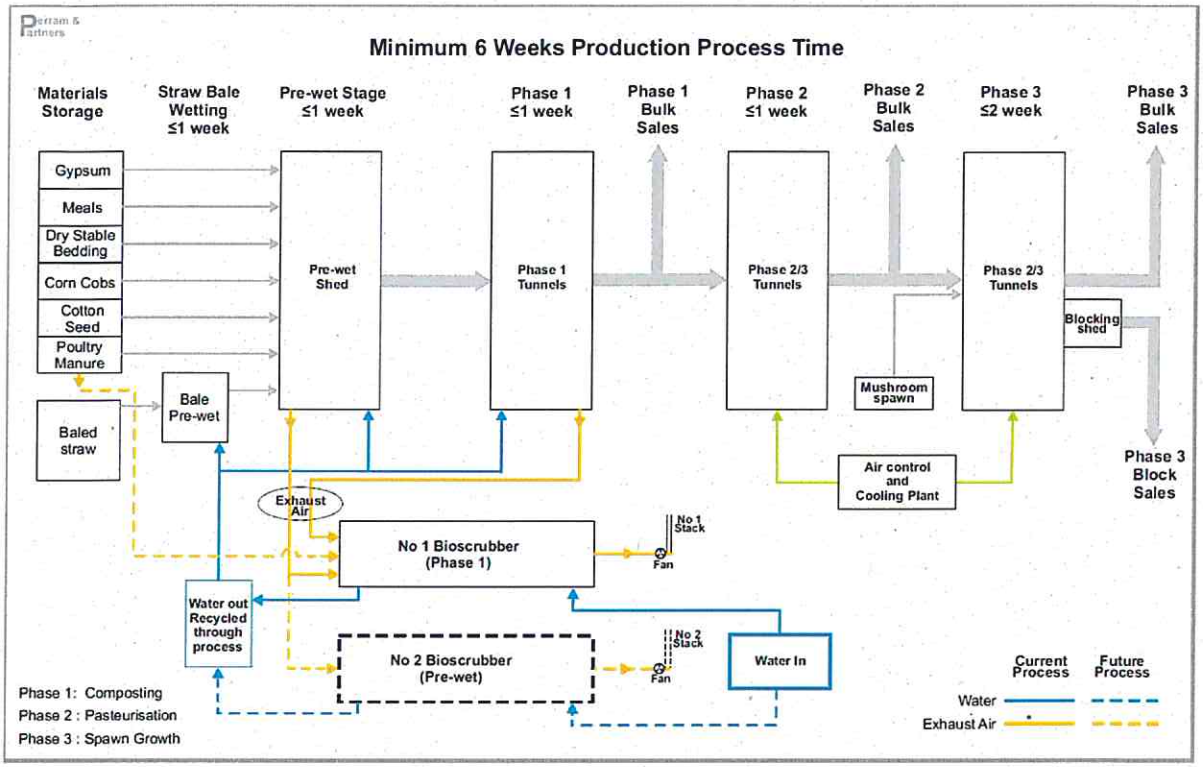


Figure 4: *Proposed and existing Substrate processing*

Project Need

Elf Farm Supplies' development consent limits production to 1,000 tonnes per week of Phase 1 substrate. The facility is currently operating at capacity due to high demand.

Elf Mushroom's Vineyard mushroom farm is also at production capacity, averaging some 55 tonnes of mushrooms per week. In order to meet the increased demand for mushrooms in Sydney, the Proponent needs to increase both the Mulgrave and Vineyard production volume, however, the Vineyard site does not have sufficient land to allow for any expansion.

An evaluation undertaken by the Proponent identified a suitable site on which to locate the mushroom farm, at Londonderry. The Londonderry site is considered to be a suitable location as it is close to the existing substrate plant, the proposed source of substrate and the Sydney market, the principle destination of mushrooms produced at the farm. The proposed farm is also sufficiently close to the existing facility to enable the current experienced workforce to progressively transfer to the new site. Other sites investigated by the Proponent proved unsuitable or were not available.

The Proponent proposes to simultaneously expand the existing substrate plant at Mulgrave as increased substrate production would be required to supply the proposed new mushroom farm at Londonderry.

2. PROPOSED PROJECT

2.1. Project Description

Elf Mushrooms and Elf Farm Supplies propose to establish a new mushroom farm at Londonderry and expand the capacity of their existing substrate plant at Mulgrave. The Proponent is seeking both Concept and Project approval for both sites. All previous planning approvals will be surrendered should the proposed expansion be approved.

The major components of the Project are summarised in Tables 2 and 3, and depicted in Figures 3, 5 and 6. The Project is described in full in the Environmental Assessment (EA), which is attached as Appendix A.

2.2. Mulgrave Substrate Plant

The proposed expansion of the substrate plant at Mulgrave consists of 3 stages. The principal effect of stage 1 is to increase the approved production of Phase 1 substrate from 1,000 to 1,600 tonnes per week. Subsequent stages 2 and 3, aim to update the factory and increase the production to 2,400 and then 3,200 tonnes of Phase 1 substrate per week.

Table 2: Substrate Plant Project Components

Component	Description
Project Summary	**Upgrade of a substrate plant to increase production of Phase 1*and consequently Phase 2** and 3*** substrate**
Proposed key Infrastructure	• extension of the pre-wet building; • two additional Phase 1 tunnels; • two storage sheds for baled straw; • a second bale wetting area; • a second Phase 2/3 tunnel building containing 22 tunnels and a storage tunnel; • a second bio-scrubber with chimney dedicated to treating air exhausted from the pre-wet building; and • other alterations, including a conveyer to transport the pre-wet material to the Phase 1 tunnels, access, parking and drainage systems.
Proposed ancillary infrastructure	• importation of 58,000m^3 fill; • screen landscaping; and • minor reconfiguration of storm water infrastructure.
Minor alterations to existing infrastructure	• extension of the emergency backup generator room; • construction of a small store room; • sealed parking areas; and • installation of an air duct connecting the roof space of the existing raw materials storage to a bioscrubber.
Approximate vehicle movements	**Construction** • an additional 40 small vehicle movements; and • up to 12 truck movements an hour or 70 per day. **Operation** • at full capacity a total of 100 truck movements and 72 small vehicles movements a day.
Operating hours	**Construction hours** • Monday to Friday, 7am – 6pm; • Saturday, 7am – 1pm; and • Sundays and public holidays, construction prohibited. **Operating hours** • 24 hours per day (consistent with existing approval); and • most outdoor operations are scheduled for daylight hours, with deliveries and dispatches occurring throughout the day and night period.
Staging of Works	Construction will be undertaken in three stages, over a period of 10 years. **Stage 1** • an additional straw bale storage shed; • fill 1.6 hectares of the site to 16AHD; and • minor modifications to existing structures described above. **Stage 2** • second pre-wet shed with conveyor; • second bio scrubber with chimney; • second bale storage shed; • second bale wetting area; • a new building with 13 Phase 2/3 tunnels; • overhead supply conveyor; and

	• remove the old weighbridge. **Stage 3** • two Phase 1 tunnels; and • expansion of the new Phase 2/3 tunnel building constructed in Stage 2 to include an extra 9 Phase 2/3 tunnels and a storage tunnel.
Number of employees	An additional 8 employees at full capacity

* Substrate that has completed the composting process only
** Substrate that has been composted and pasteurised
*** Substrate that has been composted pasteurised and inoculated with mushroom spawn

2.3. Londonderry Mushroom Farm

Site description

The proposed Londonderry mushroom farm is located at 521 The Northern Road in the Penrith LGA (see Figure 5). The site is a relatively flat, primarily cleared, 22.66 hectare rectangular block. Zoned RU4 Rural Small Holdings, the site is currently used for grazing and has been previously used as a piggery.

The Project footprint comprises approximately 75 per cent of the allotment, the area of remnant native vegetation at the rear of the property has not been included in the Project's boundaries. This vegetation forms part of a corridor of vegetation running both to the north and south.

The remnant trees at the front of the site form part of the Endangered Ecological Community, Castlereagh Swamp Woodland. Two species, *Dillwynia tenufolia* and *Persoonia nutans* respectively listed as vulnerable and endangered under both the TSC Act and EPBC Act, were identified in the western portion of the property, within the property's proposed asset protection zone (APZ)

There are several dams on the site and two minor natural drainage lines leading to the south west.

Figure 5: *Londonderry site and Project footprint*

The Londonderry site is bounded by rural-residential properties to the north, with the closest dwelling being some 100m from the northern boundary. A single dwelling is located adjacent to the site's southern boundary with a motor vehicle wrecking yard located some 20m further south. Castlereagh Nature Reserve is located to the east, across The Northern Road.

Project Description

The proposed mushroom farm is essentially a large shed enclosing an array of climate-controlled growing rooms supported by ancillary infrastructure and services.

Raw materials for mushroom growing include prepared substrate, peat and water. The substrate would be delivered in semi-trailer trucks up to four days per week from the Mulgrave substrate plant. The substrate would be teased and mechanically loaded to growing shelves where a casing layer of peat mix would be placed over the top.

When shelves are fully loaded with substrate and peat, the growing room would be sealed and maintained at a temperature between 13 and 22 degrees Celsius using chilled water, hot water and steam from the plant room. The growing mix would be periodically inspected and watered.

After two weeks, the first crop would be picked by hand. Each batch of substrate would be capable of yielding three crops of mushrooms over a six week cycle. Hand-picked mushrooms would be moved internally to a packing room where they are packed into cardboard cartons and stacked ready for collection, generally two loads would be dispatched between the hours of 6:00 pm and 4:00 am and two loads during the daytime period.

When the final crop of mushrooms has been picked from a growing room, the room would be heated to 70°C for 24 hours using steam. This destroys any remaining mushroom mycelium, spores or pathogens. After cooling, the spent substrate would be winched out onto an inclined conveyor and loaded to a truck. The room and apron would then be washed down ready for the next growing cycle.

Some of the spent substrate would be directly removed from the farm for use as potting mix or soil conditioner. The remainder would be moved to the spent substrate store where, over a period of weeks, it would be dried and broken down into a drier, fine-grained material suitable for top dressing lawns, playing fields or golf courses in addition to a wider range of agricultural uses.

Table 3: Mushroom Farm Project Components

Component	Description
Project Summary	**Construction and operation of a mushroom farm with the capacity to produce up to 220 tonnes of mushrooms per week. The Project includes processing of spent mushroom substrate into a fine-grained organic material suitable for top dressing for turfed sporting fields.**
Construction – key components	• main building (400m by 79m by 9.8m) containing 50 growing rooms arranged to the north and south of a central corridor extending the full length of the building and ancillary services; and • peat store, workshop, covered loading dock, spent substrate store, office/reception building.
Construction - ancillary components	• water storage dam; wash down water recycling system; sewage treatment plant; • parking for 55 cars; • internal roadways; • vegetated noise attenuation mound 2.5 m high extending the length of the eastern and northern boundaries; • access via a new Channelised Type Intersection (conditioned); and • importation of 100,000m^3 of fill.
Approximate vehicle movements	**Construction** – up to 12 truck movements an hour or 70 per day. **Operation** – at full capacity 128 light vehicle movements, and 34 truck movements per day.
Production capacity	220 tonnes per week
Hours of operation	Construction hours • Monday to Friday, 7am – 6pm; • Saturday, 7am – 1pm; and • Sundays and public holidays, construction prohibited, Operating hours 24 hours per day.
Staging of Works	**Stage 1** would have capacity to produce some 85 tonnes of mushrooms per week, is expected to take 78 weeks to construct, and consists of: • erosion and sediment controls, • clearing and demolition, • earthworks, • construction of the main building including 18 growing rooms and common ancillary areas including packing, loading and storage areas, plant room, workshop and staff amenities; • landscaped noise mound; • additional landscaping; • sewage treatment plant; and • access construction. **Stages 2, 3, 4** and **5** will involve construction of additional growing rooms and an expansion of the spent substrate store. Each stage is expected to take four months and would

Component	Description
	increase production capacity to 110, 140, 165 and 220 tonnes per week respectively.
Water management	Water use • Growing rooms would be washed down with heated water and steam after each mushroom growing cycle, using mains water. • Corridors would be washed down daily, also using mains water. • The building apron external to the growing rooms is washed down after each filling operation and when spent substrate is removed from a growing room using dam water Water treatment • Stormwater runoff would be transferred to the existing dam which would be enlarged to have a storage volume of 14.7 mega litres. This water would be used primarily for washing down surfaces external to the growing rooms and supplying the cooling towers. • Wash down water from growing rooms and the apron would flow to the wash-down water recycling system which would comprise a series of ponds and wetlands to remove organic compounds and nutrients making it suitable for use in the cooling tower and steam generator and for toilet flushing.
Bushfire management	The proposed mushroom farm is located on bushfire prone land, the project includes: • a 10m wide defendable space) to the west, north and south of each building; • a 24 metre asset protection zone (APZ) to the north, east and western aspects of the buildings; and • ember protection to the spent substrate store in the form of drencher sprays.
Number of employees	165 operational workforce at full capacity (35 additional employees)

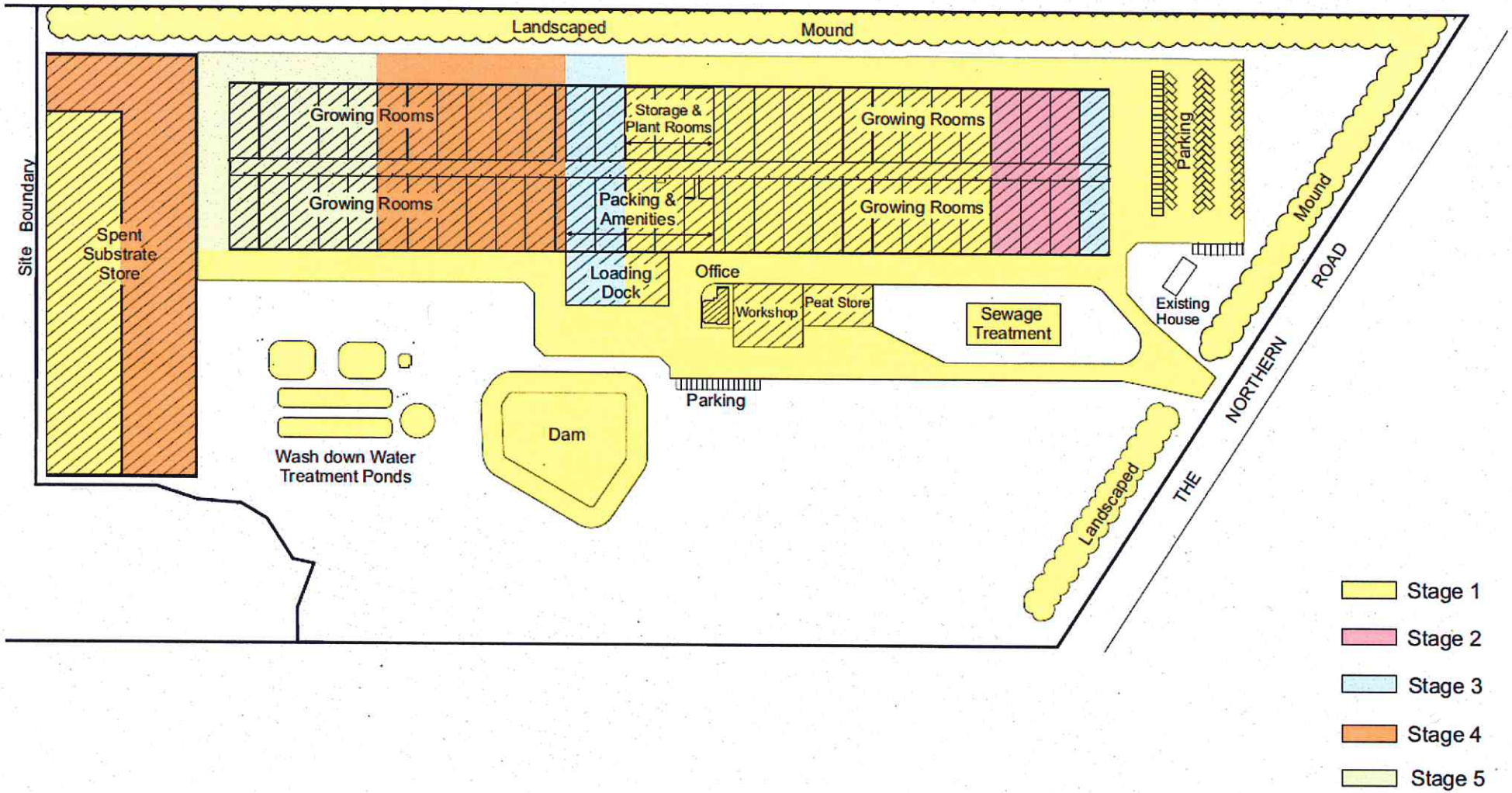


***Figure 6** –Londonderry site (mushroom farm) layout and Stages of Works*

3. STATUTORY CONTEXT

3.1. Strategic Context

The key strategic policy documents relevant to the proposal include:

- NSW 2021 State Plan;
- the Metropolitan Plan; and
- the Penrith Rural Lands Strategy.

NSW 2021 State Plan

NSW 2021 is a 10 year plan that sets strategies and goals for Government action for the State of NSW. In relation to this proposal, the relevant objectives are to grow business investment, deliver 100,000 new jobs and increase recycling. The Project is consistent with these objectives.

Metropolitan Plan

The Metropolitan Plan promotes sustainable growth in the Sydney region until 2036. The Plan sets out key aims for employment, housing, infrastructure and service provision. By 2036 Sydney's growth will require 760,000 more jobs, with half planned for Western Sydney. The mushroom farm and upgrade of the substrate plant will provide an additional 43 jobs which will contribute to this aim.

Sydney's metropolitan fringe is a large, diverse area characterised by varied land uses and landscapes. This is the preferred location for important and sustainable agricultural and resource industries and would ensure Sydney has significant quantities of fresh food, close to market, and an ongoing supply of materials for construction and related industries. The Project will produce 220 tonnes of mushrooms per week at full capacity which will contribute to Sydney's food security.

Penrith Rural Lands Strategy and Penrith Rural Lands Study

Penrith City Council has adopted a Rural Lands Strategy which makes recommendations for the strategic direction of the rural lands of Penrith. The strategy identifies that agricultural land is a finite resource and that it is important to locate and preserve land for potential agricultural use now and in the future. The Rural Lands Strategy aims to encourage a wide range of sustainable agricultural and rural land uses.

Specific aims of the Rural Lands Strategy include to:

- promote agriculture and other rural land-uses that are sustainable in the longer term, through the use of appropriate resource and environmental management policies, plans, guidelines and practices; and
- promote a sustainable economic environment that fosters economically viable rural development, employment, transport and future investment opportunities.

The *Penrith Rural Land Study* also recognises the need to ensure that agricultural uses are not unreasonably constrained due to conflicts with adjoining land uses, and provide long term security for local agriculture and other compatible rural economic pursuits.

The Londonderry mushroom farm will enable the continued use of agricultural land for agricultural pursuits. The design has taken into consideration the environmental constraints of the site by avoiding the more heavily vegetated parts of the site, ensuring water is reused and if not, treated to meet the pollution targets in DECCW's *Draft 2007 Managing Urban Stormwater: environmental targets*. The proposal will also be visually and acoustically protected by the landscaped mounds.

The Department acknowledges that concerns were raised over the suitability of the site (see Section 4.3), however, the Department considers that the proposal is consistent with both the objectives of the Rural Lands Strategy and with the relevant land use zone which aims to enable sustainable primary industry and encourages diversity and employment opportunities in relation to primary industry enterprises, particularly those that are more intensive in nature (Appendix D).

3.2. Major Project

The proposal is classified as a Major Project under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) because it has a capital investment of more than $30 million and employs more than 100 people for the purposes of:

- a composting facility (the substrate plant) under 3(c) of Schedule 1 of *State Environmental Planning Policy (Major Development) 2005; and*

- a development for a purpose that the Minister considers constitutes an agricultural produce industry clauses 3(d) of the *State Environmental Planning Policy (Major Development) 2005.*

Part 3A of the EP&A Act, as in force immediately before its repeal on 1 October 2011 and as modified by Schedule 6A to the Act, continues to apply to transitional Part 3A projects.

Consequently, this report has been prepared in accordance with the requirements of Part 3A and associated regulations, and the Minister (or his delegate) may approve or disapprove of the carrying out of the project under section 75J of the Act

The Minister has delegated his functions to determine Part 3A development applications to the Department where:

- the council has not made an objection, and
- there are less than 25 public submissions objecting to the proposal, and
- a political disclosure statement has not been made in relation to the application.

There have been 12 submissions received from the public and although both Penrith and Hawkesbury councils have made submissions, neither council has objected to the proposal. No political disclosure statement made for this application or for any previous related applications, and no disclosures made by any persons who have lodged an objection to this application.

Accordingly the application is able to be determined by the Deputy Director General under delegation.

3.3. Other Approvals

The Proponent would surrender existing consents following project approval.

It would also seek to vary its existing Environmental Protection Licence (EPL) for the substrate facility and obtain an additional licence for the mushroom farm. Further, approvals from the Roads and Maritime Services are required (RMS) under the *Roads Act 1993.*

Under Section 75V of the EP&A Act, these approvals cannot be refused, and must be substantially consistent with the Part 3A approval.

3.4. Permissibility

Under Section 75J of the EP&A Act, the Minister or his delegate cannot approve the carrying out of a project that would be wholly prohibited under an environmental planning instrument. The two sites are subject to different zonings in different local environment plans.

Mushroom Farm Site

The Londonderry site is located on land zoned partly RU4 – Primary Production Small Lots and partly SP2 – Infrastructure (Classified Road) under the *Penrith Local Environmental Plan 2010.* The mushroom farm site zoning is defined as Agriculture which is permissible with consent in the RU4 zone. The SP2 zoning applies to a narrow strip along The Northern Road frontage where uses are restricted to roads and other infrastructure. No development is proposed in this zone.

Substrate Plant Site

The Mulgrave site is zoned Rural Living under the *Hawkesbury Local Environmental Plan (LEP) 1989.* Mushroom substrate production is defined as a rural industry. Rural industries are a prohibited land use within the Rural Living zone. However, the portion of the Mulgrave site containing the substrate plant is zoned IN2 in the Draft *Hawkesbury Local Environment Plan 2011 (*standard instrument) in which rural industries are permissible.

To overcome this permissibility issue, the Proponent has sought Concept Plan approval. As set out in Section 1, the Department is satisfied that the Concept Plan should be approved because otherwise the current zoning would prevent this agricultural development taking place on the site which is contemplated in the emerging LEP. Consequently, the Minister or delegate may approve the carrying out of the Project.

3.5. Environmental Planning Instruments

Under Sections 75I(2)(d) and 75I(2)(e) of the EP&A Act as in force immediately before its repeal on 1 October 2011 and as modified by Schedule 6A to the Act, the Director-General's report for a project is required to include a copy of, or reference to, the provisions of any State Environmental Planning Policy (SEPP) that substantially governs the carrying out of the Project, and the provisions of any environmental planning instruments (EPI) that would (except for the application of Part 3A)

substantially govern the carrying out of the Project and that have been taken into consideration in the assessment of the Project.

In relation to this particular project, the key EPIs are:

- *State Environmental Planning Policy (Major Development) 2005;*
- *State Environmental Planning Policy (Infrastructure) 2007;*
- *State Environmental Planning Policy No. 30- Intensive Agriculture;*
- *State Environmental Planning Policy No. 55 - Remediation of Land;*
- *Sydney Regional Environmental Plan No 20- Hawkesbury – Nepean River (No 2- 1997)*
- *Penrith Local Environmental Plan, 2010;*
- *Hawkesbury Local Environmental Plan, 1989*

The Department's consideration of relevant SEPPs and EPIs is provided in Appendix D.

3.6. Objects of the EP&A Act

Decisions made under the EP&A Act must have regard to the objects of the Act, as set out in Section 5 of the Act. The relevant objects are:

(a) to encourage:
- *(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,*
- *(ii) the promotion and co-ordination of the orderly and economic use and development of land,*
- *(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and*
- *(vii) ecologically sustainable development.*

The Department has fully considered the objects of the EP&A Act, including the encouragement of ESD, in its assessment of the application. The assessment integrates all significant economic and environmental considerations and seeks to avoid any potential serious or irreversible damage to the environment, based on an assessment of risk-weighted consequences.

The EP&A Act adopts the definition of Ecologically Sustainable Development (ESD) found in the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD requires the effective integration of economic and environmental considerations in decision-making processes and that ESD can be achieved through the implementation of:

(a) the precautionary principle - namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:
- *(i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and*
- *(ii) an assessment of the risk-weighted consequences of various options,*

(b) inter-generational equity—namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,

(c) conservation of biological diversity and ecological integrity—namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,

(d) improved valuation, pricing and incentive mechanisms—namely, that environmental factors should be included in the valuation of assets and services, such as:
- *(i) polluter pays—that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,*
- *(ii) the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,*
- *(iii) environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.*

The Department has also considered the encouragement of ecologically sustainable development (ESD) and considers that the proposed mushroom farm and substrate plant promote ESD as they will provide jobs in the Western Sydney area and at the same time manage potential impacts of the Project to ensure an acceptable level of environmental performance.

Detailed assessment of the environmental issues associated with the Project is provided in Sections 5 and 6.

3.7. Statement of Compliance

In accordance with Section 75I of the EP&A Act, the Department is satisfied that the Director-General's environmental assessment requirements have been complied with.

4. CONSULTATION AND SUBMISSIONS

4.1 Exhibition

Under Section 75H(3) of the EP&A Act, the Director-General is required to make the environmental assessment (EA) of an application publicly available for at least 30 days. After accepting the EA, the Department publicly exhibited it from 15 December 2010 until 14 February 2011 (62 days) on the Department's website, and at:

- the Department's Information Centre,
- the Nature Conservation Council's Sydney office;
- Hawkesbury City Council's administrative office; and
- Penrith City Council's administrative office.

The Department also advertised the Project in the Penrith Press on 14 December 2010 and 18 January 2011 and in the Rouse Hill Times on 15 December 2010 and 19 January 2011. Landholders and relevant State and local government authorities were also notified in writing.

The Department received 18 submissions during the exhibition of the EA (see Appendix B) – 6 submissions from public authorities and 12 submissions from the general public.

A summary of the issues raised in submissions is provided below.

4.2 Public Authority Submissions

Six submissions were received from public authorities. None of the agencies objected to the Project, however most raised issues and/or recommended conditions.

The **Office of Environment and Heritage (OEH) (former Department of Environment Climate Change and Water)** does not object to the Project however the OEH raised issues over air quality and odour, Aboriginal cultural heritage, wastewater management and noise limits.

The **NSW Office of Water** does not object to the Project, however, the NOW raised issues regarding riparian corridors and licensing requirements.

The **Sydney Regional Development Committee (including the Roads and Maritime Services) (SRDAC)** recommended conditions including the construction of a 'Type CHR' Rural Intersection access at the Londonderry site on The Northern Road.

Penrith City Council raised a number of concerns regarding the Water Recycling System Report, on-site sewerage disposal, compliance with the *Penrith Development Control Plan 2010*, visual impact, the noise assessment, preservation of existing natural vegetation and internal traffic signage. Penrith City Council also recommended a number of conditions regarding air quality.

Hawkesbury City Council raised concerns regarding odour.

The **Rural Fire Service** (RFS) recommended a number of standard conditions of approval.

4.3 Public Submissions

Twelve submissions were received from the public. Of the 12 public submissions 11 objected to the Project and 1 did not object but raised concerns. Seven submissions (1, 3, 4, 5, 6, 7, 11, 12) raised concerns over the proposed mushroom farm and four (2, 8, 9, 10) to the proposed expansion of the substrate plant.

The key issues raised in public submissions are listed in Table 4.

Table 4: Summary of Issues Raised in Public Submissions

Issue (submission number)	Substrate Plant Number of submissions (out of a total of 4)	Mushroom farm Number of submissions (out of a total of 7)
Air quality/Odour (1, 2, 3, 5, 6, 7,8, 9, 10, 11, 12)	4	7
Property Values (1, 3, 6, 7, 11)	0	5
Traffic (1, 3, 4, 6, 7)	0	5
Hazards and health/safety (1, 3, 4, 5, 6, 7, 10)	1	6
Accuracy of information in EA (2)	1	0
Noise (2, 4, 5, 6, 7)	1	4
Water management/quality (2, 6, 7, 11, 12)	1	4
Cumulative impacts (1, 3, 6, 7)	0	4
Appropriateness of the Project in the context of the surrounding area (3, 6, 7, 11)	0	4
Biodiversity (6)	0	1

5. ASSESSMENT (MUSHROOM FARM)

In its assessment of the merits of the Project, the Department has considered the following:

- *Mushroom Industry Expansion in Western Sydney – Environmental Assessment*, prepared by Perram and Partners and dated December 2010;
- submissions and response to submissions on the proposal (see Appendix C);
- the relevant environmental planning instruments, policies and guidelines; and
- the relevant provisions of the EP&A Act, including the objectives of the Act.

The Department considers the key issues associated with the proposed mushroom farm are traffic, visual and biodiversity impacts. Other issues are considered in Table 4.

5.1 Traffic

Issue

The Mushroom Farm could increase road safety risks along The Northern Road (at Londonderry).

Consideration

The Project is predicted to generate some 34 heavy vehicle trips and 128 small vehicle trips each day. This equates to some 48 vehicle movements per hour during peak periods. The proposed site access is off The Northern Road (see Figure 7) which is currently used by up to 9,621 vehicles per day.

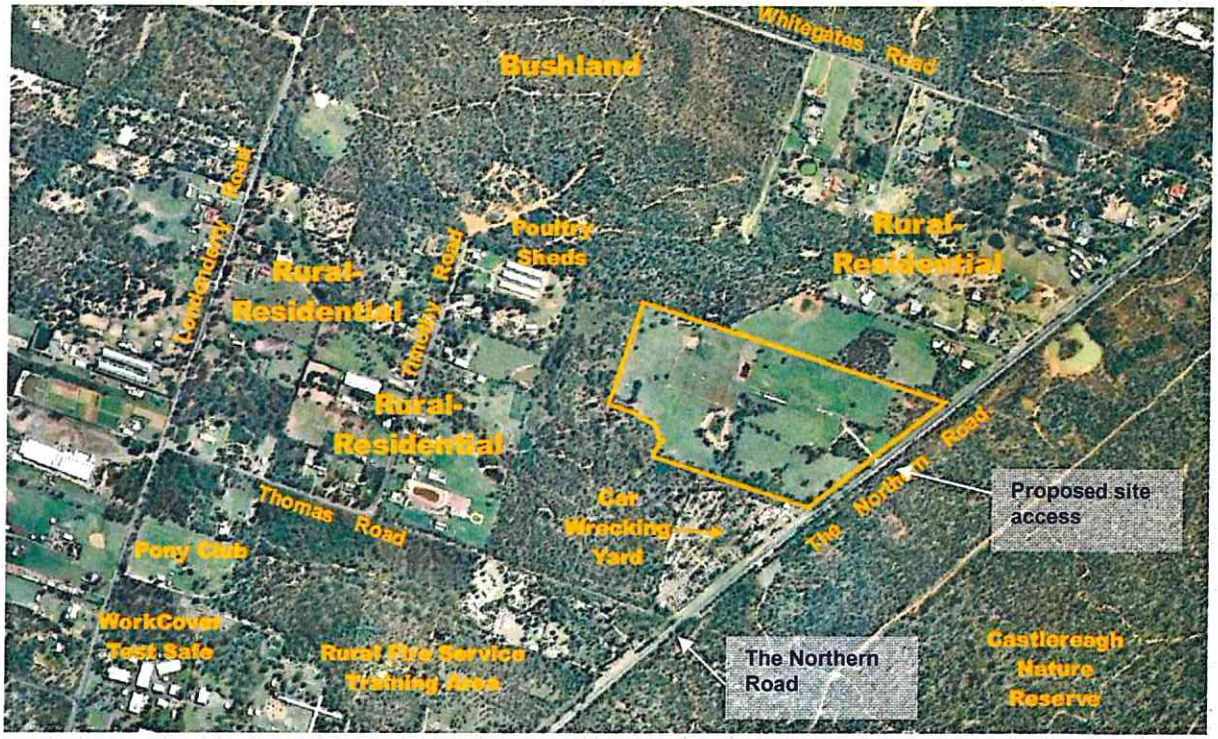


Figure 7: *Surrounding road network*

Access arrangement

The Northern Road, a Roads and Maritime Services (RMS) owned road, is part of Sydney's regional road network linking Narellan in the south to Windsor in the north. The Northern Road is currently operating at a Level of Service C, indicating stable traffic flow where speeds and manoeuvrability are somewhat controlled by the higher traffic volume. While the RMS and the Department are satisfied that The Northern Road can safely accommodate the additional traffic associated with the Project, concerns were raised by the RMS regarding the access to the site.

The traffic assessment estimated small vehicle trip generation using a figure of one car per two employees based on experience at the Tolson Group's Vineyard farm. However, the Vineyard site is located close to a train station. The Department considers that it is possible that trip generation has been underestimated, particularly given the Londonderry site has no access to a train station.

A 'spot count' was undertaken at the Vineyard mushroom farm in response to the Department's request for additional information. The count showed that of the 83 employees present, 50 drove to

work, 20 were passengers and 13 caught trains, giving a ratio on that particular day of one car per 1.66 employees. If this figure was applied to the proposed mushroom farm, the maximum hourly vehicle numbers would be 67, rather than 48 as originally predicted.

The traffic assessment for the Project determined that an auxiliary access treatment was required based on predicted traffic flows along The Northern Road and predicted Project trip generation. The traffic assessment based its recommendation on the RTA's *Road Design Guidelines*. However, the RTA and Sydney Regional Development Committee recommended a channelised intersection treatment (CHA) to be constructed prior to Stage 5, in accordance with Austroad's *Guide to Traffic Engineering Practice*.

Although – according to the EA – the Project is only expected to generate 34 heavy vehicles and 55 small vehicles a day, the Department considers that the traffic volume on The Northern Road, combined with the uncertainty surrounding the trip generation figure is sufficient to warrant a channelised treatment type to be constructed prior to the commencement of operation of stage 1. This access arrangement will ensure the Project has minimal impact on the safety and operation of The Northern Road and will also satisfy the SRDAC's recommendation. Notwithstanding, the recommended condition includes some flexibility, allowing the Proponent to seek approval to defer construction of the channelised intersection to a later stage if they can demonstrate to the Director-General that deferral is warranted and will not affect the safety of the surrounding road network.

Car parking provision

Neither Council's Development Control Plan nor the RTA's *Guide to Traffic Generating Developments* have specific requirements for on-site parking for intensive agriculture. Council's DCP defers to the RTA guidelines or, if the land use type is not listed, requires a site specific car parking analysis. The closest listed land use to this type of intensive agriculture in the RTA guidelines would be "factories".

The RTA's recommended parking provision rate for factories is 1.3 spaces per 100m^2. This would equate to 331 parking spaces that are required for operation of the mushroom farm. However, the RTA guidelines also allow for a reduction in parking provision when employee parking demand is substantially less than the recommended rate. Notwithstanding, provision must be made for additional future use by setting aside (but not necessarily surfacing) space for car parking.

On this basis, the traffic assessment concluded that 55 spaces were required (based on a maximum of 110 employees per shift).

To address the uncertainty in relation to the required car parking requirements, the Department has recommended the following conditions of approval:

- prior to commencement of construction of Stage 2, the Proponent shall provide the Department with a car parking analysis prepared by an appropriately qualified traffic consultant. The assessment shall be prepared to re-evaluate parking requirements; and
- if the assessment determines that parking requirements have been underestimated, additional spaces shall be provided during construction of the relevant stages.

The Proponent has confirmed that there is sufficient room on site for additional parking, if required.

Conclusion

The Department is satisfied that the recommended conditions would reduce traffic impacts to acceptable levels, and ensure sufficient parking is provided on site.

5.2 Biodiversity

Issue

The Project could have an adverse impact on biodiversity.

Consideration

The eastern 70% of the site is predominantly cleared with a number of scattered patches of remnant vegetation. The vegetation remnants include a patch of Castlereagh Swamp Woodland, which is listed as an endangered ecological community (EEC) under the *Threatened Species Conservation Act 1995*. Construction of the proposal would clear the majority of the remnant vegetation, including a portion of the Castlereagh Swamp Woodland (see Figure 8 - the vegetation within the Project footprint would be removed, the remainder would be retained). Notwithstanding, given that the EEC remnant to be removed is small, isolated and in poor condition, both the Department and the OEH agree that its removal alone is not significant.

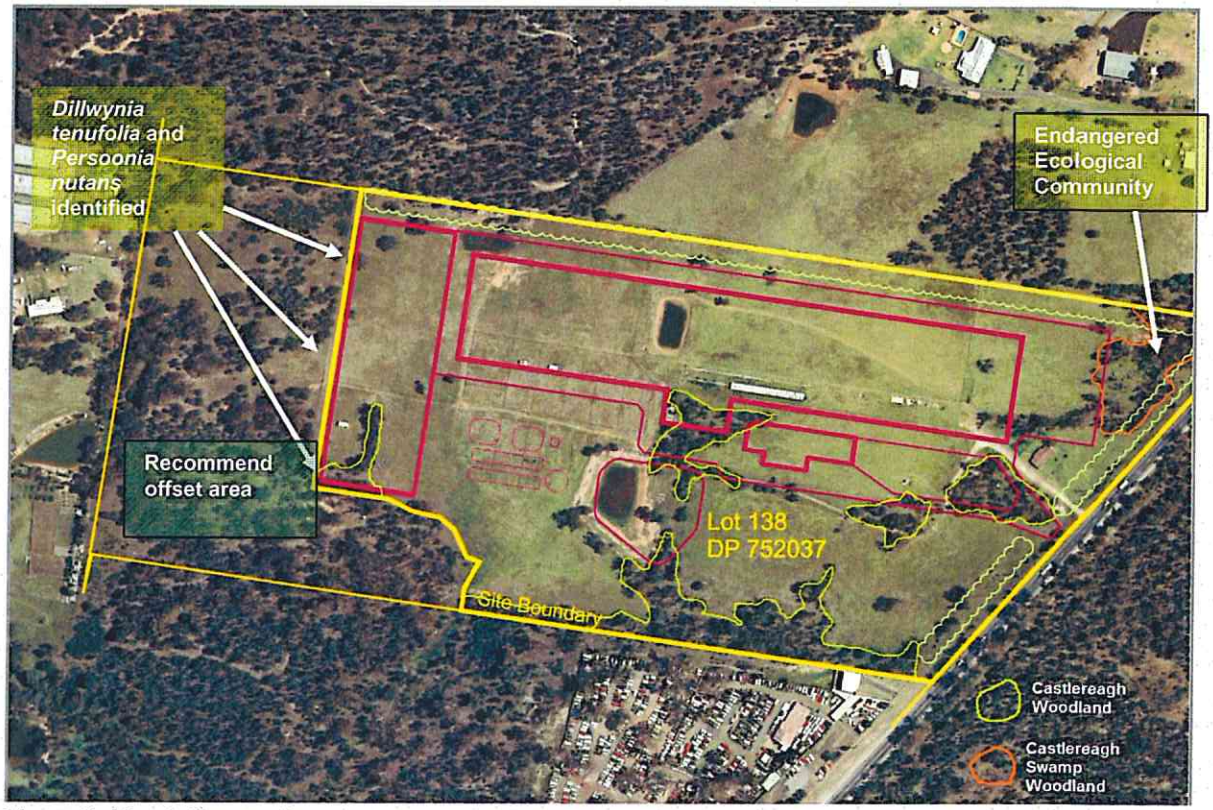


Figure 8: *Vegetation on site*

The western end of the property is more heavily vegetated. However, this area was not included in the original flora and fauna assessment, even though some of the vegetation is within the proposed bushfire Asset Protection Zone (APZ). Subsequent surveys, undertaken at the Department's request, identified two species, *Dillwynia tenufolia* and *Persoonia nutans* that are respectively listed as vulnerable and endangered under both the TSC Act and EPBC Act.

The Proponent suggested that these species could be preserved by the provision of fencing alone. The OEH raised concerns that fencing might be able to protect the individual plants that are currently above ground in the short term, however, the long term survival of these species within small protected areas is questionable. The OEH and the Department consider that it is highly likely that the rest of the APZ area contains habitat for these species and seed in the soil which would be detrimentally affected by APZ management such as slashing. Therefore both the OEH and the Department consider that the Project is likely to result in the loss of all of the vulnerable and endangered species within the APZ.

As a result, the Department has recommended an offset package that requires the proponent to:

- prepare and implement a Vegetation Management Plan to provide for the protection and enhancement of biodiversity values within the woodland on the western fifth of the site. The VMP would include details of the mechanism that would be used to ensure the vegetation is protected in perpetuity; and
- fence off and revegetate the riparian corridor adjacent to South Creek at the Mulgrave site (see Table 5).

Conclusion

The Department considers that these recommended conditions would:

- ensure the long-term survival of any previously unidentified *Dillwynia tenufolia* and *Persoonia nutans* within the western portion of the site;
- ensure the connectivity with the vegetation on the properties' to the north and south is maintained; and
- aid in improving the health of South Creek.

Consequently the Department is satisfied that these measures would reduce the biodiversity impacts of the Project to an acceptable level.

5.3 Landscaping and Visual Amenity

Issue

The Project could impact on the visual amenity of the area.

Consideration

The site is a predominantly vacant paddock of approximately 22.66 hectares bounded by rural residential properties to the north and south and The Northern Road and Castlereagh Nature Reserve to the east (see Figure 7). The rear of the property is vegetated, restricting views from the west.

The Project's main building would have the form of a large shed approximately 420 metres long by 79 metres wide with a wall height of 9.8 metres. The pitched roof would extend to a ridge height of 11.9 metres. The building would be, by far, the largest structure in the locality (see Figure 9).

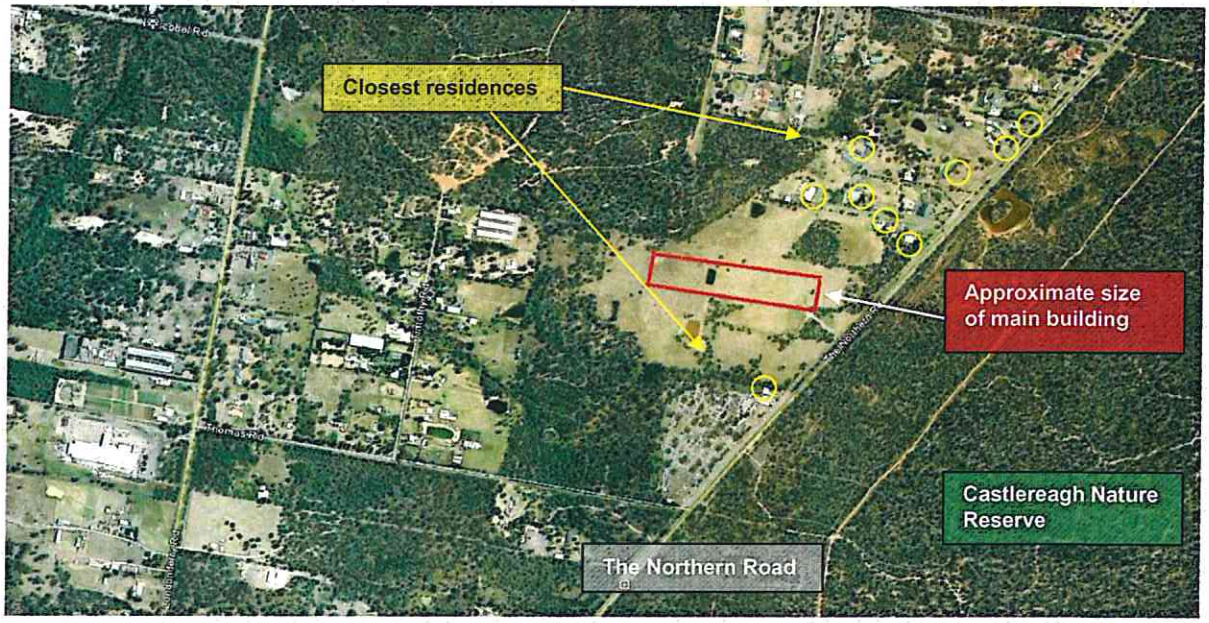


Figure 9: *Visual context*

The proposed external finishes would comprise insulated panels, colorbond sheeting, and concrete panels or blockwork. The pitched roof would be steel (zincalume) with a series of hooded box ducts erected along the ridge, extending approximately 1m above the roof, see Figure 10 for a typical cross section. The colour palate would be similar to that at the substrate plant, see Figures 11 and 12.

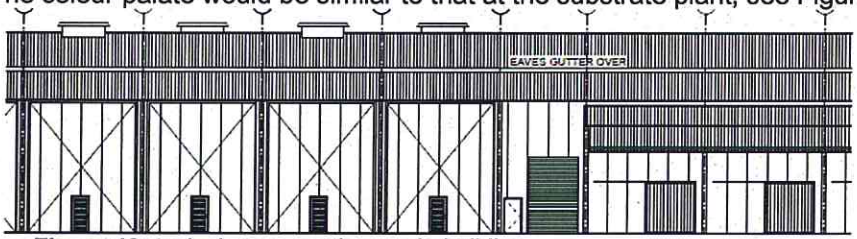
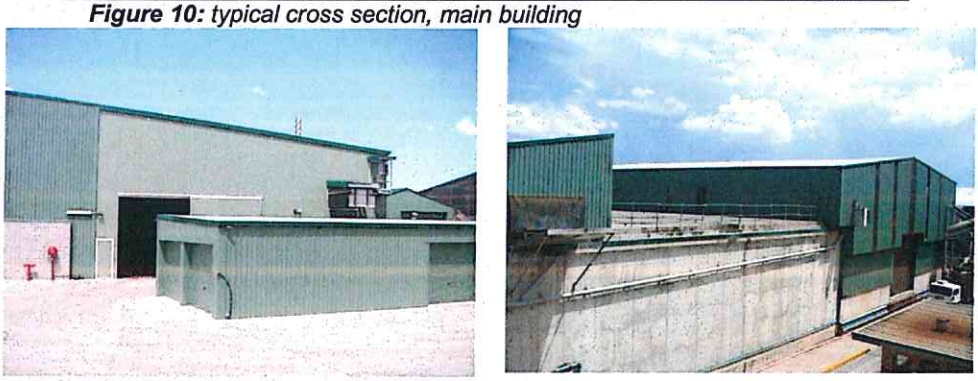


Figure 10: *typical cross section, main building*



Figures 11 and 12:– *Finishes are proposed to be similar to the Substrate plant buildings*

The spent substrate store would be located to the west of the main building. The store would comprise a concrete pad approximately 183 metres by 72 metres with a canopy supported on columns. The canopy would extend to a height of 10.4 metres.

The roadway and external work areas would be illuminated at night.

Up to 10 residences may have views of the Project, the nearest being some 180m to the south and 150m to the north. Notwithstanding, no submissions were received on this issue. Although the building may be visible from these properties, views would be partially and in some cases completely screened by existing vegetation (see Figure 13 for an artist's impression of the main building viewed from the adjacent property to the north).

***Figure 13** photomontage, looking south from adjoining property*

The Proponent has proposed a range of management measures aimed at reducing visual impacts of the Project, including:

- a 2.5-metre high landscaped mound along the site's northern and eastern boundaries which would obscure views of the site from The Northern Road and properties to the north;
- a building setback of 25 metres from the landscaped mound;
- external building finishes and colours to reduce glare and minimise visual obtrusiveness;
- landscaping;
- a visual assessment to be undertaken during each stage of the development; and
- screen plantings to residents on properties to the north.

In addition, to ensure the proposed landscaping is appropriate, the Department has recommended a condition requiring the Proponent to prepare a Landscape Management Plan in consultation with Penrith City Council and to the satisfaction of the Director-General.

Conclusion

Given that the majority of dwellings that may have views of the Project are screened by existing vegetation, the Department is satisfied that the proposed management measures in combination with the recommended conditions are sufficient to ensure visual impacts are minimised to acceptable levels.

5.4 Other Issues

Table 5: Summary of Other Issues

Issue	Assessment	Recommendation
Air quality/Odour	▪ Emission sources, including the spent compost, sewage treatment plant and wastewater treatment ponds, would have the potential to cause offensive odour; ▪ Modelling indicated that the farm would comply with the OEH's most stringent odour criteria of 2 odour units at all sensitive receptors; and ▪ The Department is satisfied that the Proponent's proposed management measures, including regular maintenance of the recycled water system would ensure that odour emissions from the Project would comply with the relevant odour criteria.	• Recommended conditions require that the Proponent must not cause or permit the emission of offensive odours from the site.
Noise	▪ Noisy activities during construction would include noise from trucks, concrete pumps, compactors, cranes and dozers; ▪ The noise impact assessment included a series of management and mitigation measures to minimise construction noise, including source controls on plant, acoustic screening and installation of an environmental bund to the north of the site. With the implementation of these measures it was found that construction noise would comply with applicable criteria; ▪ The Department has recommended construction noise criteria as well as a condition requiring the Proponent to prepare a Construction Noise and Vibration Management Plan and monitoring program that would be used to demonstrate compliance with the recommended criteria; ▪ During the initial three month period of construction, when the environmental bund is being installed, there may be some exceedance of the construction noise criteria. Given that the bund would provide long-term noise attenuation (albeit some short term impacts), the Department recommends that these criteria do not apply to works associated with the construction of the environmental bund; ▪ Noisy activities during operation would include trucks, blenders, head filling machines as well as compressors, condensers, chillers and boilers; ▪ The noise impact assessment predicted that operational noise would comply with the relevant operational noise criteria and the predicted traffic would not increase road traffic noise be more than 2dB(A); ▪ The OEH recommended operational noise limits. The Department has included the OEH's recommendation in the recommended conditions of approval; ▪ In addition a condition has been recommended requiring the Proponent to prepare and implement a Noise Management Plan, in consultation with the OEH and for approval by the Department. The Plan would include a noise monitoring	Recommended conditions require the Proponent to: • prepare and implement a construction noise and vibration management plan; • install the northern environmental bund prior to commencement of other construction activities; • comply with site specific noise criteria and hours of operation; • undertake noise monitoring within 3 months of commencement of operation to determine compliance with criteria; and • undertake all reasonable and feasible measures to reduce the impact of road traffic noise.

Issue	Assessment	Recommendation
	protocol for evaluating compliance with the noise assessment criteria; and ▪ The Department is satisfied that these measures would ensure that the Project has minimal noise impacts.	
Water management	▪ Water demand estimated as 139.5 kL per day, half of which will be sourced from the enlarged dam and water recycled on-site; ▪ The Project would not increase flows post development; ▪ The proposed treatment train would achieve the pollutant load reduction targets in DECCW's draft policy *Managing Urban Stormwater: Environmental Targets (2007);* ▪ Treated effluent from the sewage treatment plant would by irrigated to the landscaped mounds. The Proponent has demonstrated that the landscape mounds have sufficient capacity for the application of the effluent; ▪ The OEH and Council are satisfied with the proposed treatment measures. However, both advised that the on-site sewage treatment and disposal would have to be managed appropriately; ▪ As such, the Department has recommended a condition of approval requiring the Proponent to prepare a Water Management Plan in consultation with the OEH, Penrith City Council and NOW; and ▪ The Department considers that the proposed management measures and recommended conditions would reduce water impacts to an acceptable level.	• Recommended conditions require the Proponent to: prepare a Water Management Plan for the site in consultation with the OEH, Council and NOW.
Aboriginal heritage	▪ The OEH raised concerns over the deficiency of the Indigenous Heritage Assessment; ▪ Additional information provided by the Heritage Consultant validates the conclusion of the assessment, namely that Aboriginal cultural heritage values were unlikely to occur in the study area; and ▪ Notwithstanding, the Department has recommended a number of conditions to ensure previously un-identified sites or relics are appropriately handled if identified during construction works.	• Recommended conditions require the Proponent to prepare a Heritage Management Plan that includes procedures for managing any previously unidentified Aboriginal objects or places.
Contamination	▪ As the site has been used as a piggery, the Proponent's EA included an assessment undertaken in accordance with SEPP 55; and ▪ Contaminants were found to be below the Health Based Investigation Level for Standard Residential Development and as such, would pose no risk to human health or the surrounding environment.	• No conditions have been recommended.
Greenhouse Gas	▪ Emissions are predicted to be 6,127 t CO2-e per year or 0.004% of NSW's 2008 greenhouse gas emissions which is considered negligible; ▪ Recommended management measures will help minimise greenhouse gas emissions.	Recommended conditions require the Proponent to: • prepare and implement a Greenhouse Gas Management Plan for operations; and • implement all reasonable and feasible measures to minimise energy use and greenhouse gas

6. ASSESSMENT (SUBSTRATE PLANT)

In its assessment of the merits of the Project, the Department has considered the following

- *Mushroom Industry Expansion in Western Sydney – Environmental Assessment*, prepared by Perram and Partners and dated December 2010;
- submissions and response to submissions on the proposal;
- the relevant environmental planning instruments, policies and guidelines; and
- the relevant provisions of the EP&A Act, including the objectives of the Act.

The key issue associated with the proposed expansion to the substrate plant is odour. Other issues are considered in Table 6.

6.1 Odour

Issue

The facility has the potential for offensive off-site odour emissions.

Consideration

Context

The proposed Project site is located on a wide tract of rural land on the South Creek floodplain in Londonderry. The existing facility is bounded by a market garden to the south, an industrial estate to the east and, some 700m to the north, a sewage treatment plant. The closest residential areas are the scattered houses of Mulgrave approximately 200m to the south-west and a Windsor housing estate approximately 400m to the west (see Figure 13). Since operation commenced in 1981, the facility has received numerous odour complaints, however, the Proponent has attributed many of these to other, also odourous, land uses in the vicinity.

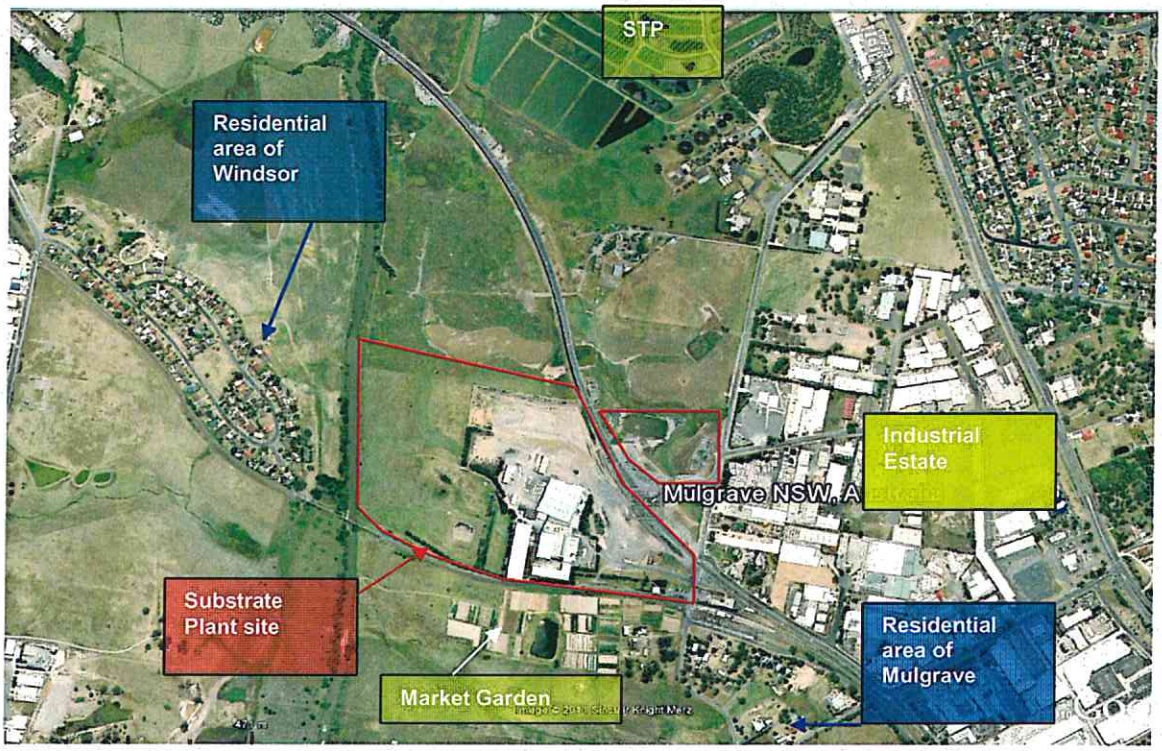


Figure 13: *Site context*

Assessment

Modelling undertaken in 2001/02 by Holmes Air Science predicted that the existing operation of the facility would not cause the emission of offensive odour. Though Hawkesbury City Council and adjacent residents have raised concerns about the odour impacts of the existing operation, the OEH (which regulate the existing facility) consider that it is not causing the emission of offensive odour and is complying with s129 of the POEO Act. To ensure a consistent assessment methodology the OEH recommended that the same assessment methodology that was used by Holmes in 2001/02, be applied to the current proposal.

The odour impact assessment for this proposal was also undertaken by PAE Holmes in accordance with DECCW's '*Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW*' and DEC's A*ssessment and management of odour from stationary sources in NSW.* The assessment used the computer based dispersion model CALPUFF to determine the possible off-site odour emissions. The predicted odour impacts were ascertained using estimated odour emission rates from the key odour generating sources from the proposal including the chicken manure stockpile, pre-wet material, recycled water pit and bale wetting area as well as the bio-scrubbers. The odour predictions from this assessment were compared against the OEH's odour assessment criteria at 19 sensitive receptors.

The OEH reviewed the odour assessment and the associated documents and, following some requested amendments of the assessment prior to exhibition, has agreed with the methodology used. As such, the Department is satisfied that the odour assessment is appropriate for identification and evaluation of the Project's odour impacts.

In applying the same approach as used in 2002, the odour assessment predicted compliance with the assessment criterion at all receptors during all stages of the Project (with the exception of receptors 7 and 11 at which marginal non-compliance was predicted during stage 1 and stage 3 respectively. The marginal non-compliance during these stages would be hardly perceptible as it would be a very minor increase above the facility's current operations).

The facility holds an EPL which limits emission rates for the existing bio-scrubber stack to 55,400ou.m^3/s. The odour assessment predicts that this stack limit may be exceeded during stage 3, but with emissions dispersing away from the stack, it is predicted that compliance with the 2ou criterion would still be achieved at sensitive receptors.

The assessment concluded that a higher point source emission would not necessarily translate to offensive odour at receivers. The Department and OEH accept this finding. Notwithstanding, the Proponent has committed to ensure that the proposed expansion would not result in odour emissions from the plant in excess of the current licence limit.

As such, the Department has recommended odour emission limits consistent with those contained in the site's EPL. The OEH concurs with this approach and has stated it would consider amending the EPL to reflect the predicted stage 3 odour emissions, if necessary.

Hawkesbury Council and some residents raised concern about the potential odour from the Project and the adequacy of the odour assessment, particularly in its use of meteorological data. The Proponent responded by explaining that the odour assessment used meteorological data that considered the range of weather conditions likely to occur in the area, in accordance with the relevant guidelines.

Nevertheless, the Department considers that compliance with an odour assessment criterion is not the only relevant information to consider during assessment of the proposal. Other points to consider are:

- whether there is a predicted change in the type of odour compared to emissions from the existing facility;
- whether best practise measures would be used to prevent or minimise odour; and
- the potential for additional odour mitigation strategies to be implemented should emission of offensive odour occur in the future.

To reduce the predicted odour impacts, the Proponent has committed to a range of best practice measures for the prevention or minimisation of odour (outlined in the submissions report) including:

- storage of the stable bedding in the expanded pre-wet shed extension building; and
- complete enclosure of the chicken manure stockpile (if found to be contributing to odour emissions).

The Department has also identified a number of additional odour controls that could be implemented in the unlikely event the expanded facility is causing offensive odour impacts – such as, complete enclosure of the bale wetting area. These measures have been included in the recommended conditions of approval, which also incorporate the OEH's recommendations and include:

- a detailed odour management plan with appropriate monitoring to be prepared and implemented within 3 months of the date of the approval, to the satisfaction of the OEH and the Director-General;
- an independent audit of the performance prior to the operation of each stage (ie stages 1, 2 and 3) of the Project. The Proponent would have to implement any recommendations from the review; and

- a comprehensive complaints handling and response system.

Conclusion

The Department and OEH are satisfied that with the implementation of the above recommendations, the predicted odour impacts of the Project would be acceptable. The recommended conditions will ensure that the proposal is operated in accordance with best management practice and requires that the Proponent demonstrate satisfactory performance prior to the construction of subsequent stages. There would also be ongoing monitoring and auditing. The OEH has agreed with the Department's assessment and recommendations.

6.2 Other issues

Table 6: *Summary of Other Issues*

Issue	Assessment	Recommendation
Noise	• The site currently operates under a licence (EPL 2992) which sets operational noise limits. The OEH requires compliance with current EPL conditions; • The noise impact assessment included a series of management and mitigation measures to minimise construction noise; • With the implementation of these measures it was found that the Project would comply with applicable construction criteria; • The Department has recommended construction noise criteria as well as a condition requiring the Proponent to prepare a Construction Noise and Vibration Management Plan including a noise monitoring protocol that would be used to demonstrate compliance with the recommended criteria; • The noise impact assessment included a series of management and mitigation measures to minimise operational noise, including the construction of a noise wall adjacent to the southern side of Stage 1 bale storage shed; • The Project would comply with the project specific noise goals at nearest residential locations. Operational noise would continue to be regulated through the EPL for the site. • Predicted road traffic associated with the Project would not increase road traffic noise by more than 2dB; • Conditions have been recommended requiring the Proponent to prepare and implement a Noise Management Plan, in consultation with the OEH and for approval by the Department. The Plan would include a noise monitoring protocol for evaluating compliance with the noise assessment criteria; and • The Department is satisfied that these measures would ensure that the Project has minimal noise impacts.	Recommended conditions require the Proponent to: • prepare and implement a Construction Noise and Vibration Management Plan; • construct the 7m high noise wall adjacent to the southern side of Stage 1 bale storage shed during Stage 1; • Prepare and implement an Operational Noise Management Plan; and • comply with site specific noise limits and hours of operation.
Flooding	• The Project site is within the South Creek flood plain; • Current operations are raised above the flood level; • Elf Farm Supplies propose to fill 1.6ha of the Project footprint area to 16m AHD.and • Filling would not increase flood levels at adjacent properties.	No conditions are recommended
Water Management	• The Substrate Plant site is located adjacent to South Creek. • The Project would not increase peak post-development flows from pre-development levels. • The proposed treatment train would achieve the pollutant load reduction targets in DECCW's draft policy *Managing Urban Stormwater: Environmental Targets (2007);* with the exception of suspended solids and gross pollutants. These exceedances have been addressed through a condition requiring the Proponent to provide a 50m riparian buffer to South Creek (see below); • The Proponent proposes a range of mitigation measures such as augmenting the site's existing on site detention, the establishment of a reed bed adjacent to the outlet pipe and establishment of a bio retention basin; • Notwithstanding, the Department has recommended a	Recommended conditions require the Proponent to prepare and implement an Operational Water Management Plan.

Issue	Assessment	Recommendation
	condition requiring the Proponent to prepare and implement, in consultation with NOW and the OEH, an Operational Water Management Plan, to the satisfaction of the Director-General; and • The Department is satisfied that the proposed and recommended management measures would reduce water impacts from the Project to acceptable levels.	
Riparian corridor	• No vegetation removal is required for the Mulgrave expansion, however an amount of vegetation (not quantified and including EEC) at Londonderry would be removed as part of the Project; • The NOW recommended that the Proponent establish a 50 metre riparian corridor on the project site adjacent to South Creek, the Proponent has argued against this as the land is used for grazing; • The revegetation of riparian land adjacent to South Creek would serve to enhance the offset strategy for the removal of EEC at the Londonderry site as well as mitigate the potential impacts from an increase in suspended solids and gross pollutants; • The Department also considers that the project provides an opportunity for local environment improvement, as the protection or restoration of riparian zones is widely viewed as a major step towards improving waterway health; • The Department, however, considers that a fenced, 35 metre wide riparian corridor on the project site would be adequate (rather than 50m). This provides a compromise between the NOW's recommendation and is consistent with current research from Victoria (source: *Minimum width requirements for riparian zones to protect flowing waters and to conserve biodiversity: a review and recommendations*, Monash University April 2010); and • The department, therefore, has recommended a condition of approval that requires the Proponent to establish a fenced 35 m riparian zone on the project site.	Recommended conditions require the Proponent to: establish a fenced, 35 metre wide riparian corridor along the length of South Creek, in consultation with the Hawkesbury-Nepean Catchment Management Authority and to the satisfaction of the Director-General, prior to the commencement of operations.
Greenhouse Gas	• The Project would increase the facilities' greenhouse gas emissions by 1,125 t CO2-e per year; • At full production emissions generated from the site would equate to .001% of NSW's 2008 greenhouse gas emissions which is considered negligible; and • Recommended management measures will help minimise greenhouse gas emissions.	Recommended conditions require the Proponent to: • prepare and implement a Greenhouse Gas Management Plan for operations; and • implement all reasonable and feasible measures to minimise energy use on site and greenhouse gas emissions.
Traffic	• At full production the facility would generate an additional 50 truck movements and 8 small vehicle movements per day. • This equates to an additional 9 vehicle movements per hour during the Project's peak hours; • The facility would have negligible impact on the level of service of Hawkesbury Valley Way or Mulgrave Road; and • Existing access arrangements are sufficient to support the additional traffic generated by the facilities' upgrade.	No conditions are recommended
Visual	• Some minor visual impacts may occur from the additional bioscrubber and buildings, however, the new buildings would be commensurate to the existing facility and as such there would be minimal change to visual impacts of the facility on the surrounding residences; and • Proposed management measures, including landscaping, would help minimise visual impacts from the Project.	Recommended conditions require the Proponent to undertake landscaping prior to operation of Stage 1.

7. RECOMMENDED CONDITIONS

The Department has prepared recommended conditions of approval for the Project (see Appendix E). These conditions are required to:

- prevent, minimise, and/or offset adverse impacts of the Project;
- set standards and performance measures for acceptable environmental performance;
- ensure regular monitoring and reporting; and
- provide for the ongoing environmental management of the Project.

The Department has provided the draft conditions of approval for the Project to relevant government authorities for comment including Councils and has incorporated these comments into the conditions of approval where appropriate.

The Proponent has reviewed and accepts the recommended conditions.

8. CONCLUSION

The Department has assessed the merits of the Project having regard to the objects of the EP&A Act and the principles of ecologically sustainable development. This assessment has concluded that with the implementation of the recommended conditions of approval, the impacts of the Project can be mitigated and/or managed to ensure an acceptable level of environmental performance.

The Department acknowledges the concerns raised by Hawkesbury City Council and members of the public, particularly in relation to odour. The Department, in consultation with the OEH, has assessed this issue in detail and considers that potential odour impacts can be satisfactorily managed through the measures proposed.

The Department has recommended the Proponent demonstrate an appropriate level of performance at key stages during the development of the substrate plant. This requirement, plus other measures including regular auditing and the need to implement a stringent odour monitoring program and odour management plan would also ensure that odour impacts from the development are managed to acceptable levels.

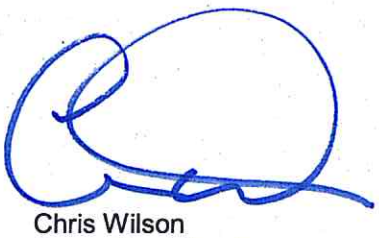
Finally, the proposal offers significant economic and social benefits to the Western Sydney region, as it would attract up to $40million worth of capital investment and would employ 100 workers during construction and 43 additional staff during full operation.

Consequently, the Department believes that the Project is in the public interest, and should be approved subject to conditions.

9. RECOMMENDATION

It is RECOMMENDED that the Acting Deputy Director-General:

- consider the findings and recommendations of this report;
- approve the Concept Plan, under section 75O(1) of the *Environmental Planning and Assessment Act 1979*; and
- approve the Project application, subject to conditions, under section 75J of the *Environmental Planning and Assessment Act 1979*;
- sign the attached Instruments of Approval (see Appendix E).



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Chris Wilson
Executive Director
Major Projects Assessment

APPENDIX A ENVIRONMENTAL ASSESSMENT

See the Department's website at http://majorprojects.planning.nsw.gov.au/page/project-sectors/agriculture--timber--food/agricultural-produce--food---beverage/?action=view_job&job_id=3999

APPENDIX B SUBMISSIONS

See the Department's website at http://majorprojects.planning.nsw.gov.au/page/project-sectors/agriculture--timber--food/agricultural-produce--food---beverage/?action=view_job&job_id=3999

APPENDIX C PROPONENT'S RESPONSE TO SUBMISSIONS

See the Department's website at http://majorprojects.planning.nsw.gov.au/page/project-sectors/agriculture--timber--food/agricultural-produce--food---beverage/?action=view_job&job_id=3999

APPENDIX D CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENTS

Section 75I(2) of the *Environmental Planning and Assessment Act 1979* requires that reference be made to the provisions of any environmental planning instrument that would (but for Part 3A of the Act) substantially govern the carrying out of the project.

- *State Environmental Planning Policy (Infrastructure) 2007;*
- *State Environmental Planning Policy No. 30- Intensive Agriculture;*
- *State Environmental Planning Policy No. 55 - Remediation of Land;*
- *Sydney Regional Environmental Plan No 20- Hawkesbury – Nepean River (No 2- 1997)*
- *Penrith Local Environmental Plan, 2010;*
- *Hawkesbury Local Environmental Plan, 1989*

State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP)

The Infrastructure SEPP commenced in January 2008, consolidating and updating a number of State planning instruments. The aim of this SEPP is to facilitate the effective delivery of infrastructure across the State.

Schedule 3 of the SEPP provides the RTA with the opportunity to provide feedback on certain traffic-generating developments, including sites with parking for 50 or more vehicles and access to classified road, before a consent authority makes a determination about a development application. The Proponent consulted the RTA during preparation of the assessment; in addition, the EA was referred to the RTA during exhibition of the Project.

The Department has considered the Infrastructure SEPP in its assessment of the project and concluded that the project is consistent with the relevant objectives of the SEPP.

State Environmental Planning Policy No. 30- Intensive Agriculture

State Environmental Planning Policy No. 30- Intensive Agriculture applies to the Substrate Plant as it classifies for mushroom composting facilities as rural industries

State Environmental Planning Policy No. 55 – Remediation of Land

Clause 7 of the *State Environmental Planning Policy No.55 – Remediation of Land* (SEPP 55) states that a consent authority must not consent to the carrying out of any development on land unless:

(a) it has considered whether the land is contaminated, and

(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and

(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose

SEPP 55 aims to ensure that potential contamination issues are considered in the determination of a development application As the Mushroom Farm site has been used as a piggery, the Proponent's EA included an assessment undertaken in accordance with SEPP 55. Contaminants levels were found to be below the Health Based Investigation Level for Standard Residential Development and as such, would pose no risk to human health or the surrounding environment. The Substrate Plant site would be filled to 16m AHD with clean fill.

The Department is satisfied with the consideration of SEPP 55 in the EA.

Sydney Regional Environmental Plan No 20 – Hawkesbury-Nepean River

The aim of SREP 20 is to ensure is to protect the environment of the Hawkesbury-Nepean River system by ensuring that the impacts of future land uses are considered in a regional context. In this regard, SREP 20 identifies general planning considerations, specific planning policies and recommended strategies for various components of the environment (e.g., environmental sensitive

areas, wetlands, water quality and quantity, cultural heritage and riverina scenic quality). In addition, development controls for specific types of development are detailed.

The Project, located in the South Creek catchment, includes water management measures that will ensure minimal impact on the catchment. Notwithstanding, the Department has recommended that the Proponent plant a 35m wide riparian corridor adjacent to South Creek at the Substrate Plant site, the riparian corridor would ensure the Project is consistent with the consistent with the relevant provisions of SREP 20.

SEPP No.33 – Hazardous and Offensive Development

The Department is satisfied that the project does not represent a 'potentially offensive industry' or a potentially hazardous industry' as defined under clause 3 of SEPP 33. The proposed facilities are not expected to involve the storage, distribution or use of significant quantities of dangerous goods or hazardous substances.

Penrith Local Environmental Plan

Penrith Local Environmental Plan 2010 provides development controls for development in the Penrith LGA. The proposed Mushroom Farm site is located on land zoned partly RU4 – Primary Production Small Lots and partly on SP2 (Infrastructure).

The objectives of the RU4 zone are to

- To enable sustainable primary industry and other compatible land uses.
- To encourage and promote diversity and employment opportunities in relation to primary industry enterprises, particularly those that require smaller lots or that are more intensive in nature.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To ensure land uses are of a scale and nature that is compatible with the environmental capabilities of the land.
- To preserve and improve natural resources through appropriate land management practices.

The Mushroom Farm would enable the continued use of agricultural land for agricultural pursuits, it has been designed with consideration of the environmental constraints of the site by avoiding the more heavily vegetated parts of the site and ensuring water is treated to meet the pollution targets in DECCW's *Draft 2007 Managing Urban Stormwater: environmental targets*, and it will provide employment opportunities in relation to primary industry enterprises.

The project would not be located on the land zoned SP2

The Department therefore considers that the proposal is consistent with the objectives and zoning requirements of this LEP.

Hawkesbury Local Environmental Plan 1989

The Substrate Plant site is located on land zoned Rural Living under the *Hawkesbury Local Environmental Plan 1989*. Mushroom substrate production is defined as a rural industry, rural industries are a prohibited land use within the Rural Living Zone.

Notwithstanding, the land is zoned partially IN2 and part RU4, in the Hawkesbury draft LEP 2011 The substrate plant would be located on the portion of the land zoned IN2 only.

The Substrate Plant is permitted with consent in the IN2 zone. Objectives of the IN2 zone are to encourage employment opportunities and to ensure that industrial development creates areas which are pleasant to work in and safe and efficient in terms of transportation, land utilisation and services distribution. The Department is satisfied that the proposed facility is consistent with the objectives of the IN2 zone.

The key objective for the RU4 zone is to ensure that development occurs in a manner that does not have a significant adverse effect on water catchments, including surface and groundwater quality and flows; land surface conditions and important ecosystems such as waterways. The Department recommended condition requiring the Proponent to plant a riparian corridor adjacent to South Creek, will ensure that the Project in consistent with the objectives of the RU4 zone

APPENDIX E RECOMMENDED CONDITIONS OF APPROVAL