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**Statement of Expert Evidence**

**1662-1710 BELLARINE HIGHWAY MARCUS HILL**

**Residential Impacts on Agriculture**

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

**April 2016**

## **1. Introduction**

My company, Phillips Agribusiness was commissioned by Schutz Consulting to provide a residential impact assessment on the farming operations of Glasshouse Farms, Marcus Hill.

The scope of the report included:

- Describe current horticultural development of Glasshouse Farms and the activities critical to its effective operation;
- Project future rural development intentions and whether any technical, environmental or planning constraints are likely to arise;
- Identify what impacts neighbouring residential development is likely to have on intensive farming activity;
- Discuss the options for future development and identify a preferred future course of action.

A Technical Report addressing the agricultural issues is attached as **Appendix A**.

I formally adopt the information, analysis and conclusions contained in the Technical Report and this statement as my Expert Witness Statement for the purposes of the Panel Hearing which has been convened to consider such issues.

## **2. Qualifications and Experience**

### **Name and address**

Raymond Neil Phillips, 66 Linacre Road, Hampton, Victoria 3188

### **Qualifications**

Bachelor of Agricultural Science, Massey University of Manawatu, New Zealand;  
Master of Business Administration, Melbourne University.

### **Experience**

My specialist skills are in farm and business management, environmental and land use surveys, water recycling and irrigation developments, industry studies and strategic planning. My experience is in agriculture under temperate climatic conditions, usually in the livestock, cropping and intensive agricultural industries.

I have been engaged in numerous studies which consider the impact that development has on farming practice and its sustainability. My experience has been at a State, regional and local level.

A copy of my curriculum vitae is provided as **Attachment 1**.

### **3. Facts, matters and assumptions**

The property was inspected with the owners to determine the current operation, discuss the proposed development plan and consider its viability as a rural operation. An inspection was conducted on the residential development occurring on the property's boundaries. The remainder of the Farming Zone was also inspected.

Research was conducted on the type of impacts encountered at the interface of rural and residential development. These were considered as to their possible local effect.

Consideration was given to the Ocean Grove Structure Plan and Amendment C346.

### **4. Summary of opinion**

Glasshouse Farms Pty Ltd conduct an intensive agriculture farming operation on a 32ha property located south of the Bellarine Highway, Marcus Hill. The product output is to grow decorative lettuce using hydroponic technology. Approximately 1.5ha of the site is under glass or shade cloth. Current investment in infrastructure and glasshouse technology is \$4.5m.

The development intention is to expand glasshouse production to 10ha, establish a seedling nursery and 7.5ha of market gardening. This would increase the capital investment to over \$20m.

A major concern to the development program is the potential threat that residential development is likely to have on the viability of the business. These threats include an increase in pest and disease populations, an unsympathetic view by urban residents to some agricultural practises and a perceived loss in amenity value.

The Farming Zone which acts as a buffer for the North East Growth Area extends from Banks Road to Grubb Road. The land holdings contained within the zone are small, diverse in their land use with no commercial core. Most are rural living holdings, some with a tourist or conservation orientation. The only professional intensive agricultural operation is Glasshouse Farms.

The Farming Zone's effectiveness as a residential buffer is questionable. The pressure of residential development on its boundaries is likely to motivate landholder relocation or seek rezoning to residential. Change is already occurring with developers actively acquiring land holdings.

The commercial intention of Glasshouse Farms has been to continue expansion of the hydroponic enterprise to meet increasing local and export demand. However, committing to capital expansion requires the resolution of urban interface concerns and being confident in operating the facility over a sufficiently long period to amortise plant and infrastructure capital and build intrinsic value to the business.

In the current planning environment this surety appears unlikely to be met. A more acceptable outcome would be to extend the North East Growth Area to incorporate a large part of the

Farming Zone and reduce the buffer zone to a level that provides an effective interface to the Bellarine Highway. In this way Glasshouse Farms could confidently invest knowing their capital was secure and operations could be transferred to a lower cost area should conditions require it.

**Expert's declaration**

I have made all inquiries that I believe are desirable and appropriate and that no matters of significance which I regard as relevant have to my knowledge been withheld from the Panel.

A handwritten signature in black ink that reads "R N Phillips". The signature is written in a cursive style with a large, prominent initial "R".

**R N Phillips**  
**Phillips Agribusiness**  
**22 April 2016**

## ATTACHMENT 1

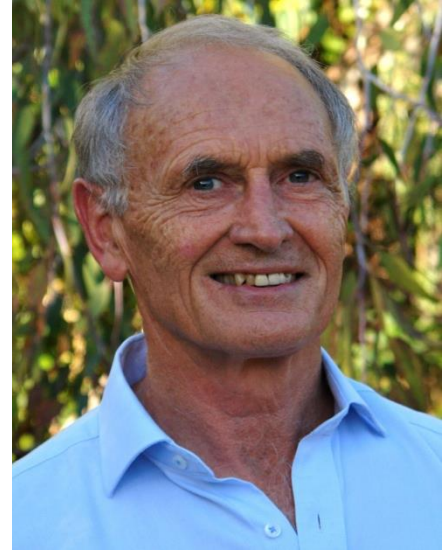
### CONSULTANT PROFILE

**FULL NAME** Raymond Neil PHILLIPS

**ADDRESS** 66 Linacre Road, Hampton,  
Victoria 3188

**TELEPHONE** Work: 03 9598 4018  
Mobile: 0419 161 041  
ray@phillipsagribusiness.com.au

**QUALIFICATIONS** Bachelor of Agricultural Science,  
Massey University of Manawatu;  
Master of Business  
Administration, Melbourne  
University.



### SPECIAL FIELDS OF COMPETENCE

Specialist skills are in farm and business management, environmental and land use surveys, water recycling and irrigation developments, industry studies and strategic planning. Experience is under temperate climatic conditions, usually in the livestock, cropping and intensive agricultural industries. Activities include whole farm planning, farming system analysis, irrigation investigations, economic analysis and market research. Clients include Government, industry and private sector individuals and companies.

### RELEVANT PROFESSIONAL EXPERIENCE

#### **Farm Management Consulting**

Provide farm management advice to farmers throughout Australia. Clients embrace a wide range of enterprises including dairying, beef, sheep, broadacre and intensive cropping. The services provided include farm management advice, rural property investment, loss assessment, technical services and expert representation in legal matters.

#### **Agricultural Management Studies**

The following project list indicates the nature of domestic studies undertaken over the last 20 years. In many cases I was principal consultant or project leader. In multi-disciplined projects I also act as a specialist sub consultant to larger consulting organisations.

1998-2016 Melbourne Airport Land Management Program: Melbourne Airport;

2015-2016 Agricultural Impacts, Geelong-Colac Road Widening: VicRoads

2015 Panel Hearing, Horsham Bypass Study: VicRoads

2014 Agricultural Land Use Options: Melbourne Treatment Plant, Melbourne Water

2014 Input into Cost Benefit Analysis of the Bunyip Irrigated Agriculture Development Project, DEPI

2013 Market Garden Industry Trends, Werribee South Irrigation District, Lyons Capital;

2013 Loddon-Mallee Strategic Rural Land Use study, Regional Development Victoria;

2011-12 Western Highway Duplication: Ballarat to Stawell, Vic Roads via GHD;

2012-13 Airport Link to OMR/Bulla Bypass: Vic Roads via GHD;

2010-13 Victorian Desalination Project: Land Rehabilitation via Ecology Australia;

2012 Agricultural Impacts: Thompson Road Duplication, VicRoads;

2011 Land Capability Assessments, Glenrowan & Tungamah Sites, N E Water via Beca Pty Ltd;

2011 Agricultural Assessment, Point Cook South Logical Inclusions Area, via Tract Consulting;

2011 Position Paper, Bunyup Food Belt, GHD;

2010-11 Bandicoot Protection Project Kooweerup-Bayles Area, Dept. Sustainability & Environment;

2009-11 Agricultural report, Eastern Golf Club Relocation, via Robert Luxmoore Project Management;

2009 Agricultural Capability, Brompton Lodge, Cranbourne West: Watsons Pty Ltd;

2008 Agricultural input into Desalination Project EES, Department Sustainability & Environment via GHD/Maunsell Australia;

2008 Black Rock Salinity Reduction Project: Soil and Water Thresholds for Agriculture, Barwon Water via KBR;

2008 Werribee Irrigation Futures: Werribee and Bacchus Marsh Irrigation Districts, Southern Rural Water;

2008 Macedon Ranges Shire Rural Living Strategy; Macedon Ranges Shire;

2008 Ballarat Goldfields Pipeline: Rural Loss Assessment for rural landowners;

2008 Water Demand for Recreational Reserves in the Mornington Peninsula, SE Water via Beca Australia;

- 2008 Agricultural input into Frankston Bypass EES, SEITA via Maunsell Australia;
- 2007-09 Allocation of Emergency Irrigation Supplies to the Bacchus Marsh Irrigation District: Southern Rural Water;
- 2007 The development of a Water Quality Policy within the Shire of Macedon: Western Water and other water authorities;
- 2007 Trenching Method and Rehabilitation Procedures: Bacchus Marsh Sewer, Western Water;
- 2006-07 The development of a Water Quality Policy within the six catchments servicing the Barwon Water Region: Barwon Water;
- 2006 Surf Coast Shire Intensive Horticulture Recycled Water Project: Avia Tomatoes and other landholders;
- 2006 Soil Salinity and Irrigation Practice, Barwon Water Demonstration Farm, Black Rock, Barwon Water;
- 2006 Future Treatment and Reuse Options for Bannockburn and Winchelsea Water Reclamation Plants, Barwon Water via KBR;
- 2006 Agricultural Impacts of Proposed Ballarat Livestock Selling Centre: Ballarat Council.
- 2005 Investigation of alternative sites for irrigation with recycled water, Bacchus Marsh district; Dept of Sustainability & Environment via URS.
- 2005 Agricultural Assessment: Readymix Mt Shamrock Quarry Proposed Extension: Readymix Holdings Pty Ltd.
- 2005 Irrigation management report for the Bacchus Marsh Wastewater Treatment Plant, Parwon South: Western Water via Beca Australia.
- 2005 Irrigation Feasibility of different sites, Brimbank Recycled Water Project: City of Brimbank via Parsons Brinckerhoff.
- 2005 Horticultural characteristics of the Keilor Irrigation District: City of Brimbank via Parsons Brinckerhoff
- 2005 Farm Management Analysis, VCAH Dookie Estate, Melbourne University;
- 2004-05 Geelong Bypass Study: Assessment of agricultural land and anticipated Bypass impacts: VicRoads.

## **PROFESSIONAL ASSOCIATIONS**

- Member, Australian Institute of Agricultural Science and Technology
- Member, Melbourne Business School Alumni

**APPENDIX A**

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***PHILLIPS  
AGRIBUSINESS***

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**1662-1710 BELLARINE HIGHWAY**

**Marcus Hill**

**Residential Impacts on Agriculture**

**Phillips Agribusiness  
66 Linacre Road  
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April 2016**

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## **1.0 INTRODUCTION**

Glasshouse Farms Pty Ltd conduct an intensive agriculture farming operation at 1662-1710 Bellarine Highway, Marcus Hill. Their product output is to grow decorative lettuce using hydroponic technology.

The property is 32ha in size and located south of the Bellarine Highway. It lies within the Farming Zone with its southern boundary the North East Growth Area zoned General Residential. The owners of Glasshouse Farms are concerned that the interface issues created between residential development and intensive agricultural activity will significantly compromise the future development potential of their enterprise.

This report considers the organisation, current development and future growth intentions of Glasshouse Farms. A number of interface issues between residential development and intensive agriculture are identified and discussed as to their impact on rural enterprise performance. Some consideration is given to current planning conditions and their impact on future investment decisions.

## **2.0 PROPERTY DESCRIPTION**

### **2.1 Overview**

The property was purchased in 2007 by the Mifsud family for the express intention of developing a large, hydroponically based vegetable growing enterprise. The site was selected on the Bellarine Peninsula because its location provided a high degree of isolation from other vegetable producers and any associated disease risk. In 2010 a joint venture<sup>1</sup> was formed between the Mifsud family and Fresh Select, a Werribee South based growing and marketing company to develop the horticultural enterprise. Fresh Select has extensive market outlets through supermarket contracts, interstate supply and export.

At the time of purchase the City of Greater Geelong planning department was consulted to ensure that Ocean Grove's urban growth area would not create any interface issues with the proposed development. A planning application was made for the first stage of glasshouse development. The conditions that had to be met included plantations along all boundaries and no introduction of produce from outside sources for processing and resale.

The initial development was for a 6300m<sup>2</sup> facility comprising growing, processing and plant servicing areas. The setback from the Bellarine Highway is approximately 120m to maintain a suitable environmental and landscape break. A second stage of 8500m<sup>2</sup> is currently being constructed to the immediate south of the existing building.

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<sup>1</sup> Glasshouse Farms Pty Ltd

## 2.2 Growing characteristics

Glasshouse construction commenced in 2008 and was completed in 2011. It is of Dutch design<sup>2</sup> with its main features being:

- Approximately 70m x 90m (6300m<sup>2</sup>) in size and comprises a moving multiple batch single level controlled environment production system;
- Closed system nutrient film technology incorporating sanitation, nutrient mixing, environmental and nutrient control monitoring and batch timing control;
- Centralised processing for planting out (seedlings), harvesting, packing, cooling and transport.

The current production system is based on producing four varieties of decorative lettuce, Green Oak, Green Cole, Red Oak and Symphony. The annual output is 1 million heads per annum with a production cycle, depending on season between 3.5-4.5 weeks. Lettuce heads at harvest are wrapped in plastic, (retaining root systems) and packed at 8 per carton. They are subject to cooling and shipped out the same day to market outlets. The retail price per carton is approximately \$18 and delivered under contract to Coles (85%) and also the Wholesale Market (15%).

Photo 1 shows the growing lettuce in their batch trays while Photo 2 is the processing stage where harvested letter is being wrapped and boxed.



**Photo 1: Growing crop**

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<sup>2</sup> Technokas



**Photo 2: Wrapping & packaging**

This hydroponic production system offers a number of advantages over outdoor, soil based growing systems:

- The ability to produce a regular supply of high quality product throughout the year;
- Lower labour input through mechanisation;
- Lower water consumption.

These advantages need to be weighed up against a higher capital cost, (up to \$500/m<sup>2</sup>), higher energy costs and a greater level of technical skill in managing the production process. Hydroponic lettuce production has similar costs of production to soil based systems but is better able to supply a consistent volume of high quality product over all seasons. It is a method which is adaptive to meet boutique demand through batch planting or diversify into other product types such as herbs, capsicum, cucumber, egg-plant etc.

The farm is currently being expanded by a further 8500m<sup>2</sup>. However, the structure used is a low technology one which has a substantially lower capital cost (\$60/m<sup>2</sup>). Although the batch processing method is the same, there is no controlled environment other than using a shade cloth to guard against the extremes of weather. The nutrient film technology and processing facilities are to be shared with the glasshouse facility to keep capital costs down.

However, production efficiency is less due to the longer plant growing period and more difficult disease management through the lack of environmental control.

The reason for adopting low input technology is a function of capital risk management. Full glasshouse technology is capital intensive which can only be recovered through superior production performance over a time period of at least 10-15 years. In an economic environment

which is determined by residential development, no value is placed on glasshouse infrastructure. If the enterprise is to cease for whatever reason, residual capital is lost.

### 2.3 Future development

Figure 1 is a Concept Development Plan for Glasshouse Farms over the next 5 years. It has a number of elements:

- The expansion of protected cropping from current levels of 1.5ha to 4ha. The expansion would effectively be a module of the existing system, duplicating current technology including processing facilities;
- Allowance for further expansion in the west of the site where a potential area of between 4-6.5ha is available;
- Installing a seedling nursery in the south-west of the site. Current seedling supply is from NSW and Werribee South but volume requirements justify an onsite nursery;
- The south-east area is to be developed as a specialised market garden for in-soil growing of crops such as Asian vegetables, zucchini and baby broccoli. An area of 7.5ha is potentially available. The soil is suited to market gardening and irrigation can be available through runoff collection from the glasshouse development. The capital development cost involving soil preparation, levelling, drainage and irrigation installation might be \$35,000-\$40,000/ha with expected crop gross margins<sup>3</sup> of between \$7500-\$10,000/ha.

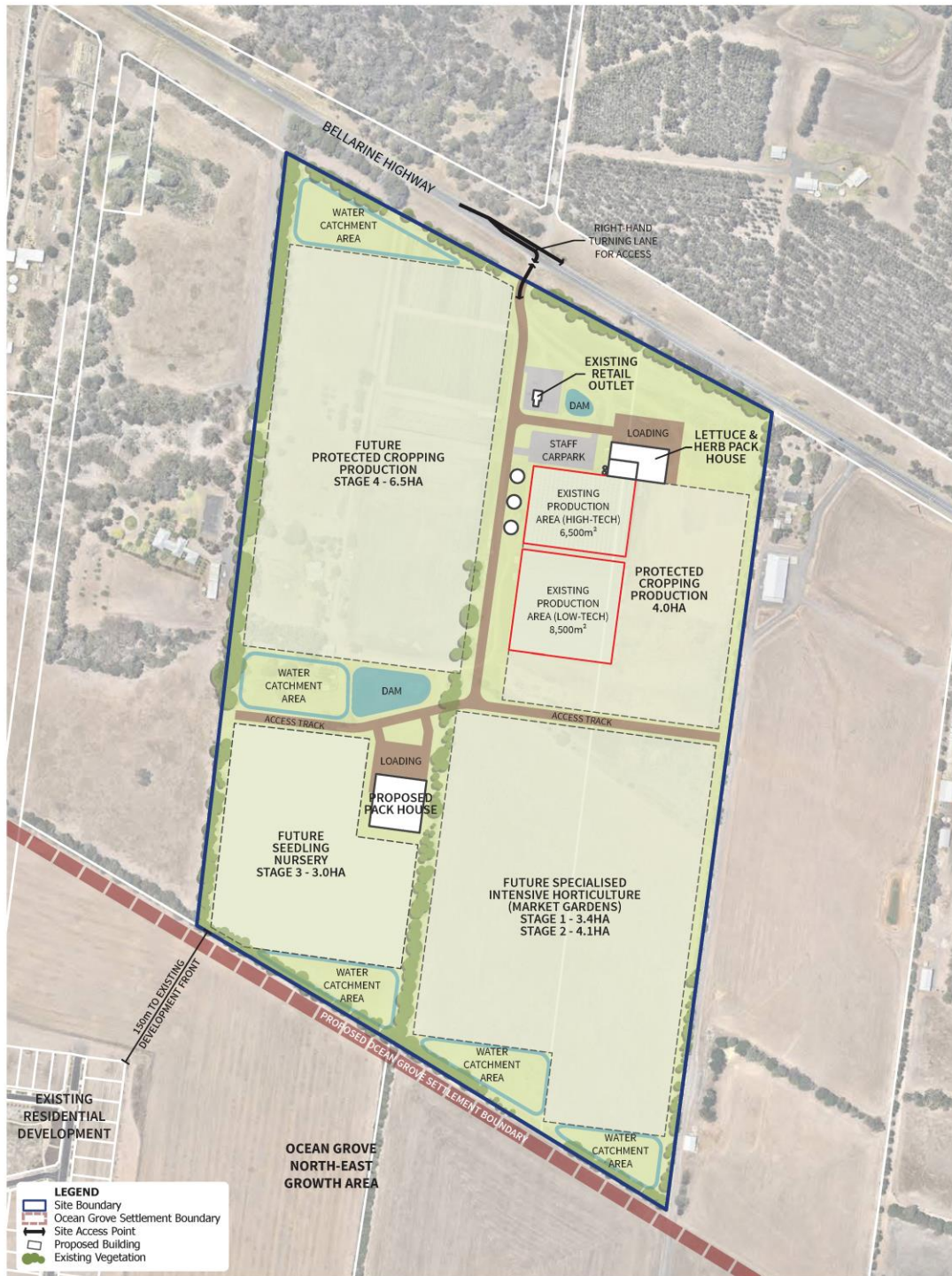
However, the capital cost of implementing the above program is high. The investment to date of infrastructure and glasshouse technology is \$4.5m. Expanding the development to 4ha would increase this to \$10m. Further glasshouse expansion to 8ha, introduction of a nursery and development of a specialist market garden would double the capital investment to \$20m.

The decision to proceed is not simply a business case to support the growth and profitability of hydroponically grown horticultural produce. Confidence is required in the longevity of the investment to ensure that plant and infrastructure capital is amortised and intrinsic value built into the business. A further significant concern is the potential threat that residential development might have on pest and disease control and the level of complaints from urban residents that might arise regarding normal farm practice.

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<sup>3</sup> Gross margin is gross income less direct costs such as soil preparation, seed, fertiliser, chemicals, harvest, transport & marketing expressed on a per ha basis

**Figure 1: Concept Development Plan**



**PATCH.**  
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PROJECT: 016\_005  
DATE: 12/04/16  
VERSION: 02  
CHECKED: AB

PLEASE NOTE: THIS IS PLANS CONCEPTUAL  
ONLY & SHOULD NOT BE USED AS A TECHNICAL  
DRAWING OR FOR CONSTRUCTION PURPOSES.

**CONCEPT DEVELOPMENT PLAN**  
FRESH SELECT - GLASSHOUSE FARMS SITE  
BELLARINE HIGHWAY, MARCUS HILL

### **3.0 RURAL-URBAN INTERFACE**

#### **3.1 Rural-urban conflicts**

There are numerous farm practises considered essential to intensive agriculture which are threatened by residential development. Some farm practices may cause aggravation to residential neighbours who have little knowledge or tolerance of such activities. Alternatively, the residential environment can prove to be a potential pest or disease source to horticultural activity.

The following is a list of potential rural-urban conflicts which have been identified as having a close association with urban development. They include:

- Disruptions to Area Freedom;
- The loss of visual amenity through the construction of specialised farm buildings;
- Noise associated with transport, machinery movement or irrigation activity;
- Spray drift when treating horticultural crops;
- Water drift from spray irrigation;
- Irrigation and drainage water runoff contributing to nutrient and chemical loadings;
- Odour associated with spreading organic manures such as poultry litter;
- Dust arising from cultivation or through the spreading of some fertilisers;
- Stubble and grass burn-offs.

A brief discussion of each one of these features, and their importance to agricultural impact is as follows:

##### *Disruptions to Area Freedom*

A major reason for the selection of the current site to conduct intensive agriculture was its isolation from other horticultural districts. The management of pests and diseases is through Integrated Pest Management (IPM) which involves key practices directed at hygiene, sanitation, monitoring, record keeping, using less chemicals of low toxicity and introducing beneficial insects. The main pest danger from urban development on the sites boundaries are aphids, thrips and Rutherglen Bugs all of which thrive in a residential environment. Some fungus diseases (downy mildew, powdery mildew) also find ready hosts in the urban garden. Hence the pest and disease risk is likely to rise with urban encroachment as no control mechanisms are in place, nor likely to be.

##### *Loss of amenity*

Large scale glasshouse development is likely to be considered a loss of amenity by urban residents. Building height, extensive use of glass and scale of enterprise may result in complaints that call for lower building densities, height restrictions or the use of more extensive vegetative buffers. Such requirements compromise the technical efficiency of the farming

operation. Extended lighting to promote faster plant growth is another potential irritant to urban amenity.

#### *Noise*

The background noise associated with hydroponic horticulture is from vehicle movement, circulation fans and gas fired heaters. Current levels are low due to the enterprises lack of scale. Noise level will increase when glasshouse expansion takes place. Soil based vegetable growing (market gardening) incurs greater noise levels.

#### *Spray drift*

The Code of Practice for Farm Chemical Spray Application has been developed to provide a standard for the safe and effective application of farm chemicals for farmers. The code is linked to legislative requirements and training courses are provided to practitioners. Spray drift can be controlled to within acceptable limits providing the correct equipment is used, suitable weather conditions are selected and account is taken of appropriate buffer zones. However, urban landholders can have zero tolerance to any spray drift which can make the management of such practices extremely difficult.

#### *Irrigation drift*

Irrigation drift is only likely to occur when spray irrigation systems are used. Good irrigation practise can reduce the risk of any irrigation spray drift reaching local residents through placing emphasis on wind conditions and using the correct equipment. The proposed soil based market garden would use fixed sprinkler irrigation technology which conforms to Best Management Practice. However, there is still potential for irrigation drift when wind conditions change rapidly and despite its low impact, can still result in urban landholder complaint.

#### *Nutrient and chemical runoff*

Farm fertiliser runoff can raise nutrient levels in water ways. The irrigation system for the proposed market garden would incorporate runoff collection for recycling as a means of reducing or eliminating this concern. Chemical runoff is also likely to be low providing application method follows Code of Practice guidelines.

#### *Odour*

Broiler chicken manure at rates of 5-10 tonnes/ha is often used as a source of organic matter for soil conditioning and nutrient supply under intensive farming conditions. Strong odours are created from fresh, uncovered heaps and further odours are created from the spreading process. This practice is currently not used at Glasshouse Farms as it is specific to soil based growing systems. However, it is an accepted agricultural practice in market gardening districts such as Werribee South and expected to be adopted at Glasshouse Farms when the market garden is established. A key feature in managing odour is for the rapid incorporation of manure into the soil within 36 hours of delivery. However, the practice is becoming increasingly difficult to employ near rural living blocks and urban residential developments because of the level of complaint.

### *Dust*

Soil cultivation and bared soil surfaces are the primary sources of dust arising from agricultural activities. The amount is dependent upon weather conditions and can be controlled through the timing of operations and maintaining where possible, a vegetative cover on paddocks. The impact of dust is likely to be minor but can still cause irritation within the residential population. Conversely, dust through vehicle and machinery movement is likely to be a significant irritant to Glasshouse Farms farming operations when residential construction is taking place.

### *Stubble and grass burn-offs*

Abutting agricultural properties next to residential development are entitled to burn-off as part of normal farming practice, usually stubble burning or grass herbage reduction to reduce fire risk. These burn-off activities can result in smoke over the urban areas (subject to wind direction), which subsequently may result in complaints from residents regarding general inconvenience and possible health difficulties.

## **3.2 Summary**

A major concern to Glasshouse Farms through encroaching urban development is the potential increase in pest and disease populations from an undisciplined residential environment, complaints regarding a perceived loss in amenity and concerns regarding some farm practices. Agricultural practises that could impact upon residential use include farm chemical spraying, odour, stubble and grass burn-offs. Spray irrigation, nutrient and chemical runoff, noise, dust and machinery movement are also expected to have some impact.

Farm chemical spraying is subject to a Code of Practice whereby spray drift can be controlled to within acceptable limits providing the correct equipment is used, suitable weather conditions are selected and appropriate buffer zones exist.

Odour arising from the spreading of fertiliser, particularly organic manures has the potential to create disturbance at the residential interface. No Codes of Practice or manure guidelines are in force to cover this activity.

Stubble and grass burn-offs in rural areas are either an established cultural practice or a necessary management activity to reduce fire risk. Under certain wind conditions, smoke may pass through urban areas where residents may complain about its inconvenience and threat to health.

However, despite these attempts at good management practice, there is relative ignorance within the urban population of the necessity of certain agricultural cultural activities. As the urban population grows and their properties continue to surround rural landholders, the ability to farm effectively will be compromised. Complaints against certain farm practices, whether justified or not, will continue to increase and reach a point where rural land holders will cease farming or relocate. It is a common theme which has as its precedent, the inexorable decline in commercial rural activity within the urban fringe. A good example is market gardening in the Heatherton district. It is wedged by urban development and despite numerous studies over the last three decades on retaining horticultural viability the district has continued to fail.

## **4.0 OCEAN GROVE STRUCTURE PLAN**

### **4.1 Overview**

The subject land lies within the Farming Zone while its southern boundary is the North East Growth Area of the Ocean Grove Structure Plan (December 2015) zoned General Residential. The Structure Plan recommends that lower density residential lots should adjoin the northern settlement boundary with an average lot size of 1000m<sup>2</sup> as an appropriate transition between the growth area and the Farming Zone to the Bellarine Highway.

### **4.2 Ocean Grove Structure Plan Amendment C346**

A recent change to the Ocean Grove Structure Plan 2007 is to lower population projection which estimates the town's future population in 2030 at 16105. This contrasts sharply with the 2007 forecasts of 21184 for 2020 and 25000-30000 by 2030. These diminished estimates have resulted in a perceived reduction in land requirement. Growth areas have been revised with most of the population growth to now be accommodated in the North East Growth Area.

### **4.3 Farming Zone**

The Farming Zone affected by the North East Growth Area extends from Banks Road to Grubb Road. It occurs as a strip of land approximately 600m deep and 3000m long accommodating a diverse range of land holdings generally in the 4-30ha size. Most are rural living holdings, some with a tourist or conservation orientation. Any agriculture is conducted at low intensity and mostly focused on livestock production including cattle, sheep, equine and alpacas'. There is a small amount of broadacre cropping. The only professional intensive agricultural operation is Glasshouse Farms.

The Farming Zone's effectiveness as a residential buffer must be questioned. The land holdings contained within the zone are small, diverse in their land use with no commercial core. The pressure of residential development on their southern boundaries is likely to motivate a move to another location or seek rezoning. Change is already occurring with developers actively acquiring land holdings.

Glasshouse Farms form part of this dilemma. Their commercial intention was to continue expansion of the hydroponic enterprise to meet increasing local and export demand. However, the expansion is capital intensive and needs long term security of continuing operation. Unfortunately, this surety cannot be provided with the southern boundary being zoned residential and neighbouring properties being susceptible to a similar rezoning intent. Committing to capital expansion requires addressing urban interface concerns successfully and being able to operate over a sufficiently long period to amortise plant and infrastructure capital.

## 5.0 SUMMARY AND CONCLUSION

Glasshouse Farms Pty Ltd conduct an intensive agriculture farming operation on a 32ha property located south of the Bellarine Highway, Marcus Hill. The product output is to grow decorative lettuce using hydroponic technology. Approximately 1.5ha of the site is under glass or shade cloth.

The development intention is to expand glasshouse production up to 10ha. Associated developments would include a seedling nursery and 7.5ha of soil based market gardening. Current investment in infrastructure and glasshouse technology is \$4.5m. Expanding the development to the above specifications would involve a capital investment of over \$20m.

However, a major concern to the development program is the potential threat that residential development is likely to have on the viability of the business. These threats include an increase in pest and disease populations that emanate from an undisciplined residential environment and agricultural practises that are viewed unsympathetically by urban residents.

The Farming Zone which acts as a buffer for the North East Growth Area extends from Banks Road to Grubb Road. The land holdings contained within the zone are small, diverse in their land use with no commercial core. Most are rural living holdings, some with a tourist or conservation orientation. The only professional intensive agricultural operation is Glasshouse Farms.

The Farming Zone's effectiveness as a residential buffer is questionable. The pressure of residential development on its boundaries is likely to motivate landholder relocation or to seek rezoning to residential. Change is already occurring with developers actively acquiring land holdings.

The commercial intention of Glasshouse Farms has been to continue expansion of the hydroponic enterprise to meet increasing local and export demand. However, committing to capital expansion requires the resolution of urban interface concerns and being confident in operating the facility over a sufficiently long period to amortise plant and infrastructure capital and build intrinsic value to the business.

In the current planning environment this surety appears unlikely to be met. A more acceptable outcome would be to extend the North East Growth Area to incorporate a large part of the Farming Zone and reduce the buffer zone to a technically acceptable level as the interface to the Bellarine Highway. In this way Glasshouse Farms could confidently invest knowing that an exit strategy was available to preserve capital and transfer operations to a lower cost district.



**R N Phillips**  
**Phillips Agribusiness**  
**22 April 2016**