



SUBMISSION IN RESPONSE TO A REVIEW OF RURAL LAND USE IN VICTORIA

This submission written in May 1991 was a response to the Victorian government's Review of Rural Land Use (draft 1991) which was commissioned to primarily address long standing concerns in Victoria about the loss of prime agricultural land to urban and rural residential development.

*This submission and the included substantial extract from a previous submission to the local planning scheme written in October 1989, reflected my involvement in rural land use planning issues at that time. My partner, Su Dennett and I, were active in the local Residents and Ratepayers Ass and the new local planning scheme (the first in our area) was a controversial subject. I recall thinking at the time, that Meldrum Burrows, the Melbourne planning consultants, were having trouble dragging the reluctant and conservative local shire council into the 20th century of segregated land use planning (zoning). My submission was an attempt to lure the consultants into what I believed was the 21st century of integrated land use planning (permaculture). It was doomed to being ignored but in the process I further developed ideas of rural resettlement and cluster (body corporate) development which I had first expressed in print in Prospects for Rural Development published in *The Permaculture Journal* (Issue 18, 1984).*



The Rural Land Use Review submission was also influenced by my experience as an expert witness in a Planning Appeals Tribunal hearing into a large and inappropriate rural residential subdivision being opposed by a local community group.

*The sections on the planning impediments to revegetation and forestry in rural areas reflects my 1987 research work on revegetation and farm forestry later published in 1994 as **Trees On The Treeless Plains: A Revegetation Manual for the Volcanic Landscapes of Central Victoria***

*The ideas expressed here came to fruition nearly ten years later in the **Fryers Forest Eco-village** development [see Article 24 - **Starting Community: Some Early Lessons from Fryers Forest**]. The environmental development code in the **Daylesford Submission** outlines the principles we applied to the planning of **Fryers Forest Community**.*



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This submission addresses the following issues raised in the Victorian government's draft review:

- Data base on rural land use
- Rural residential development
- Hobby farming
- Tree based rural land uses

The government and those who worked on the Review are commended for providing some sorely needed information on rural land use and raising some of the issues which need to be addressed.

Some of the assumptions behind the following submission challenge those which appear to underlie the Review. Within a limited submission it is not possible to fully justify assumptions, assertions and explain recommendations. Background documents have been provided which go some way to achieving this.

DATA BASE ON RURAL LAND USE

The Review makes clear that it is impossible to answer basic questions about critical planning issues such as the loss of prime agricultural land because the base data is lacking. In particular the decision of the Australian Bureau of Statistics to exclude small producers from their statistics is revealed to be a major failure to collect relevant data for planners and decision makers. It would appear from the Review that diversification of agriculture into non-traditional enterprises also goes unrecorded.

The effects of these failures are insidious in that they allow decisions to be made on the basis that fewer larger enterprises represent trends in agriculture industry and rural land use. Larger "more efficient" economic units becomes a self fulfilling reality.

Concurrent processes of experimentation, diversification, niche and local marketing, household (non-monetary) revitalisation and economic efficiency through cost reduction rather than output maximisation all become invisible by this ignoring of the small and the "marginal".

It has been argued by some planners and economists that economic revitalisation, especially at times of contraction, arise out of the margins rather the dominant structures and processes of the old economy. I believe agriculture and the rural economy is in the early stages of such a revitalisation as part of the transformation following the end of real economic growth in the early 1970's.

The failure of planners and decision makers to ask the right questions of their statisticians is not confined to agriculture.

Despite the mounting indirect evidence of long term economic contraction, economists continue to rely on indicators which show growth, albeit problematic. This so-called growth

is based largely on economic activity to forestall environmental, social and fiscal debt, paper shuffling and addictive consumerism rather than any sustainable development.

Thus the failure of information systems to answer the issues raised by this Review are part of a much wider and deeper failure by decision makers to grasp the fundamental and unpredictable transformation of the rural economy.

I would now like to address two closely related and powerful processes which are transforming the rural economy and landscape and yet are still not well understood by planners and policy makers, in part due to failure of information systems;

RURAL RESETTLEMENT

We are seeing the third wave of rural resettlement in Australia's history; a process which has been building gradually over 20 years and now affects most rural areas, but especially those within commuting range of urban centres. The resettlement process has predominantly involved urbanites of Australian birth but has been right across the socioeconomic spectrum. It has been unplanned and unpredicted by government. It has been driven primarily by lifestyle considerations and has often been at apparent economic cost to the participants. The economic, social and information impediments to rural resettlement have been substantial. The fact that it has persisted under these conditions indicates we are dealing with a fundamental and powerful process.

Because of the poor information base, inappropriate land tenure patterns and options and contradictory values and desires on the part of the migrants, many negative effects have been noticed.

The Review discusses the effects of rural resettlement as two issues; rural residential development and hobby farming. The division between these is arbitrary because there are many (in fact most in areas of low land cost) rural residential blocks over 2 or 4ha which produce no substantial agricultural produce. On the other hand small scale production of horticultural and other produce (often from rural backyards and small allotments) is rising again after continuous decline since the 1940's. Much of this produce is consumed in producing households, bartered, or sold in ways which escape the agricultural statistics. Hobby farmers are almost all driven by the same sorts of values that drive other ex-urban rural residents. Although substantial agricultural produce from hobby farms does enter the market, land management is in the final analysis driven by residential and lifestyle values not market driven.

In many ways it is more appropriate to see the difference between the two as one of class. The well-to-do buy larger acreages and generally invest their surplus capital in agriculture (and forestry), be it traditional or innovative and experimental. Those of limited means buy smaller allotments and often fail to develop the productive potential of their land because of a lack of time or capital and information.

The Review quite correctly points out many of the positive aspects of hobby farming which usefully counters the prejudice common amongst the agricultural establishment. The Review considers hobby farmers as part of the larger grouping of part time farmers which includes many who once made a living from the land but have responded to severe economic conditions by obtaining outside income.

If the figures quoted from the 1981 survey (Barr and Almond) on proportion of part-time farmers are correct then poor commodity prices must have greatly increased that proportion over the last decade. In my own shire, one which is still considered rural by any standard and with a significant amount of prime agricultural land, there are between 5 and 10 farmers who would not be part time or semi retired living partly from sale of land.

The Review also correctly identifies hobby farmers as aggressive information seekers, and frequently, as innovators in new industries and methods. The role of self directed farm research and innovation is critical in developing new, more appropriate forms of agriculture given the clear evidence that formal research is not capable of responding to all the new factors affecting agriculture. Organic agriculture serves as a dramatic example. Individual organic farmers who have done their own research under highly unfavourable social and economic conditions over decades are providing the technical basis for the current explosion of organic farming while the agricultural establishment is just in the process of an about-face and has begun some work in the face of grass roots demand.

In contrast to the favourable analysis of hobby farming the Review identifies rural residential development as a process taking agricultural land out of production in ways which cannot be reversed and reducing the viability of commercial agriculture on adjacent land through a variety of processes. In addition it suggests (in section 2.3) it is unsustainable on the basis of servicing costs, energy use, loss of agricultural land and land management problems. On face value these points must be accepted as effects of current forms of rural residential development.

I agree that the problems associated with this form of land use are severe but I think the Review fails to acknowledge (mainly due to lack of any appropriate data) the substantial contributions rural resettlement (in all forms) is making to rural and regional economies and the great potential for this process to be the economic engine of revitalisation of rural communities, restoration of land and development of new forms of agricultural intensification which are truly sustainable.

In addition, the comments on social equity (section 2.2) fail to recognise that policies preventing rural resettlement on small allotments represents a severe inequity on class lines. It is ironical that the very people who are willing to accept lower "standards" of physical and other services in return for a greater sense of control over their own environment and a better quality of life would be denied this on the basis that it is cheaper to provide them with the services they do not want in cities.

It has been pointed out in the Review and elsewhere that new rural residents often do demand services and that to avoid adverse environmental and other impacts of the land use, governments must provide services. These effects are symptomatic of either the urban lifestyle that new rural settlers bring with them or the inappropriate physical design and tenure forms of current rural residential development based on either old titles or new “cookie cutter” subdivisions which are offered to them by the market place.

These two issues are at the heart of the problem of rural residential land use. If they could be solved then the bold vision stated above could be realised.

URBAN vs RURAL LIFESTYLE

The first problem is essentially a social one. New settlers bring with them a mixed bag of urban values evolved during the post war golden age of consumerism and affluence. They generally seek a cleaner environment, simpler lifestyle, independence and self reliance. Many, often unconsciously, mistrust the capacity of the “system” to go on providing the jobs and the goods indefinitely. However, they also generally choose land and build houses which more reflect the dreams of affluence, locking them into commuting to work to pay the mortgage. The very process of commuting, while it results in significant capital inflow to the local community, ties people to the urban system they have tried to escape from. The personal and financial costs of commuting are often underestimated. Neglect of property development and management, lack of community involvement and increasing need for services such as mains electricity, sealed roads, convenient town water, child care and other social services plus demand for consumer compensations for the hectic lifestyle can all become dominant. Thus the country is urbanised with all its attendant problems long before the arrival of the suburbs.

On the other hand, many new settlers follow a different path. They often have less capital to start with and buy cheaper land further from centres of employment. They generally become owner builders through necessity or choice, living in partially completed houses for years, commuting part time, taking any local work or living on social welfare. They spend more time in the natural environment and on developing their properties even if with less capital, frequently producing some of their own food and developing small enterprises. They get to know neighbours and develop local networks. In the process they become poor by all the standard measures and there is no doubt about some of the difficulties they face. Some slide into lethargy and lose vision but many of these are people who, if they had stayed in the city, would have been worse off and more of a problem to the rest of society. Some become hard working country people, develop new skills often embodying their ideals of environmentalism and frugality and a few become a new breed of farmers or self employed bootstrap entrepreneurs.

These two portraits show the problems faced by new rural settlers. If people could be assisted by social policies, appropriate information and financing to reduce their demands

on services, become more self reliant and focus their considerable energy on home based employment including appropriate forms of agriculture then rural settlers could lead the way in developing more sustainable ways of living while revitalising their local economies and communities. My assumption is that virtually all current economic and land use processes are unsustainable and it is only through the radical change which individuals and families are capable of will sustainability be achieved. Urbanites, as a group, are less likely and less able to provide a model due to the regulatory and social constraints of urban life while commercial farmers are so critically dependent on global economic forces which are the very source of unsustainability.

LAND TENURE

Most rural resettlement occurs on freehold titles. People often buy as much land as they can afford to maintain control over their living environment or provide a base, real or imagined for an agricultural enterprise or self reliance. Many settlers are aware of appropriate design principles such as those embodied in permaculture and some seek professional advice. However allotments are poorly located or too small to allow any rational planning of appropriate land use, water supply, access, shelter, fire protection, solar access or house siting.

The Review suggests that residential development should be confined to lower quality land to protect prime agricultural land. As pointed out in the attached extract submission to the *Daylesford and Glenlyon Rural Areas Planning Scheme* (October 1989) the prime agricultural land is also best for rural residential development and all the other environmental, servicing and planning problems of subdivision become much worse on lower quality land. While this may be seen as acceptable from the point of view of the agricultural establishment it will be strongly resisted by environmentalists and planners generally. The enclosed presentation to the AAT about the adverse affects of a 75 lot (2ha) subdivision at Riddells Ck graphically illustrates the issues (pages 3&4).

Smaller numbers of new settlers share land in various ways on collective titles for the sake of community or economic necessity. However, the inability to get home loans means development is even more constrained than on private allotments while the absence of good land use planning and other factors leads to neglect of the commons with people focusing their resources on owner built monuments.

New forms of land tenure, such as cluster development have the potential to solve the environmental impact and service provision problems while giving people what they seek. The submission to the *Daylesford and Glenlyon Rural Areas Planning Scheme* describes the benefits of cluster development, the impediments to its spread and proposes an Environmental Development Code as a mechanism for encouraging and regulating cluster subdivision across rural land use zones.

The new subdivision act makes any distinction between conventional and cluster development irrelevant. The key issue is the existence of a body corporate which is accountable to the lot holders and has control over common land and infrastructure. This creation of another tier in local planning control is the key to three critical issues;

- the residents' desire for a secure environment
- the economic provision of physical (and social) services
- the sustainable and productive use of land

Of particular relevance to this Review, the planning scheme submission provides a positive way to address the issue of agricultural productivity showing how it can be maintained and increased through appropriate rural residential developments. I am claiming that the adverse effects of current development on agriculture can be replaced by benefits rather than simply ameliorating those effects or transferring the costs to other sectors including the natural environment. This claim must either be dismissed as absurd or further investigated since its ramifications are so great.

It can be correctly argued that rural residential cluster developments which are already beginning to emerge, are up-market developments where the lifestyle will be distinctly urban and the land use recreational (eg horses) rather than agricultural.

Any innovative developments tend to be up-market but as the process and form becomes well established costs will fall and a wider market will emerge.

Secondly, the fact that no significant agricultural production may occur is not a fundamental criticism, in that unlike conventional subdivision, the bulk of the land can be returned to broad acre uses in the future (by decision of the owners in the body corporate).

Thirdly, the more fundamental problem of unsustainable urban consumer lifestyle in a rural environment must be addressed through the combination of social policies indicated above while the body corporate tenure pattern provides a physical and self regulatory framework which can be used to facilitate the development of local employment, productive land use and community.

Recommendations

Conventional forms of rural subdivision should be severely restricted. Existing subdivisions and old titles will continue to supply market demand for conventional freehold title.

Body corporate type development should be supported by appropriate physical and social infrastructure policies, land use planning controls, subdivision guidelines, community education, and agricultural and silvicultural extension services.
Development of prime agricultural land should be allowed where the capacity for

agricultural use is largely preserved or equivalent productive capacity is developed through diversification and/or intensification.

The second recommendation will be essential to avoid severe inequity. Without any alternative a policy of containment of rural resettlement will lead to social discontent and eventual failure of the policy.

The connection between these issues and the burning issues of urban sprawl and infrastructure costs addressed in the current discussion paper *Urban Options for Victoria* are obvious.

REVEGETATION

For the purpose of this discussion, revegetation is defined as the whole range of tree and woody plant natural regeneration, seeding and planting on rural land whether it be production oriented or not. Thus I am including farm forestry and new tree crop enterprises along with revegetation to stabilise degraded landscapes and local ecologies and improve amenity.

In the same way that rural living and hobby farming are different manifestations of the same underlying social movement, the myriad forms of tree planting are parts of powerful underlying social movement. The current decade long increase in rural revegetation follows a pattern similar to previous waves of tree planting in rural Australia late last century and again in the 1930's when economic recession combined with intense interest and innovation around what today are called environmental issues.

There is no doubt in my mind that trees and tree based land uses are, along with increasing soil organic matter are the real solutions to the critical problems of land degradation, unsustainable rural economies and greenhouse imperatives. However, at present there is a conceptual rift between revegetation for environmental and economic needs. This is artificial and counterproductive. There is a bewildering array of state and federal policies and programs to encourage revegetation. While integrated productive systems like agroforestry are supported by lots of motherhood statements, the net effect of policy and resource planning has been to encourage very limited forms of industrial forestry concentrated in areas close to major processors.

FORESTRY

Because of the experience with industrial forestry, tree growing for timber is being increasingly seen by both traditional farmers and many new rural residents as a noxious and unsustainable industry. Thus while traditional agricultural land use remains largely unregulated, forestry is subject to stricter controls.

We have the absurd situation around Ballarat where intensive chemical farming (potatoes) is allowed on private and public land in water supply catchments with only the most

limited controls while the conifer plantations can better protect soil and water resources and return a greater income from the same land. Data from existing plantations of the Ballarat Water Board clearly show that a perpetual Redwood forestry system (no clear felling) on much of this land could increase returns from timber while even further improving amenity and water values.

Other forms of forestry based on native species also have potential to economically compete with traditional agriculture given the right regulatory and financing framework and market development. Environmental benefits, local employment and economic development opportunities from many of these systems would be far greater than from current industrial forestry.

While the Review acknowledges trees as a valid “agricultural crop” much more will be needed to be done if forestry is to achieve its appropriate place as a rural land use. One of the enduring changes brought about by the last great wave of interest in trees (the 1930's) was the establishment of the softwood industry. I believe the rural and wider community is ready to take up the challenge of appropriate forestry for the next century if government became serious about addressing the financial, information and market impediments to farm forestry.

Recommendation

Planning controls should encourage forestry, not agriculture where it will better protect soil and water resources, generate more local economic development and especially where the species, silvicultural systems and plantation design provides multiple values.

REVEGETATION AND RURAL RESETTLEMENT

New rural settlers and hobby farmers are major participants in revegetation, probably being responsible for more natural regeneration of native vegetation, woodlots, shelterbelts and amenity plantings, timber and tree crop plantations than traditional farmers despite the undeniably substantial activity by traditional farmers in recent years. The simple process of destocking during subdivision and sale of partially treed hill country in central Victoria and other parts of the Murray Darling basin is creating new hardwood (mostly durable species) forest resources in critical ground water recharge areas at a faster rate than all the farmer initiated and government funded revegetation work combined.

Recommendation

That Federal and State governments fund the product and market development research as well as appropriate silvicultural and processing systems to economically manage forests of durable hardwoods being created by natural regeneration as a result

of rural resettlement and more environmentally sensitive attitudes of land holders generally.

In many grazing and more intensively farmed areas, loss of trees has been severe and low cost natural regeneration is not possible (due to severe grass competition) and on prime agricultural land would represent poor use of the land resource. On the other hand it is the lack of well designed shelter which is the greatest impediment to agricultural intensification of Victoria's prime agricultural land through high value horticultural (including tree) crops¹.

In these areas subdivision results in an explosion of tree planting. It can be argued that this process is unplanned and will not generate economic land use. However, it is more appropriate to view much of this activity as a form of chaotic experimentation which, given the abysmal level of appropriate silviculture information in Australia is quite adaptive. As a result of these experiences, the information and skill base is developed and the local genetic resource is expanded with better adapted species, provenances and varieties being recognised. In this way non commercial plantings function as arboretums and trial plots for future tree-based land uses appropriate to a more intensively settled rural landscape.

The problems of pine plantations near rural subdivisions may be seen by some planners as an example of the incompatibility of residential development and primary production. However, from a designers' point of view these problems simply reinforce the need for rational design and control of land to gain the benefits of integrated uses without the conflicts.

The separation of land uses which has dominated planning this century is no longer economically, socially or environmentally appropriate so the design issues involved in integrated land uses must be addressed.

Local government planning schemes are a very blunt instrument for this purpose while body corporate design of rural residential development can and must integrate forestry as well as agriculture with residential development. Without appropriate design, conflicts associated with unplanned natural regeneration and tree planting in rural residential areas will become worse than those experienced in already forested residential areas. The net result is that trees eventually are regarded as a "cost" rather than the highly productive multi-purpose solar energy harvester which they truly are.

Recommendation

That government encourage appropriate forms of residential development on prime agricultural land as a mechanism to fund and facilitate sustainable agricultural intensification of our best farm land.

¹ See Holmgren, D. *Trees On The Treeless Plains: Revegetation Manual For The Volcanic Landscapes of Central Victoria* for detail design information relevant to intensively farmed landscapes.

EXTRACT FROM 1989 SUBMISSION TO DAYLESFORD & GLENLYON RURAL PLANNING SCHEME

CLUSTER SUBDIVISION

The Cluster Titles Act provides the ideal legislative framework for integrated rural land use patterns focused on residential needs. As an alternative to “cookie cutter” traditional subdivision which eliminates rural land uses in favour of a super suburban landscape, cluster subdivision has many advantages.

The recommendations in the consultant’s report to allow subdivision in either a cluster or traditional form are a substantial advance over the past situation where the Shire Council has knocked back a cluster subdivision proposal in Hepburn but then allowed a traditional subdivision plan for the same site. However, it will require more than simply allowing cluster subdivisions if developers are to take up this more complex process let alone use it to the best advantage of the local community.

Cluster subdivisions which retain most of the land in common ownership under the body corporate would make continuation of existing agricultural uses possible. Infrastructure development can provide services at lower total cost to the community and the environment than in conventional subdivision.

AGRICULTURE IN CLUSTER SUBDIVISIONS

Appropriate land use prescriptions for the common land can be incorporated into the development plan of a cluster subdivision which then has the same force of law as a planning scheme. **Within the limitations of land use and environmental prescriptions it is in the interests of the body corporate members to maximise the return from the land by lease to farmers who are in a position make use of it.**

Problems for farmers, such as stray dogs and noxious weeds, usually associated with rural residential development, would be resolved by the combined effects of appropriate internal bylaws (which would apply to all residents), and the economic leverage of anyone negotiating a lease.

Low levels of equity and need for capital to develop and diversify farming are major problems for the agricultural sector of the economy. Cluster subdivision is an alternative to both subdivision and sale of lower productivity sections of a farm, or schemes to involve outside investment.

Agricultural productivity of the deep volcanic soils within the shire are not maximised by the current usage pattern of livestock and broad acre cropping. Intensive development with tree crops and market gardens would provide livelihoods from small acreages of volcanic soil. However the greatest impediment to intensive use of this land

is the absence of appropriate infrastructure development (particularly water supply, shelter, and access). While this infrastructure is normally seen as part of the costs of the enterprise, appropriately designed residential subdivisions can effectively create the ideal environment for these intensive land uses at little extra cost. **Thus appropriate residential development can actually foster more intensive agricultural use of land by providing internal infrastructure at a lower cost than in conventional agricultural development.**

There are many other planning and land use issues such as effluent disposal, fire planning, provision of water supply, power and other services, revegetation and conservation of native vegetation, which can be positively dealt with within the framework of properly designed cluster subdivision.

The cluster titles act provides a flexible land tenure and development framework for integrated land uses. Innovative rural residential developments in other states such as Crystal Waters, north of Brisbane have had to use less suitable legislation but show the potential to resolve land use conflicts and provide people with access to developed rural land at reasonable prices.

IMPEDIMENTS TO CLUSTER DEVELOPMENT

1. It is clear that while developers can make substantial profits without much effort, and while planning schemes provide no incentive to developers, these more sophisticated forms of subdivision are unlikely to eventuate.
2. Cluster developments which incorporate agricultural uses of the common land, especially broad acre cropping and grazing will require large parcels of land around the same size as current economically viable farms. Clearly where the ownership pattern is already fragmented, integrated development is highly unlikely. The most suitable properties (from a planning perspective) are those close to existing services, especially those on the fringe of the townships. Properties with at least some deep volcanic soils for ground water supplies, effluent disposal and intensive agriculture as well as some treed sedimentary country for multipurpose dams, natural regeneration recreation, wildlife and wood supplies would be ideal. **Properties which fulfil these criteria are few in number.**
3. There are very few examples of rural cluster development so that costs and returns to developers are unclear. Because the land development process will generally involve provision of water supply, power, framework tree planting as well as fences and roads, capital requirement will be greater than for conventional subdivisions where lot holders pay for many of these costs following purchase.

However, purchasers of small rural allotments are becoming better informed about the costs of providing electricity, water supply and access on undeveloped land. Therefore it is more likely that they will recognise the value in well designed and developed lots in a rural cluster development.

4. At present, there is only the choice of “serviced” town blocks, undeveloped rural land or owner developed small blocks. My experience in designing infrastructure on rural allotments and hobby farms has convinced me that the costs of integrated infrastructure development are considerably less than individual development and that allotments serviced by integrated developments would be highly sort after.

However, as with any innovative process, investors expect high returns and without a favourable regulatory environment only the most committed developer is likely to provide an example.

ENVIRONMENTAL RESIDENTIAL DEVELOPMENT CODE

A separate set of regulations should apply to cluster subdivisions which meet strict environmental and land use criteria. These regulations should be framed as functional criteria which can be applied to different landscapes and zones. This would result in different solutions in land use allocation, ratio of common to private land, infrastructure systems and actual size of lots. **The incentive to developers would be the ability to increase the number of allotments allowable under the proposed zones.**

A similar set of regulations should apply to multiple occupancy development by registered community settlement co-operatives.

The concept of an environmental living zone has been proposed locally based on innovative examples such as Village Homes in Davis California where urban developments have occurred following similar criteria to those proposed here in a rural context. The real difference is that this proposal uses **tenure system** rather than **zoning** as its primary regulatory mechanism. In this way it would function as a proactive planning mechanism which would stimulate desirable development against a background of zoning control.

The code should involve the following elements [*with specific examples in italics*].

1. A survey of the property recording all the natural characteristic of the land and all existing infrastructure. (*A land systems format and topographic base map with appropriate contour intervals, soil types, springs and surface hydrology existing vegetation and any land degradation, existing improvements and land use, as well as any natural or cultural heritage features of local significance*)

2. Analysis of microclimate, fire risk, soil hazards including impeded drainage, erosion, salinity, water resources, access and views.
3. A land use plan based on the above surveys and analysis showing all allotments, access and service reserves, and land use allocation of the remaining common land. (*Catchment protection areas for water supply dams, service reserves, road reserves, drainage line reserve, effluent disposal reserves, managed native forest, agricultural land, land management service centre.*)
4. An infrastructure plan showing all services and infrastructure associated with the designated land uses. (*Roads, power supply, telephone, fencing, water supply and distribution systems.*)
5. Requirement to provide a water supply system which would allow reliable supply for domestic and modest garden at each allotment. (*Water supply dams or bores, pumps, pipes, header tanks and distribution systems*)
6. Substantial reserve capacity to ensure adequate supply to houses gardens in drought years and allow development of appropriate irrigated cropping or horticulture on the common land.
7. Reticulation and/or fire fighting equipment adequate to deliver water to all houses and any other substantial buildings on the property in a fail safe manner in the event of a bushfire.
8. Well designed access roads constructed to service all allotments and integrated with a system of farm tracks to give access for fire fighting, land management activities and recreational use of the land by the residents. Standards of construction to ensure minimal environmental impact and where possible integrate roads in multi-functional roles. (*Sealed roads in higher density developments. All earthworks to involve topsoil stripping and replacement on finished work, roads designed as divisions between land uses, using roads as routes for underground services and fire breaks, use of dam walls for gully crossing where possible, contour road table drains as feeder channels to dams.*)
9. Provide adequate common parking areas close to allotments to allow safe parking for non-resident vehicles without adverse environmental impact.
10. Site all allotments to allow effective effluent disposal in an effluent reserve planted to suitable vegetation which, where possible, performs secondary functions. (*e.g. a common orchard which acts as a fire break for the house allotments.*)

11. Provision of underground grid power to all allotments or where extension of the grid would involve excessive environmental impact and/or cost, then an autonomous system to service an energy efficient house on each allotment and any facilities on the common land. (Where grid power / allotment exceeds \$15,000 at current prices, autonomous systems based on solar voltaic cells, batteries and standby generator.)

12. Produce a revegetation plan which include appropriate tree planting, direct seeding and/or natural regeneration to perform the following functions:

- a. wind shelter of allotments and agricultural land.
- b. privacy screening and framing of views of and from allotments
- c. wildlife corridors
- d. water body and drainage line protection
- e. effluent and storm water absorption areas
- f. reinforcing fenced boundaries between different land use areas.

(Well designed multipurpose shelterbelts and natural regeneration areas all fenced will perform many of these functions simultaneously)

13. Areas of existing native vegetation or plantations should have management plans which reflect sustainable use. Any clearing of forest for agricultural or residential use should be minimal and be compensated for by the revegetation plan.

14. The proportion of the land under permanent vegetation will vary widely but should never be less than 20%.

15. Species selection for revegetation should be on **functional criteria** but with preference for local indigenous over Australian native over exotic species.

16. Planning controls for any agricultural land which indicate permissible and prohibited uses and procedures for allocation of leases over whole or part of the land.

17. Site all allotments to allow construction of a energy efficient house with 70% solar access during midwinter.

18. An internal building code specifying energy efficient and fire resistant house design. *(Long east west {within 20°} axis with >50% of glazing facing north and >75% of the north face glazed, slab on the ground construction, internal thermal mass, R2.5 wall insulation, R3 roof insulation, enclosed eaves, roofs fixed as for high wind areas.)*

- 19.** Size of allotments should be between 0.2 and 0.4 ha depending on the land type. (*Positioning of allotments may or may not be clustered but any adjoining allotment should be separated by a privacy planting on common land reserve at least 10m wide.*)
- 20.** Ability to create between 2 and 4 times the number of lots allowable under the zoning controls. (*Actual number would depend on the degree of infrastructure development and management systems which are in place before lots go on sale.*)