Use of Theses

Evaluation Of Current Land Subdivision Practice Using The Objective Of Sustainable Development As The Criteria.

By

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Submitted in partial fulfilment of the requirements
for the award of Master of Town Planning,
University of Tasmania, August 1999

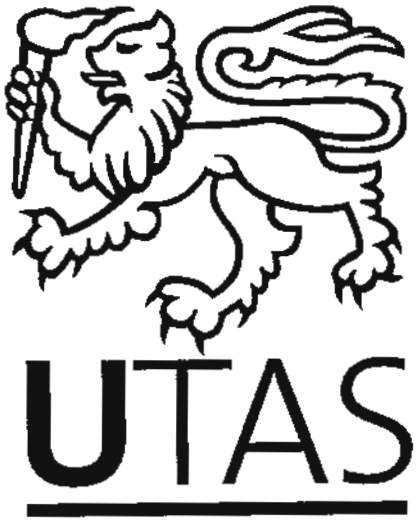
Declaration

This professional project contains no material which has been accepted for the award of any other degree or diploma in any tertiary or academic institution to the best of my knowledge and belief. This project contains no previously published or written material by any persons, excepting where due reference is made.

Signed: R. Quinn.....

(Robert Quinn)

Date: 6/12/99.....



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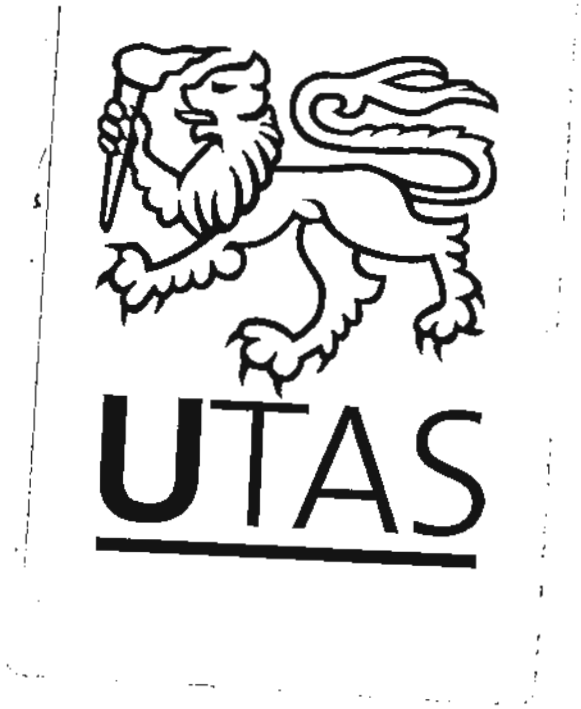
Finally I would like to thank my wife Maree Quinn for her patience and encouragement which was vital in the completion of this project.



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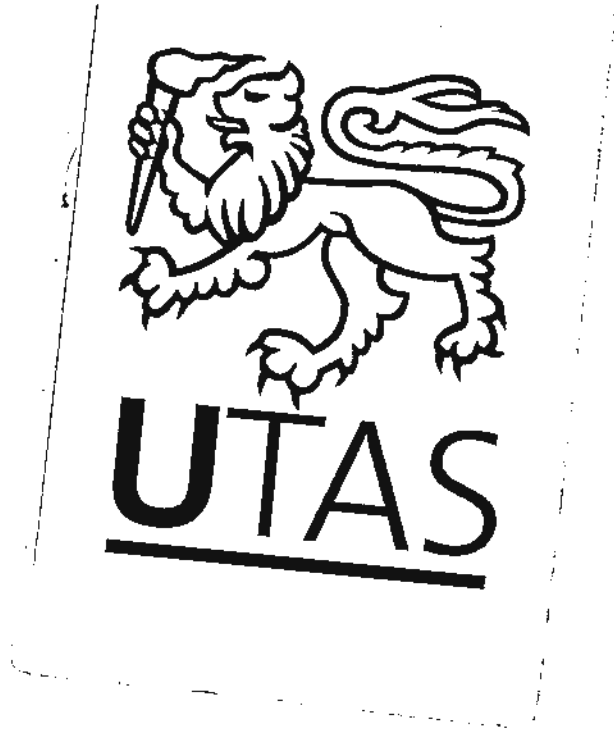

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All were photographs taken in May 1999 by author unless otherwise specified. The time of year is a factor to be considered in many of these photographs. Due to the elevation of the sun particularly in relation to reflection and visual intrusion, the estate may increase in visual prominence as the Sun's elevation increases in the Summer months. Refer to ***Appendix C, Figure 36*** for photograph location and aspect.

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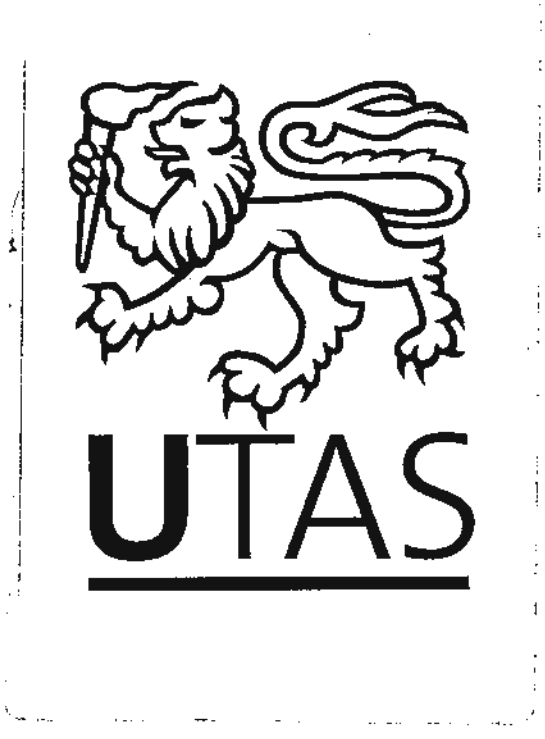
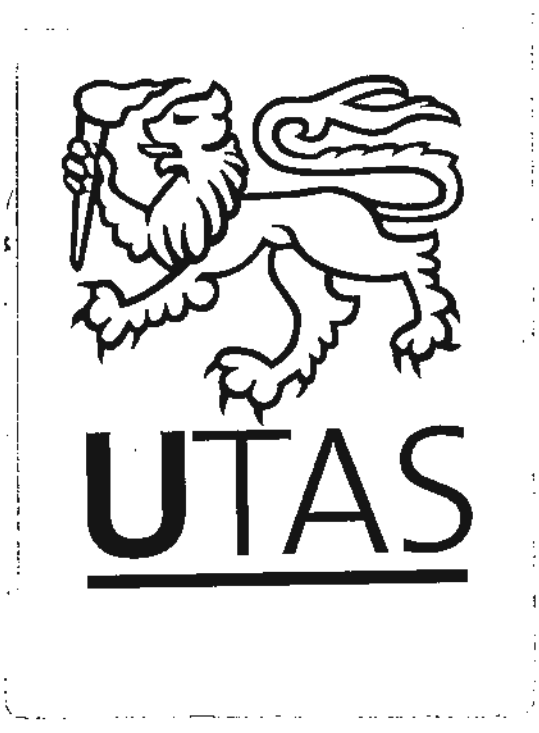


Table of Acronyms

Acronym	Full Name
AMCORD	Australian Model Code for Residential Development
EMPCA	*Environmental Management and Pollution Control Act 1994*
ESD	Ecologically Sustainable Development
IUCN	International Union for the Conservation of Nature
LOGBUMP	*Local Government (Building and Miscellaneous Provisions) Act 1993*
LUPAA	Land Use Planning and Approvals Act 1993
RMA	*Resource Management Act 1989* (New Zealand)
RMPS	Resource Management and Planning System
SPPA	*State Policies and Projects Act 1993*
TASCORD	Tasmanian Code for Residential Development



1 EXECUTIVE SUMMARY

The current land subdivision practice in Tasmania is not meeting the objective of sustainable development.

Although Tasmania has an example of world's best practice planning legislation there are no links between the objective of sustainable development and the decision making process in regard to land subdivision. A link between the objective of sustainable development and the actual planning schemes which govern how land is used is required. A greater emphasis on how land is used instead of what land is used for is needed.

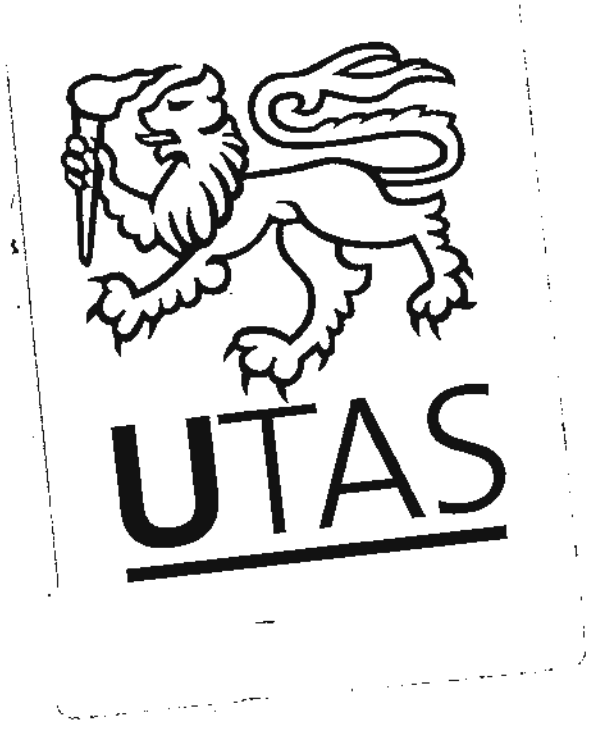
Performance based planning schemes are moving towards addressing the requirements of how developments occur. The legislative process is fundamental in controlling the outcome of subdivision in order to meet the sustainable development objective. The outcome of a subdivision is dependent on how the land is ultimately used. The process needs to be outcome focussed as many of the consequences of land subdivision are practically impossible to reverse, particularly in the case of the natural environment.

It is apparent that once the subdivision has been approved it too late to retro-fit sustainable development principles. The decision needs to be made at a early stage; can or should this parcel of land be subdivided at all?

The project has shown that there is a over supply of subdivided land suitable for residential development which clearly does not meet the sustainable development objective of the *Land Use Planning and Approvals Act 1993* (LUPAA). The reasons for this situation have been given, along with a historical perspective on the current situation to better understand the issues involved. This historical perspective also gives an understanding of what is possible and how circumstances may be changed.

Clearly, urgent action needs to be taken to prevent the oversupply of land and subsequent degradation of the environment. The issue of intergenerational equity is an issue of concern which has not been addressed or in many cases considered. This issue is of increasing concern as time passes and present legislation does not consider the impact of present decisions on future generations.

The present situation is the result of a complex set of issues, stemming from societies expectations, cultural values and economic circumstances. As with any complex problem there is no one simple answer, but rather a series of answers which will need modifications to suit this dynamic situation.



2 INTRODUCTION

Tasmania has a statutory resource management based planning system. This system has a legislative framework emphasising sustainable development and resource management. Sustainable development is the cornerstone of the resource management legislation. Tasmanian land use legislation is a collection of various statutory acts and governmental policies, along with the ongoing formulation of state policies.

The objectives of the resource management legislation are stated in Schedule One[1] of the *Land Use Planning and Approvals Act 1993* (LUPAA). These objectives are broad and in many cases non-specific. As a consequence they are subject to legal argument and interpretation, particularly in terms of implementation by planning authorities

This leads to differing legal opinions over the meaning and intention of the objectives. The objectives are intended to be implemented, in part through the development control process in Part 4 of the LUPAA. Implementation of resource management is also through other Acts, for example the *Environmental Management and Pollution Control Act 1994* (EMPCA). The planning system has a direct impact on proposed developments, but not existing land uses which are accorded existing use rights. The planning system does not come into practical effect until a development is proposed or a change of use is proposed. The planning system is enforced through planning schemes by local government.

Under the *State Policies and Projects Act 1993* (SPPA) State policies are created by the State Government. State policies are uniform throughout the State and based on sections of the environment, however general in the terms of application. State policies are implemented through local government planning schemes and bind the crown. To date, the following State policies have been proclaimed;

- *State Coastal Policy 1996*;
- *State Policy on Water Quality Management 1997;* and
- *State Policy on the Protection of Agricultural Land 1999.*

The State Government is moving toward directing local government to adopt a statewide Model Planning Scheme framework that will be performance based which is focussed on sustainable development as an outcome. The majority of planning schemes presently in use are

[1] See Appendix A.

prescriptive, vastly different in many ways. A uniform planning scheme framework statewide, would ensure consistent definitions and provisions within different local government areas.

2.1 OBJECTIVE OF PROJECT

The objective of this project is to evaluate a typical land subdivision using the sustainable development objective of the LUPAA as a criteria.
Sustainable development in the LUPAA is defined as:-

> *"sustainable development" means managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well-being and for their health and safety while-*
>
> *(a) sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations; and*
>
> *(b) safeguarding the life-supporting capacity of air, water, soil and ecosystems; and*
> *(c) avoiding, remedying or mitigating any adverse effects of activities on the environment.*

From the evaluation recommendations will be made.

2.1.1 Evaluation and Evaluation Criteria

It is recognised that the concept of sustainable development is difficult to define and therefore no quantitative measures can be used. The evaluation criteria will be based on the broad principles of;

- Environmental issues;
- Economic issues; and
- Social issues.

The project will evaluate the outcomes of a land subdivision that was approved with a planning scheme enacted before the LUPAA was proclaimed. The case study does however, have a range of planning controls which were enacted by the means of a Part Five Agreement under the provisions of the LUPAA and in that respect does have sustainable development objectives involved in the process.

2.2 APPROACH AND PROJECT OUTLINE

The approach the project will take in the evaluating the subdivision process will be outlined below.

1. An outline of the history of sustainable development will be given. A brief history of how this concept became embodied into Tasmania's planning legislation. This section will show that Tasmania's planning system could be an example of worlds best practice.

2. A case study will evaluate the results of a typical land subdivision against the objective of sustainable development.

3. An explanation as to why the land subdivision process contemporary practices are not meeting sustainable development objectives.

4. Recommendations will be made in order that land subdivision moves towards meeting sustainable development objectives.

5. Future possible trends in land subdivision will be discussed.

2.3 WHY LAND SUBDIVISION IS CRUCIAL TO SUSTAINABLE DEVELOPMENT

Land subdivision is the creation of separate titles to areas of land. As a consequence of land subdivision separate land titles are created giving individual owners certain rights on the use of the land. It is the fragmented, uncoordinated way subdivided land is used which conflicts with the sustainable development objective.

2.3.1 Individual titles

The title to a land parcel enables a discrete portion of the Earth's surface to be traded relatively easily. This discrete parcel is generally formed by a mathematical closure of surveying observations with little relevance to environmental factors on the parcel or how the parcel fits into a larger natural land system. In many cases a land title has no reference to the natural features described on the title.

There is no limit to the quantity or location of land titles an owner may purchase. Developers often sequentially purchase adjacent lots

and then adhere the titles enabling them to form a larger lot with a potentially wider range of opportunities.

2.3.2 Rights of land use

Land use is generally controlled by the LUPAA and planning schemes. This allows the property owner to technically use the land according to the constraints of the zoning contained in the relevant planning scheme. It is the rights use of land which has the greatest effect on the sustainable development objective. The term 'use' is defined in the LUPAA as:-

> *" 'use', in relation to land , includes use or proposed use for the purpose for which the land has been, is being or may be developed;"*

It is the outcome and result of the use of the land which impacts upon the objective of sustainable development. The way in which the land is developed and used is a crucial factor. Land itself is the fundamental foundation for development and use.

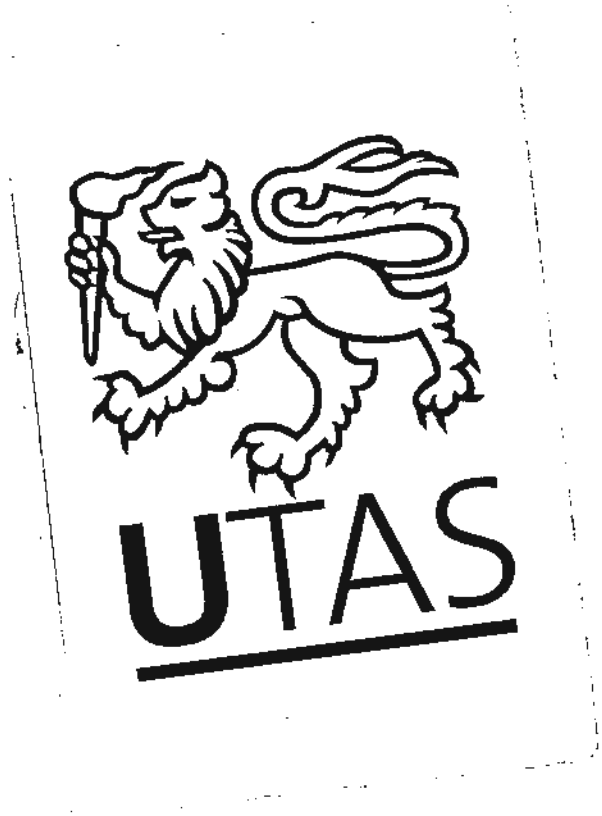
2.3.3 Discussion

The combination of rights to use and develop land combined with individual titles, (especially the issuing of a title with no respect to natural boundaries) has consequences when formulating a resource management regime. In many cases legally enforceable title boundary which have no respect for natural on-site factors negates any resource management plans. Artificially imposed title boundaries have no respect for the natural environment. Nature has defined its own boundaries, whether by climatic changes, catchment boundaries, water courses, vegetation changes, soil changes or any combinations of these.

A major issue in respect of sustainable development is how the land is uscd. It is the way in which land is developed and used not what type of development occurs. The impact upon the environment is a major consideration not what type of use occurs on the land. Many prescriptive planning schemes focus on land use control whilst not stipulating provisions on how the ongoing use and development occur.

Subdivision design is crucial to sustainable development. If provision is made for the natural boundaries of the site at the initial subdivision stage, it is far simpler and easier to plan for sustainable development. Rather than attempt to retro fit a subdivision to comply with sustainable development objectives after the titles have been issued and individually purchased.

Subdivisions are usually designed around the road system as road construction is generally the most expensive component. The road system then governs service provision, lot access and perhaps most importantly for the developer, the number of lots to be sold. In many cases the actual land use of the subdivision is a secondary consideration. The actual house sites and their access is perhaps the most important factor, however commercial decisions do not allow this issue the consideration it deserves.



3 SUSTAINABLE DEVELOPMENT AND THE TASMANIAN PLANNING SYSTEM

3.1 INTRODUCTION

The history of sustainable development from the international context through to the Tasmanian context will be detailed. A brief outline of how sustainable development became embodied in the planning system of Tasmania will also be given.

Finally a summary of the factors that contributed to Tasmania having a world's best practice resource management planning system based on sustainable development will conclude the section.

3.2 HISTORY OF SUSTAINABLE DEVELOPMENT

3.2.1 International Context[2]

The sustainable development paradigm is a modern concept which evolved from concerns stemming from mankind's impact upon the environment. Rachel Carson's book Silent Spring[3] is credited with first raising the issues of sustainable development and sustainability. Silent Spring was published in 1962 and is acknowledged as a landmark account of the damage mankind was inflicting on the environment and ecological processes in an attempt to 'tame and conquer' nature.

The concept of sustainable development has evolved through an increasing concern over mankinds' detrimental activities on the environment. Rachel Carson raised the issue of the environment's capacity to absorb mankinds' increasing impact upon it. It became apparent the rate at which damage was being inflicted upon the environment that mankind's existence was being threatened.

In this era [1950's-1960's] chemicals and pesticides were used with little thought for the consequences they would have on the environment. It was the era when DDT and many other now banned chemicals were freely used by both the public and government authorities.

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[2] International Institute for Sustainable Development, Sustainable Development Timeline, Canada, http://www.iisd.ca.timeline as at 20/10/98, 1997.

[3] Carson, R. *Silent Spring*, Hamish Hamilton, London, 1962.

Throughout the 1960's, various international groups and organisations were formed to discuss environmental and economic issues. These movements adopted a holistic view of the world where humans were part of the ecological system rather than the conqueror or ruler. These international groups had considerable scope ranging from population growth, economics, poverty, quality of life issues, land degradation, food consumption, pollution and resource consumption, all of which came under the umbrella of sustainable development.

In 1971 Greenpeace was founded in Canada, to eventually become a international group raising the profile of environmental damage. The argument between environmental damage and economic development remains a major focus of this group.

During the 1970's pollution was becoming an increasing issue with acid rainfall increasing in Northern Europe. In the late 1970's several environmental catastrophes captured world headlines which brought a public focus onto sustainable development. Two catastrophic events, in particular are detailed below which captured world wide public attention.

- A nuclear reactor leak at the Three Mile Island (United States of America) power plant was highly publicised, which resulted in negative publicity for the nuclear power industry. The radiation leak was highly publicised and litigation stemming from the radiation leak resulted in compensation of many millions of dollars being paid to accident victims. This type of environmental catastrophe had a direct impact on humans.

- On the 17th March 1978, a supertanker, Amoco Cadiz filled with 223,000 tons of crude oil lost its entire cargo in the Atlantic Ocean, off Portsall, Brittany. The oil slick from this immense oil spill, almost eight times the size of the 1989 Exxon Valzdez spill off the coast of Alaska, caused a great environmental disaster.

During the 1980's the United Nations became involved in environmental issues and called for "...an understanding of our dependence on resources and the need to control our exploitation of them."

The 'World Commission on Environment and Development' was formed in 1983. This now famous commission was chaired by Norwegian Prime Minister Gro Harlem Bruntland and was responsible for the 'Brundtland Report' published in 1987. In 1987 the 'Brundlant Report' defined sustainable development in a definition which sought to link economic, environmental and social issues, but also importantly involved the issue of the future and the rate of consumption of resources.

It was during the 1980's that the term 'sustainable development' was used and began to emerge as a paradigm. An increasing public awareness of the conflicts between the 'laissez-faire' attitude of economic theory that natural resources were boundless and could be considered free and on the other hand the concept of natural resource stewardship for future generations. During this time period it was claimed the world was consuming resources at a rate which was not sustainable. The concept that we are living beyond our means by borrowing against the future was also brought to the world's attention.

In 1992 the United Nations Conference on the Environment and Development [Earth Summit] was held in Rio de Janeiro. This conference resulted in the publication of Agenda 21 and was attended by 178 countries. Agenda 21 is a blueprint for achieving sustainable development and sets guidelines for actions at all levels of government. It was agreed in Rio de Janeiro that to reach the goal of sustainable development all levels of government, and the community would need to become involved. This has relevance to local government, as in many cases local government is responsible for control over development and the subsequent effect of development on the environment. Local government have the means to implement Agenda 21 recommendations through statutory planning schemes and is the level of government closest to the community.

Since 1992 there have been many ongoing conferences and reports based on sustainable development. One notable conference was held in May 1997 in Kyoto, Japan in an attempt to reach an agreement to reduce green house gas emissions. Another conference was held in New York in December 1997 to review the implementation of Agenda 21. This conference [Earth Summit +5]

was a sobering reminder that little progress had been made in implementing key components of Agenda 21.

The concept of sustainable development has become firmly entrenched in international arena and continues to set direction for future policies. There are now many international agencies and organisation devoted to furthering the concept of sustainable development.

3.2.2 Australian Context[4]

In 1983, Australia adopted a 'National Conservation Strategy' to implement objectives of the World Conservation Strategy which was released in 1980 by the International Union for the Conservation of Nature (IUCN). Australia's environmental/ecological policies were also influenced by the landmark 1987 'Brundtland Report'. The National Conservation Strategy lead to the Australian Government introducing an Ecologically Sustainable Development Process (ESD).

In 1990 the Australian government embarked on a process of community and industry consultation to embrace ESD. The major focus of this process was to find mechanisms for integrating economic development and the protection of the environment. This process also focussed public attention on the concept of sustainable development, along with the other developments in the international scene, for example, the Earth Summit

In May 1992, the Intergovernmental Agreement on the Environment between State and Federal governments came into effect. This agreement set a framework for government policy direction and ESD as a goal for Australia. This framework sets out broad strategies and objectives for both industry and government. None of these agreements are legally binding and rely on self compliance by stakeholders. A major focus of these objectives is intergenerational equity. This raises the issue of a social responsibility for present actions as they effect the future.

[4]Information for this section sourced from the Department of Environment, Australian Government, (1997) Environment Australia Online, http://www. environment.gov.au/epcg/esd/intro.html#whatisInIt on May 1999.

3.2.3 Tasmanian Context

Up until the introduction of the present planning legislation, Tasmania relied upon the *Local Government Act 1962* for planning provisions which had not changed significantly from the 1940's.[5] It was long recognised that Tasmania's planning legislation was in need of being modernised with proposals being prepared in the mid 1970's.[6] There were two attempts made to introduce new planning legislation prior to 1993. Both these proposals failed due to the legislation being rejected by the Legislative Council.

Tasmania had the world's first 'green political party' which was formed out of opposition to the flooding of Lake Pedder in the early 1970's.[7] This party was known as the United Tasmania Group and a candidate from this party narrowly missed being elected in 1972.

Tasmania had a turbulent political period prior to the 1989 State Government election. There were frequent public protests before the 1989 election over logging in National Estate areas, and increasing woodchip quotas. This environmental awareness galvanised the community into rejecting a proposed pulp mill at Wesley Vale. Environmental and resource management issues were a major community focus during this period. This period was described as the 'greening of Tasmania.'[8]

The Labor-Green Accord was formed in 1989 which enabled the introduction of new planning and environmental protection legislation. This commitment was in keeping with both parties pre-election policies. The draft planning legislation was subject to public discussion and community consultation. Tasmania received international prominence by having a 'Green' government. The Tasmanian community had become environmentally conscious and in this atmosphere of environmental protection the resource management legislation spawned.

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[5] Report commissioned by Department of Environment and Land Management, (1997), Andrew Edwards[Chairman], *Committee for the review of the State Planning System*, Page 54.
[6] Bingham, R. National Environmental Law Association Tasmania Division, *Genesis and outline of the Resource Management and Planning System*, 1995.
[7] Hutton, D. & Connors, L. *A History of the Australian Environmental Movement*, Cambridge University Press, Melbourne, 1999, p. 121.
[8] Robson, L. *A History Of Tasmania*, Volume II, Oxford University Press, Melbourne. 1990, p. 584.

In 1992, the following draft planning bills were introduced:-[9]

- *State Policies and Projects Bill 1992*;
- *Land Use Planning and Approvals (Consequential and Miscellaneous Amendments) Bill 1992*;
- *Land Use Planning and Approvals Bill 1992*;
- *Resource Management and Planning Appeal Tribunal Bill 1992*; and
- *Approvals Deadlines Bill 1992.*

This draft legislation was radically different from the previous the *Local Government Act 1962.* Resource management and environmental protection along with the opportunity for increased public participation in the planning process were included in the new legislation.

The Liberal Government took office in 1992 and the legislation package was introduced into Parliament in mid-1993. This package of legislation commenced on 1st January 1994. See ***Appendix B*** for a brief outline of the RMPS. The passage of the legislation through parliament was facilitated by both political parties. The political process cannot be underestimated in this context. While a political party may control the House of Assembly, legislation often did not pass the independent Legislative Council.

Lessons had been learnt from earlier failed attempts to introduce legislation. The pragmatic view was taken to split the legislation into smaller Bills to enable it to pass through parliament.[10] If a single large planning legislation Bill had been introduced into Parliament it may have been rejected.

Tasmania's resource management legislation was basically 'borrowed' from New Zealand's *Resource Management Act 1989* (RMA). The RMA has sustainable development as its cornerstone and therefore much of Tasmania's resource management legislation is very similar to New Zealand's.[11] All New Zealand's resource management legislation is covered under one Act where Tasmania has a number of Acts covering resource management. In this

[9] Hansard 3rd December 1992.
[10] Personal communication R. Bingham, Director of Policy, Department of Environment and Land Management in 1993.
[11] ibid.,

respect New Zealand has a coherent integrated set of planning instruments.

A major factor for this integrated set of legislation is the Government system in New Zealand. New Zealand does not have two houses of Parliament.[12] A bill can be passed by the party with majority, unlike Tasmania's system with the two separate houses of Parliament.

3.3 WHAT IS SUSTAINABLE DEVELOPMENT ?

The term sustainable development is difficult to define. A major reason why sustainable development difficult to define is caused by the dynamic nature of the natural environment. Several existing definitions of sustainable development will be discussed.

3.3.1 Definitions

The 1987 Brundtland Report[13] defined sustainable development as;
"development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

The Australian Government uses the term Ecologically Sustainable Development[14] which is defined as;
"development that improves the quality of life, both now and in the future, in a way that maintains the ecological process on which life depends."

The LUPAA defines sustainable development as;
" 'sustainable development' means managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well-being and for their health and safety while -

(a) sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations; and

(b) safeguarding the life-supporting capacity of air, water, soil and ecosystems and;

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[12] New Zealand Parliament at http://www.clerk.parliament.govt.nz/ on 10/11/98
[13] Department of Environment, Sport and Territories, *Local Global , Managing the future, A Local Government Guide*, Commonwealth Government Publication, 1994, p. 12.
[14] ibid., p. 12.

(c) avoiding, remedying or mitigating any adverse effects of activities on the environment."

There are several key themes which are present in all these definitions whether stated implicitly or explicitly.
Some of these key themes are:-

- Intergenerational equity;
- Improving the present environment (cultural, built, natural);
- Future consequences for present actions;
- Dependence of life on the natural environment;
- Using resources at a rate which causes the least harm to the environment and the community;
- Stewardship of the land (as opposed to outright absolute ownership for ever);
- Long term future for life on Earth;
- Social considerations for development; and
- Economic considerations for development.

One key difficulty lies in bringing these key themes of sustainable development into implementable actions at a local level.

3.4 SUSTAINABILITY VERSUS SUSTAINABLE DEVELOPMENT

Due to Earth's finite resources, total sustainability is clearly not achievable, yet the move towards the prudent use of resources with the future in mind is a progressive step.

3.4.1 Sustainable Development

Sustainable development applies to any new development. Development implies that a change is occurring. The new development (or change) will have to comply with sustainable development concepts.

3.4.2 Sustainability

Sustainability is the assessment of a development and is often used to assess a development in economic terms. Sustainability relates to the state of current practices, for example, is a proposed development sustainable in the long term? A current use may be un-sustainable, however the planning system will have no effect unless a new development or change of use is proposed.

This does not mean that present uses cannot or should not move towards becoming sustainable. Many past developments were results of historical factors and the accepted practices of the time. The existing roads systems are an example of a historical development. Many of the roads which are presently being utilised were constructed without any consideration of sustainable development objectives.

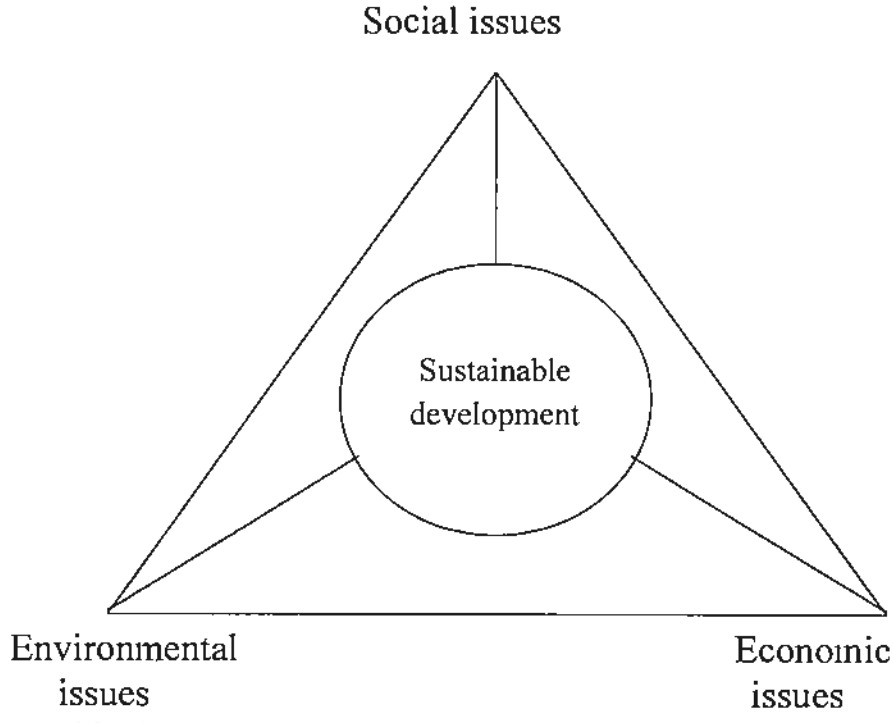

Figure 1. Graphical representation of sustainable development. Source: Author.

3.5 SUMMARY

One of the most important factors in sustainable development is the outcomes and the effects of use and development on the environment. It is a way of assessing and basing decisions concerning future development. Sustainable development is not an end state, but rather a process. Sustainable development is a process because the goal of sustainable development can never be reached due to the evolution of standards and community expectations. Changes in technology will invariably alter the way mankind exists.

It was in an era of increasing community awareness in the late 1980's of environmental issues with a concern for the future that the Tasmanian RMPS emerged. There was a shift away from exploitation of resources. This legislation embodied sustainable development as its

new paradigm. Tasmania's political landscape was changed by the 'greening' of the community in the late 1980's early 1990's. In this period when five Green politicians supported majority government, Tasmania had a window of opportunity to introduce contemporary resource management legislation.

New Zealand was a world leader in introducing sustainable development planning legislation and was used as a model to develop Tasmania's RMPS. Tasmania is one of the first states in the world to introduce 'sustainable development' into legislation and to require it to be taken into account in government policy making.[15] This statement is also backed up by the Edwards Report where it was stated "....the Tasmanian Resource Management and Planning System is almost universally considered an example of Australian, if not world best practice in resource management and planning."[16]

The combination of community environmental awareness and green politicians in the late 1980's, early 1990's in Tasmania resulted in world's best practice resource management legislation being enacted.

[15] Jacobs, M., Paper presented at Royal Institute of Public Administration Australia conference held at Wrest Point, Tasmania, 1993.

[16] Department of Environment and Land Management, Committee for the review of the State Planning System, Andrew Edwards[Chairman], 1997.

4 SUBDIVISION PROCESS

4.1 INTRODUCTION

This section will discuss how the process of subdivision takes place in practice, regardless of the objectives of the RMPS. Firstly a historical background will be given on the subdivision process. Secondly an outline of the actual sub division process will be discussed. Thirdly the local government system will be discussed in regard to its contribution to the outcomes of subdivision. From this discussion it will be shown why subdivision occurs in the present manner, in spite of the best intentions of the RMPS.

4.2 HISTORY OF SUBDIVISION IN TASMANIA

Subdivision in Tasmania began soon after European settlement, when land was granted to settlers, soldiers and convicts in order to encourage the cultivation and improvement of the land. This settlement was in the context of providing a presence in the event of another nation (France) claiming Tasmania. A process of land grants took place under the British common law legal system in which the Crown was the absolute owner of all land. The Governors of the day as representatives of the Crown were responsible for the granting of land. The four first land grants were made by Governor King in 1804, of one hundred acres on the western shore of the Derwent river.[17] The abundance of cheap land was a major attraction to the colony in those early times. By 1831, 1,457,461 acres of land had been granted to Europeans, which was all of the easily accessible and fertile land along the route between Hobart and Launceston.[18]

In the early days of Tasmania, land was not considered a valuable commodity due to the seemingly unlimited supply. The grantees who had land granted to them in areas close to the settlement would invariably benefit from the rise in land prices due to the location and finite amount of land. In 1834 land in the vicinity of New Town was valued at 90 pound per acre.[19] All this time, land speculation was common in areas nearby to Hobart with land prices quoted at rising from 100 pounds to 750 pounds in a five year time span.[20]

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[17] Morgan, S. *Land Settlement in Early Tasmania; Creating an Antipodean England*, Cambridge University Press, Singapore, 1992.
[18] ibid., p. 124.
[19] ibid., p. 145.
[20] Solomon R.J, *Urbanisation: The Evolution of an Australian Capital*, Angus and Robertson, Sydney, 1976, p. 271.

In the mid 1830's the granting of land by the Crown was abolished. As land was no longer freely available through the grant system, trading of land would have been lucrative enterprise, considering the land was granted freely or for a nominal amount. Land owners of property close to Hobart and Launceston would have become wealthy, merely through the passage of time with the increasing demand for land bought about by population growth.

The *Real Property Act 1862* was introduced to improve the common law system of land transfers, registration and enable efficient transfer of land which made trading in land far simpler. A new official land registration system commonly known as the 'Torrens' system was introduced and is still in use today. This system requires a diagram of the land parcel to be held by a statutory body and any transaction concerning this parcel was to be recorded by this body thereby confirming ownership of the land on the diagram.

There was now an efficient system of transferring legal ownership of land, which did not require the drafting of another deed to be kept with the existing deeds as was the case in the Common Law system. The Torrens system also made the process of subdivision less cumbersome and provided certainty in land ownership.

The relatively large original grants have in most cases been subsequently subdivided into smaller lots and re-sold many times over the following years. In 1864 forty lots approximately one quarter acre in area were offered for sale at the price of 20 pounds each in Arthur Street, North Hobart.[21]

Land speculation has long been part of the culture of European settlement, with land being regarded as a commodity to be traded at will in an effort to realise a profit. The subdivision of land has operated in tandem with the economic cycles and technological changes. These changes have lead to a completely different society than existed in the 1800's when the land was first granted freely. In the early 1900's many farms existed on the outskirts of Hobart to supply the town with food.
The relocation of industrial employment centres to the outskirts of the city during the early 1900's (Cadburys, Electrolytic Zinc Company) lead to the necessity for housing on the outskirts of Hobart and so

[21] ibid., p. 275.

subdivision of land was undertaken. This in many cases was facilitated by the State Government in areas such as Goodwood, Chigwell and Risdon Vale.[22] An example of this was the population rise of the Moonah, Glenorchy area between 1933 and 1961 when the population numbers increased from 9,898 to 35,682.[23] This increase in population meant the provision of residences and in almost all government funded areas meant a quarter acre block residential allotment. Societies expectation of housing (therefore land ownership) had been transformed from a subsistence culture, into a culture of a 1/4 acre block in a suburban setting.

A major factor which brought about this change was the improvement in transport technology that enabled land subdivision to flourish. Battery Point is an example of the past where people once lived close to a place of employment without the need for private transport.

4.3 PRESENT SITUATION

Since the economic boom of the 1950's, Tasmania's economic fortunes have declined and the heavy industrial economy is no longer viable.[24] This decline is due to isolation, globalisation of the world economy, transport and technology changes, etc. The economy in Tasmania is changing from a manufacturing/industrial based, although resource development is an important aspect of the economy. It has long been recognised that Tasmania's economy is a poor performer relative to the mainland states.[25]

There has also been a decline in average household size over time. Average household size is defined as the number of people living in each house. The average household size has been declining in conjunction with the population decline of Tasmania.

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[22] ibid., p. 289.
[23] ibid., p. 289.
[24] Ridder, B. *State of Environment Report, Hobart City Council 1998*, Monotone Art Printers, Tasmania, 1998, p.18.
[25] ibid., p. 18.

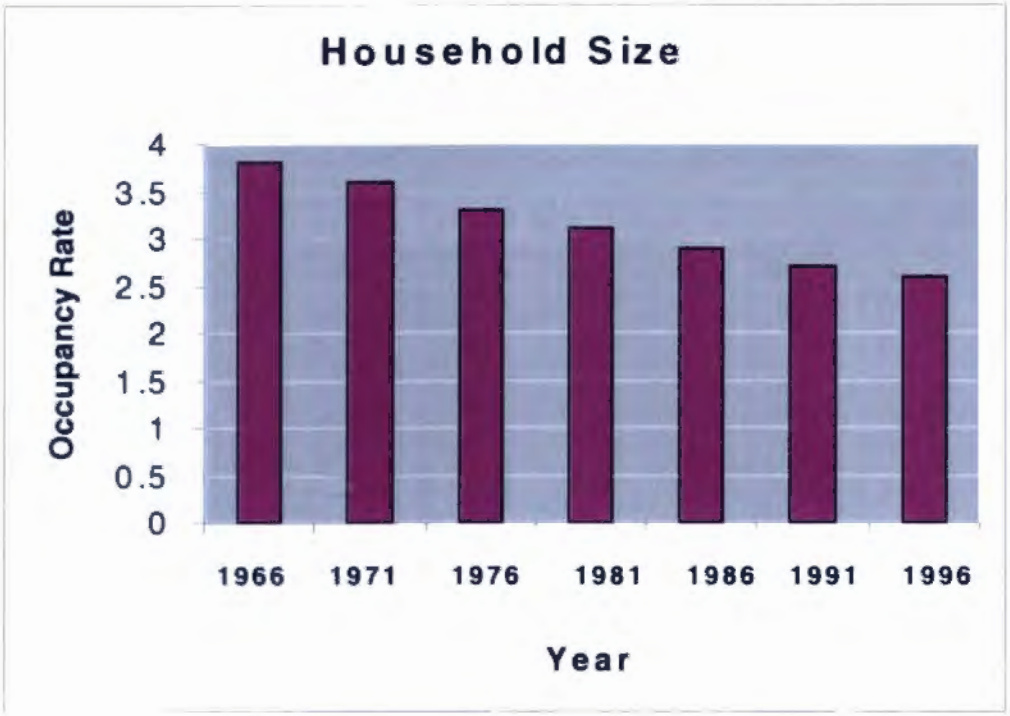

Figure 31. Household Occupancy Rate
Source: State of Environment Report[26] and Australian Bureau of Statistics Catalogue No. 2026.6

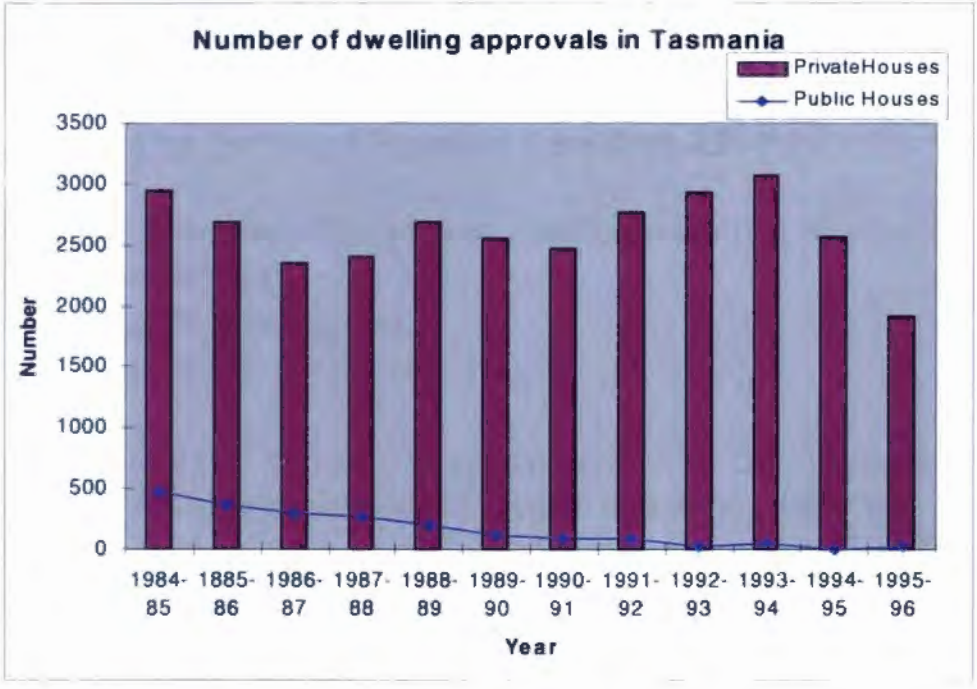

Figure 32. Number of dwelling approvals in Tasmania.
Source: Australian Bureau of Statistics, Catalogue No. 2795.6 & 2887.3

[26] Department of Environment and Land Management, *State of the Environment Report, Volume 1 Conditions and Trends*, Printing Authority of Tasmania, 1996.

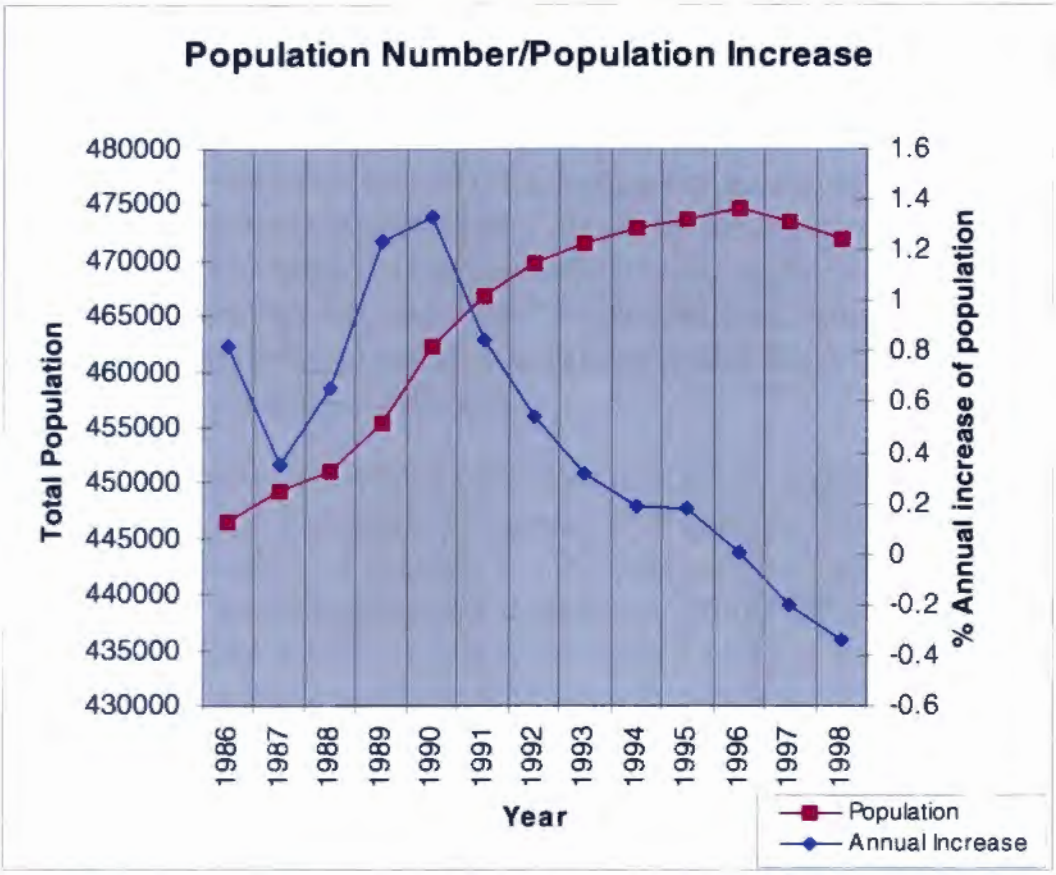

Figure 33. Total population number and rate of annual increase.
Source: Australian Bureau of Statistics Year Book 1994 and 1998.

Therefore a summary of the present situation regarding population and housing is as follows:-

- declining population; and
- declining number of people living in each house.

The population of Tasmania is expected to decline over the next fifty years.[27] It would be reasonable to assume that with a declining population, demand for housing and consequently subdivision of land should also decline. In fact the opposite has occurred.

It should also be noted that Tasmania's annual percentage increase of population has undergone fluctuations in the past. This statistic reached a peak of 2.61% in 1954 and a low of 0.51% in 1933, however

[27] Ridder, B. *State of Environment Report, Hobart City Council 1998*, Monotone Art Printers, Tasmania, 1998, p.14.

this indicator has not been in the negative range until 1996/97.[28] The trend for a declining household occupancy rate is also not confined to Tasmania alone.

4.3.1 Supply and Demand

In the City of Hobart in 1993, the number of dwellings increased by almost 4500 between 1961 and 1991 while the population dropped by a little over 6000.[29] The connection between number of dwellings/households and vacant residential land is not absolute, however they are governed by both supply and demand with population creating the demand.

A point in time will be reached when as a result of declining population and household occupancy that the need for further subdivision will be minimal. In 1998 Hobart City Council issued sixty eight Building Permits for dwellings with twenty two being in the Sandy Bay area.[30] This is a significant decrease in numbers as opposed to the average increase of one hundred and fifty dwellings per year for the thirty years between 1961 and 1991.

The occurrence of subdivision is not confined to fringe areas of cities alone but occurs in rural areas also and has been well documented[31] in a published paper which details subdivision of the southern beach areas near Sorell. At present there are a significant number of subdivision proposals in various stages of assessment as shown in Table 1.

[28] Solomon R.J, *Urbanisation: The Evolution of an Australian Capital*, Angus and Robertson, Sydney, 1976, p. 269.
[29] Department of Environment and Land Management, *State of the Environment Report, Volume 1 Conditions and Trends*, Printing Authority of Tasmania, 1996.
[30] Hobart City Council files, 22 March 1999
[31] Graham, R. *Hobart: Explosion Without Growth*, Urban Policy and Research, Vol 12, No. 4, 1994.

Subdivision	No. of lots
Enterprise Road, Sandy Bay	56
Folder Street, Sandy Bay	67
Russell Street, Sandy Bay	34
Forest Road, Hobart (currently under legal negotiation)	81
Tolmans Hill (approved)	421
Boronia Hills, Kingston	30
Weily Park, Brighton	18
Arm End, South Arm (approved)	66
Droughty Point, Howrah (currently under legal negotiation)	150

Table 1. Selection of proposed and approved subdivisions.
Source: Hobart City Council, Resource Planning and Development Commission, 22 March 1999.

The land subdivision process has an inertia which has not yet caught up to the market reality or the objectives of the RMPS. Developers and land owners have invested heavily in the commercial enterprise of land subdivision. Landowners/developers are reluctant to stop any plans they have for subdivision which have been formulated over a long period of time. It is often quoted in literature that land is seen as a de-facto superannuation policy and can be cashed in readily by the owner.

Local Government has promoted this belief as they have levied full residential rates on un-developed residential land parcels thereby tacitly approving of the conversion of this land into residential lots at some future stage. This expectation of subdivision has been cultivated by local government in many cases where they do not want to be seen as anti-development by refusing a subdivision proposal. This has led to a community culture were land speculation through subdivision is excepted and therefore considered acceptable.

The zoning system also perpetuates the expectation of land subdivision. Residential zoning allows subdivision with little regard to outcomes. This system allows land owners certainty in being able to subdivide as the present controls are cumbersome and slow to react to economic conditions.

Land is a marketable commodity at the peril of the market with the law of 'supply and demand' governing the market price. In this present situation, with, a declining population base coupled with a 'sluggish' economy, market forces should cause the market price of land to decrease. The demand for land is influenced largely by changes in population and levels of community and business prosperity.[32] These factors should result in making this type of commodity trading less profitable and secure. However this is not the case given the amount of allotments currently being proposed for subdivision and those currently on the market as detailed in Table 1.

When land is subdivided not all lots are equal in their marketability, for example some sell much quicker than others due to slope, aspect, etc. This is the case at Tolmans Hill where the lots with panoramic views have been marketed first. This leads to the occurrence where the most desirable lots sell first and it may be many years until the remaining lots sell and thus leads to a partially developed subdivision.

4.3.2 Case Study for Residential Land Demand in the Greater Hobart Area[33]

It must be stated that residential land supply and demand is a very complex issue and these calculations are not conclusive. There will always be a demand for residential land driven by external factors. For example, inter-suburban migration, a desire to live in a higher socio-economic area, a desire to build a personally designed residence, etc.

Household occupancy rate 1991(Greater Hobart).....2.77[34]

Lots available for sale
(1/3 of those listed as vacant 1991).....2,520[35]

Almost 82% of dwelling stock in this area are single detached

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[32] Rost, R. and Collins, H. *Land Valuation and Compensation in Australia*, Southwood Press, Sydney, 1993.

[33] Greater Hobart Area is the area contained within the local government boundaries of : Hobart, Glenorchy, Clarence, Kingborough, New Norfolk, Brighton, Sorell and Huon Valley.

[34] Hogue, S. *Future Urban Development and Infrastructure Provision in Greater Hobart,* Department of Environment and Land Management, p. 10, 1996.

[35] ibid., p. 16.

dwelling.[36] A single detached dwelling may be a one of several dwelling units on a stratum titled lot.

Using 1991 statistics:
To allow for stratum title unit development a reduction of 18% of 2,520 used.

0.82* 2,520 = 2,066 lots which could be for a single detached dwelling.

Using a household occupancy rate of 2.77.

2,066 lots * 2.77 per persons/lots = 5,723 persons

This calculation shows enough lots are available for 5,723 persons.

This scenario also does not take into account that in the same area there are 1,167 vacant rural residential lots on the market which would make this estimate a conservative result and effectively cancel out any impact of stratum titled units would have on this figure.[37] This result is also conservative as it does not take into account the number of lots which have been introduced onto the market since 1991. Using these statistics, there is the potential for approximately 2,000 households and 5,700 people to occupy a dwelling on a vacant residential lot in the Greater Hobart area alone.

From 1991 till 1996 Tasmania's population has increased in total by 5,098. As stated earlier, the connection between households and vacant residential land is not absolute, however it does indicate that we have an oversupply of vacant subdivided residential land. The Greater Hobart area had ample subdivided land to cater for Tasmania's population growth.

This is further supported by the decrease in population of 1,601 people in Tasmania between 1997 and 1998.[38] By using a Tasmania wide household occupancy rate of 2.77 for 1996, this equates to 615 households which are no longer required. This 615 less households equates to a decrease in need for residential allotments. It is valid to use the 1996 household occupancy rate of 2.77 as the trend

[36] ibid., p.11.
[37] ibid., p. 17.
[38] Australian Bureau of Statistics, Catalogue 3234.6.

downwards is expected to continue, but perhaps level out over the next ten to twenty years.[39]

4.4 SUBDIVISION PROCESS

4.4.1 Subdivision proposal plan/Development application

The subdivision proposal plan in almost all cases is prepared by a surveyor at the request of the land owner /developer. This plan contains lot size and contours of the proposed subdivision site. In many cases the design is based strictly on economic return for the land owner/developer and based on the principle of 'maximum profit with minimum outlay'.

It is generally regarded as a preliminary proposal (ambit claim) in order to obtain a response from the Council as to further direction on the subdivision process. Some proposals are rejected at this stage and the development application is recommended for withdrawal in order to stop the applicant incurring expense when the application is subsequently refused. At this stage the proposal plan is effectively being used to gain a yes or no answer from the Council. In some cases consultation occurs and a re-design of the subdivision can be negotiated in order to further the objectives of the RMPS. At the very least the proposal must meet the zoning requirements of the planning scheme or the proposal would not be considered at all.

The role of the professionals in this process are varied, dependent on whom they represent. On the Council side planners are attempting to guide development to further the objectives of the RMPS. The developer, frequently represented by a surveyor on the other hand is trying to make a profit and often not concerned about the objectives of the RMPS. In many cases the Council suggests alternatives to make the subdivision layout further the objectives of the RMPS.

This situation implies that many developers through their representative are not receiving the adequate advice which would assist in streamlining the process. The adversarial role would also be diminished and planning not seen as a hurdle but rather a community safeguard. The inertia and mind set of the development

[39] Hogue, S. *Future Urban Development and Infrastructure Provision in Greater Hobart,* Department of Environment and Land Management, p. 10, 1996.

industry has not caught up with current legislation or economic climate.

4.4.2 Development application process

Once a firm subdivision proposal has been reached, the proposal becomes a formal development application which is assessed under the provisions of a planning scheme. Under the LUPAA, subdivision is covered by the definition of development[40]. Subdivision also has subject to provisions within the LOGBUMP. The basic requirement, besides zoning for subdivision, is minimum lot size. It is difficult to meet sustainable development objectives when minimum lot size is given as the basis for approving a land subdivision.

Dependent on which planning scheme the subdivision is assessed under, it may be discretionary or permitted. In the case of discretionary development, public comment is invited, which in turn allows representors a third party right of appeal at the Resource Management and Planning Appeal Tribunal.

If a subdivision is a permitted development then Council is bound to approve the subdivision with or with out conditions on the planning permit. If the case is appealed, the Resource Management and Planning Appeal Tribunal can permit the subdivision with the original conditions or add their own conditions and in some cases reject the planning permit completely.

S. 20 1(a) of the LUPAA stipulates that the objectives of the RMPS must seek to be furthered by a planning scheme. This ambiguous clause is the only reference to sustainable development being incorporated in planning schemes.

This raises the following questions:-

- which objectives are furthered;
- how far are they furthered;
- how are they furthered; and
- who judges if they are being furthered enough?

Clearly any planning scheme could meet this provision technically, but practically have no effect on sustainable development. The goal

[40] See Appendix A

of sustainable development is clearly stated yet no guide on how to meet the objective.

The development appraisal planner, who may have no background in resource management is required to assess the proposal with input from various professional sources such as cultural heritage professionals, traffic, hydraulic and road engineers. The current development appraisal planners at the Hobart City Council have tertiary qualifications such as economics, arts, geography, science, surveying and environmental design.

In many engineering works, any development can be accomplished, with the governing factor being the amount of money required to accomplish the works. Stormwater and sewerage connection decisions are based on the technical difficulties and cost of connecting into the existing network.

Road construction may meet the relevant engineering standards, yet little or no consideration is given by road engineers for aesthetics, stormwater run-off and the amount of cut and fill required to build the roads/streets access. A similar consideration of stormwater issues can also be taken, pipe sizes water flows are all technical calculations yet the impact of the water flow down stream in many cases is not considered. The road construction shown in the case study of Tolmans Hill estate highlights this concern.

S. 48 of the LUPAA stipulates that a planning authority must enforce the observance of the planning scheme for all use or development whether by itself or any other party. Coupled with s. 20 clause 1(a) of the LUPAA the planning authority must seek to further the objectives of the RMPS in all its use or development. Therefore any decisions regarding use or development in the planning area should further the objectives of the LUPAA.

An aspect which is not considered in many development cases is the significance/existence of Aboriginal cultural heritage. This is covered under the *Aboriginal Relics Act 1975* and at present is vague and difficult to enforce. This legislation is currently under review, however should still be taken into account when assessing subdivisions.

A glaring aspect of the current development application process is the lack of a social impact investigation of the development, both in the immediate area and the wider community. Surely, if people are intended to reside in an area, a social planner should have some involvement in the requirements of the subdivision. The social/community aspect of subdivision is not addressed in the present approval process, yet residents are the fundamental ingredient.

The issue of water connection is often another engineering problem which can be solved by money. In some cases, the land owner/developer may have to privately negotiate with the Hobart Water for water supply. This was the case with Tolmans Hill estate, where the developer funded a reticulation reservoir on the estate. Many of the constraints which impede subdivision are engineering issues which are readily solved by capital which are then passed onto the community and the lot purchaser.

4.4.3 Services

Service provision such as Telstra and Aurora are also engineering problems which can be solved by money, yet the outcome is not governed by sustainable development objectives. Both these services require significant earth works to be installed and both are covered by separate legislation regarding the installation of infrastructure. Basically these services can be provided, however the cost to the environment and community is not taken into account.

4.4.4 Local Government

On most occasions land subdivision decisions are made by the elected officials. In the Hobart City local government area any land subdivision over two thousand square metres is dealt with by Council. These elected community representatives receive the Development Appraisal Planners professional report on the merit of the proposal. These elected officials who have their own political and religious affiliations are subjected to influence from lobby groups, developers, and other interest groups etc.

In an attempt to be seen as encouraging development and not anti-development, many of these proposals receive a favourable response which can be at odds with the Council officers report. The elected

officials, while seen to be having the communities best interests at heart are political figures and their political re-election is a consideration in any decision. This process where a professional opinion is sought and can be disregarded due to interest group pressure clearly does not lead to consistent or sound decisions.

4.4.5 Resource Management Planning and Appeal Tribunal

The Tribunal makes judgements on land subdivision proposals if a representor takes the case to an appeal. The Tribunal makes a decision based on evidence submitted and given in cross examination. Much of our law system is based on precedence which is transferred into similar cases.

Although not directly related to the Resource Planning and Appeal Tribunal, this extract gives an insight into contemporary attitudes in the statutory planning bodies. The Land Use Planning Review Panel is now known as the Resource Planning and Development Commission and is a separate body to the Resource Management and Planning Appeal Tribunal.

A case involving s. 43 of the LUPAA which combined a 66 lot land subdivision and rezoning at South Arm was heard by the then Land Use Planning Review Panel in 12 July 1995. An extract from the hearing follows;

> *"Insufficient demand is not a reason against allowing the proposed amendments. If it is true that there is no further demand for the lots, that will simply mean a lesser degree of development and a lesser degree of demand upon the services and the like, than has been envisaged. Those matters will not be disadvantageous in any relevant planning context, although they will of course be significant to the owner of the area which it was intended be sold for subdivision."*[41]

This type of statement is indicative of attitudes towards land subdivision. This narrow view of the subdivision process where only the land owner is disadvantaged is far from true. These type of statements also re-enforce community attitudes that land subdivision can be driven by the developer.

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[41] Department Environment and Land Management, *Planning Note No. 9*, Land Use and Planning Review Panel, 1996.

An interpretation of this quote effectively states that the past Panel did not take into account the amount of subdivided land currently available and on the market. It is disappointing that a statutory body charged with making decisions based on sustainable development objectives has this attitude.

Resource Management and Planning Appeal Tribunal decisions can only be appealed to the Supreme Court on a point of law. The difficulty lies within the actual planning schemes when cases are taken to the Tribunal as in many cases lawyers become involved. The involvement of lawyers results in literal interpretations of planning scheme provisions and often the intent of provisions becomes a secondary concern.

In some cases legal argument can override the basic fundamental principles of cases, especially if the appeal becomes political and attracts media attention.

4.4.6 Existing Land Titles

The pattern of the present day subdivisions are in many cases based around the boundaries of early land grants. The legacy of these ad-hoc land grant boundaries works against sustainable development in some cases. This is especially the case when early land titles were granted to the centre line of water courses or low water mark.

The practice of cadastral boundaries bearing no resemblance to natural boundaries is problem and will remain so in natural resource management. It may be possible to have natural resource management overlays which cut across the cadastre, however administration is not simple. An overlay would effectively be a de-facto 'zone' boundary which controlled development.

4.5 SUMMARY

This section has detailed the history of subdivision in Tasmania and how community attitudes have evolved in relation to land consumption. It has been shown that Tasmania has a declining population and housing occupancy rates, yet a chronic oversupply of subdivided land with the trend continuing to subdivide even more land.

The subdivision process was detailed in regard to how there are no links between the sustainable development objective of the LUPAA and the present process. The development application process is seen by many as a hurdle or barrier to development. When an application is assessed, many of the major decisions are made by decision makers whom have no regard for sustainable development. The case study showed this in many of the engineering works, road construction and stormwater outlets, etc.

Regardless of Council officer recommendations, elected officials many with little or no resource management knowledge make decisions which burden future generations for all the 'right' reasons at the time. Elected local government officials operate under a short time span and can be subjected to lobbying from vested interests, which casts doubt over the logic of some decisions.

The Resource Management and Planning Appeal Tribunal are subject to legal arguments on the literal interpretation of planning schemes. Many planning schemes are mute on resource management, and in many cases land subdivision is governed by outdated zoning controls.

5 CASE STUDY

5.1 INTRODUCTION

This section of the project will evaluate a land subdivision case study, at Tolmans Hill, Hobart. The discussion will give an outline of the history and current situation of the subdivision. An evaluation of the subdivision will be undertaken against the sustainable development objective of the LUPAA.

5.2 CHRONOLOGY OF KEY EVENTS OF TOLMANS HILL ESTATE

The initial discussion regarding land subdivision at Tolmans Hill was held with the Hobart City Council on 18th December 1986. This was a preliminary discussion to scope out Council requirements and statutory responsibilities of the developer. The responsibility for subdivision approval was primarily vested in Council's Surveying Section. On 29th May 1989 (eighteen months later) Council considered a sketch plan, under s.464(29) of the then *Local Government Act 1962* for the proposed subdivision. The subdivision was approved by the then Town and Country Planning Commission on the 17th May 1991. It was approximately one month later on 27th June 1989, that Council recommended approval of the subdivision in principle.

Approximately eighteen months later on the 20th December 1990, a submission was made to Council to stage the subdivision in twenty nine stages which was subsequently approved. Some six months later on 11th June 1991 Council formally approved a proposal plan for a four hundred and twenty one lot estate with twenty one conditions of approval. The time period from which the initial approach to the Council was made until planning approval, was approximately three and a half years.

Between 11th June 1991 and 16th December 1996, discussions were being held between Council, Hobart Regional Water Board and the developer over water supply issues. The developer agreed to fund a pumping station, bulk supply main and reticulation storage. During this period, various reports were compiled on public open space, landscape assessment and geo-technical issues for the estate. On the 16th December 1996, Stage One of the subdivision was ready for the

plans to be sealed by Council, so that individual titles could be marketed.

As the result a legal technicality brought about by a change in legislation, approval was given for the staging of Tolmans Hill estate under the *Local Government (Subdivision Approval Validation) Act 1995* on the 18th December 1995. Concurrently Council signed an agreement pursuant to Part Five of the LUPAA with the developer to enter into a Local Area Plan for the estate. See Section 5.2.1 for details of Local Area Plan.

The 1995 Local Area Plan was designed for the complete four hundred and twenty one lot estate, and was considered broad and non-specific. Council then required a Local Area Plan specifically for stage one of the subdivision to address site specific issues. The current requirement from Council is a new Local Area Plan for each stage.

This chronology raises several significant issues regarding the approval process:-

1. This subdivision had been approved by the Hobart City Council yet no research into the geo-technical capability, bushfire risk, present flora and fauna and cultural heritage values of the area had been undertaken.
2. A State Government body (the then Town and Country Planning Commission) also approved the subdivision based on a proposal plan and no other information.

5.2.1 Local Area Plans

The Local Area Plans were implemented to ensure the terms of the original conditions on the planning permit were met. The Local Area Plans address issues such as vegetation retention and visual aesthetics of the subdivision. The Local Area Plans allowed Council to implement some sustainable development objectives.

At present, there are two Local Area Plans for the two developed stages of the estate. These Local Area Plans contain provisions which guide dwelling construction on the estate.

The provisions contain controls for: -

1. Extent of bushland clearance on lots;
2. Height of houses;
3. Colours of house and roofs;
4. Minor works (fences, hedges, etc);
5. Plot ratio;
6. Types of dwellings;
7. Boundary setbacks; and
8. Parking requirements.

The City of Hobart Planning Scheme 1982 has legal precedence over the Local Area Plans. These provisions are designed to minimise the visual impact of dwellings while maintaining the bushland setting and character of the estate. The Local Area Plan generally seek to address some environmental issues along with visual aesthetics concerns.

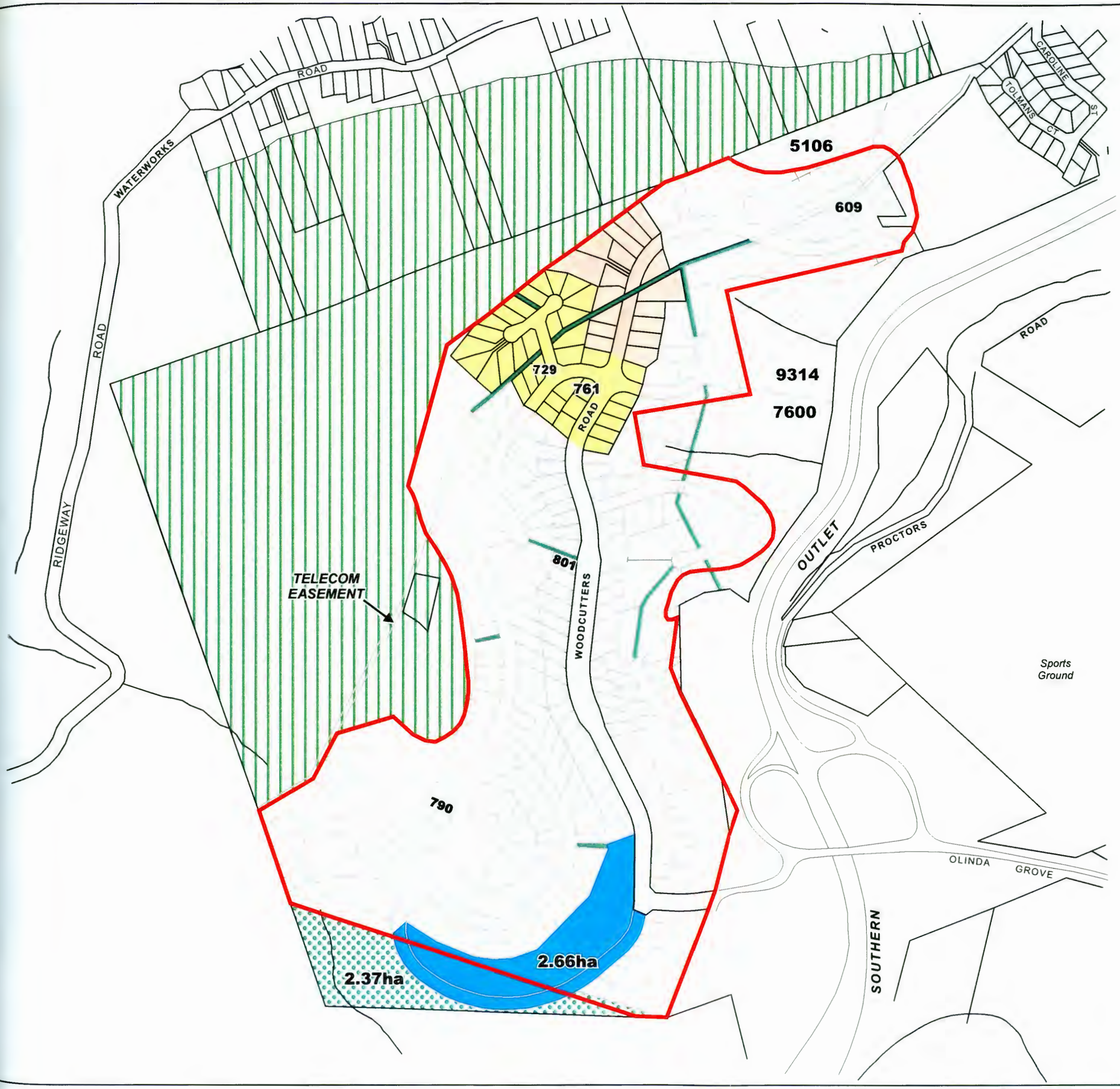
The Local Area Plans are an example of an attempt to retro-fit an existing subdivision to achieve sustainable development objectives.

5.3 PRESENT SITUATION

On the 7th April 1999 there were 10 single detached dwellings built, and three under construction in Stage One of Tolmans Hill estate. Stage Two of the estate is currently being marketed and has two single detached dwellings under construction. See ***Figure 2*** for details of completed stages. The dwellings are constructed on the far northern section of the subdivision which required a road (approximately 2 kilometres) to be constructed at Stage One of the subdivision. It is common practice in land subdivision to market lots which require minimal road construction, and as lots are sold in various stages extend the roads with the proceeds of prior land sales to further stages.

Access to Tolmans Hill is gained at a single entry point which is reached by either the Southern Outlet, or Olinda Grove. Tolmans Hill estate entrance is located approximately 4.6 kilometres via Davey Street and the Southern Outlet from the Hobart GPO, yet by its location and access somewhat isolated. See ***Figure 3*** for location plan, ***Figure 4*** for entrance and ***Figure 30*** for aerial photograph.

CASE STUDY AREA
TOLMANS HILL ESTATE



Public Open Space

Commercial Area

Pedestrian Linkage

Subdivision Stage 1

Subdivision Stage 2

Future Subdivision

Sample Lot Area (m^2) **5106**

'Hills Face' Zone

Boundary of Residential 2 Zone (Reserved Residential Area)

N

0 100 200 300

metres

Figure 2

N

0 500 1000

metres

LOCATION OF CASE STUDY AREA

(Date of Photography Jan 1997)

Figure 3

Aerial photograph supplied by Department of Primary Industries, Water and Environment

Figure 4: Entrance to Tolmans Hill Estate

CASE STUDY AREA

TOLMANS HILL ESTATE

(following bushfire)

Site extents

Access

N

0 100 200 300

metres

Date of Photography - Feb. 1998
(for bushfire assessment purposes)

Figure 30

Aerial photograph supplied by Department of Primary Industries, Water and Environment

5.4 EVALUATION

Some of the evaluation is based on probable results. Due to the inter-relatedness of the three major issues of sustainable development, many of the issues fall into several categories and overlap. For example, bushland retention has a direct impact of the provision of open space: both an environmental issue and social issue.

The 'Tasmanian Code for Residential Development' (TASCORD) is used as a theoretical background for the evaluation.[42] TASCORD provides this evaluation with professionally accepted theory that these issues are required to be addressed in residential subdivision. TASCORD was adapted from the 'Australian Model Code for Residential Development' (AMCORD) to suit Tasmanian conditions.

5.5 SOCIAL EVALUATION

Extract from the LUPAA definition of sustainable development.

"...enables people and communities to provide for their social, economic and cultural well-being and for their health and safety..."

5.5.1 Accessibility

Due to the relative isolation and lack of public transport servicing this subdivision, most families in the estate will be forced to own two cars. This is especially the case in a family with young children, who quite often have emergencies at the most inopportune times and a second vehicle will be required. In many cases the female member of the family is responsible for child raising, therefore a feeling of isolation will be felt by a greater number of females. Services or needs of the residents are not catered for in this estate at present, thereby necessitating vehicular travel to shops, doctors, public phones, recreation facilities, schools, support groups for parents and access to government services.

5.5.2 Sense of Community

The estate is essentially a dormitory suburb. The estate does not have a community centre or meeting place to engender or gain a sense of community. Residents will have to travel outside the estate to engage in any social activity. The subdivision plan has little or no

[42] Department of Environment and Land Management, *Tasmanian Code for Residential Development* (TASCORD), Printing Authority of Tasmania, 1997.

attention to the social aspect of the Tolmans Hill community, with the Local Area Plans being mute on the community aspect of the development. There are no plans for a focal point for social interaction in the subdivision, or to provide a community identity.

The estate has provision for a commercial area located in a disused quarry, which could be used for the provision of a community centre. See ***Figure 2*** for commercial area location and ***Figure 5*** for current on site conditions.

The subdivision design does not make allowances for diversity in cultures and values as the majority of the lots are designed for single detached dwellings. The lot areas range from 569 square metres to 8563 square metres, with an average lot area of 800 - 900 square metres. The larger than the average size lots are a result of both their location and topography constraints.

This design does not engender diversity in culture or built form, which is an integral part of the environment. The predominantly small lot areas are intended to appeal to the mass Australian market, and encourages 'more of the same'. This design has many characteristics similar with many broadacre traditional 1950's type subdivisions.[lot size, cul-de-sacs, road system, public open space provision, etc]

5.5.3 Future Needs and Social facilities

Depending on the future demographics of the estate, there may be a need for both youth and aged facilities. The original 1995 Local Area Plan refers to the pedestrian links within the subdivision as recreation opportunities. These pedestrian links will be complemented by 'recreational incidents' which consist of a seat and an area of low ground cover, throughout the subdivision at one per stage.[43] Currently no seats or recreational incidents have been provided.

There are 21 stages in the subdivision which is intended to take 20-50 years to fill, creating 21 'recreational incidents' for the community over this relatively long time period.[44] These recreational incidents would not be suitable or adequate for the ball

[43] Gulson, L. *Crestwood Local Area Plan*, Hobart City Council, 1995.
[44] ibid., p. 13.

Figure 5: Commercial area
Note: This is the commercial area (disused quarry) of the estate, which is situated adjacent to the public open space

games and do not appear on the subdivision plan. At this stage the only formally landscaped areas in the estate are shown in ***Figure 6***. There is an absence of areas were residents can 'accidentally' meet to have social contact and make acquaintances, such as some type of 'neutral territory'. These type of social areas also serve a useful role as passive surveillance for the residences. The majority of public open space in the estate is public roads.

The street network does not provide an incentive for residents to move within the estate, except by vehicle. The street system does not provide legible links which direct people to a focal point. This street system is designed solely for vehicles.

From a social point of view the road network is vital in creating and encouraging social interaction, it is unlikely that residents are likely to meet on a four lane carriage way which is the main route into the estate. The estate road system is car based and encourages vehicle dependence. There are no visual links for pedestrians within the estate, only lot access for vehicles.

5.5.3 Public Open Space

Public open space has not been a major consideration in this subdivision. 'Token' public open space has been provided in the estate yet its location is far from ideal to encourage social interaction. This is due to the location, aspect and topography. See ***Figure 2*** for details of area designated to public open space. Ideally, this public open space needed to be distributed throughout the subdivision where it could be utilised by all residents. The management and maintenance of the public open space is another issue which will need resolving in the future.

The provision of public open space in the estate is not ideal and is argued that this land has far lower value compared to other areas of the estate. The public open space although within the cadastral boundary of the estate is not residential zoned land. It could not have been subdivided as residential land making it the land with lower value in the estate. Therefore an economic decision governed the location of the public open space.

Almost certainly the streets were designed first in the estate then lot layout, with little attention to public space. Streets form a significant part of public open space and these area should be

Figure 6: Landscaping

Note: Landscaping provided by developer. Note soil erosion from dwelling construction on footpath upslope and unstabilised cuts. This eroded soil will ultimately be deposited in the Derwent River

'people friendly' as opposed to the vehicle based estate. It is in the developers best interests design a socially friendly estate to assist in the marketing of the lots.

5.5.4 Cultural and Heritage Values

The cultural and heritage values of the site were not assessed, and any information was supplied by the developer.[45] Tolmans Hill has been used as a wood harvesting area for a wood supplier[Tolman] for the Cascade Brewery in the early 1990's.[46] Areas of the estate have been used for cattle grazing, as early photos of the site show pasture.

The area can be valued by different sections of the community for many reasons should have been considered.
Some of these values are:-

- A long association and connection with the area;
- European heritage (cultural and recreational);
- Aboriginal heritage; and
- Community association with the area.

Values are not quantitative, subjective and in some cases emotive.

Aboriginal heritage is one aspect of the development which was not considered. It is almost certain that Aboriginals existed in the area, or had some connection to the area. This connection is difficult to establish, however a study should have investigated evidence of aboriginal artefacts or settlement.

The *Aboriginal Relics Act 1975* is the statutory legislation which seeks to protect aboriginal heritage in Tasmania. However, if no Aboriginal heritage investigation was undertaken, then no relics or sites can be protected and if present will be lost. In this present era of Aboriginal re-conciliation, a study should have been undertaken to determine the existence of any protected sites or relics on the estate.

If any Aboriginal relics or sites had been discovered, it does not automatically mean the site cannot be developed. In many cases Aboriginal sites are managed, for example if a site had been

[45] ibid., p. 14.
[46] ibid., p. 14.

discovered then it could have been incorporated in an open space area for bushland retention. It is generally the case that aboriginal sites are not well publicised as to protect them from degradation by the public, due in many cases to these sites' fragile nature.

What this means in the broader re-conciliation context is that Europeans acknowledge, and respect Aboriginal occupation and their connection to the land. This total disregard for the Aboriginal heritage in the subdivision process of Tolmans Hill estate re-enforces the European concept that land is a commodity.

5.5.5 Recreation Trails

There are several linkages to the external bushland in the estate design which could be considered recreation trails. Several internal linkages exist within the estate on service easements between lots. These are not incorporated into any integrated recreation trail network or recreation spaces. See ***Figure 2*** for details of pedestrian linkages.

5.6 ECONOMIC EVALUATION

The economic evaluation is divided into two distinct sections:-

- Economic Activity
  The need for development to create employment and generate income is the basis of our Western capitalist market driven economy. This economic activity has a short term outlook occurring at the initial stages of the subdivision and effects a relatively small number of people, for example, the developer, civil contractors, lawyers, real estate agents, etc.

- Intergenerational Equity
  This section is concerned with the long term consequences and ongoing costs of the subdivision which will be passed onto the present and future rate payers of the local government area.

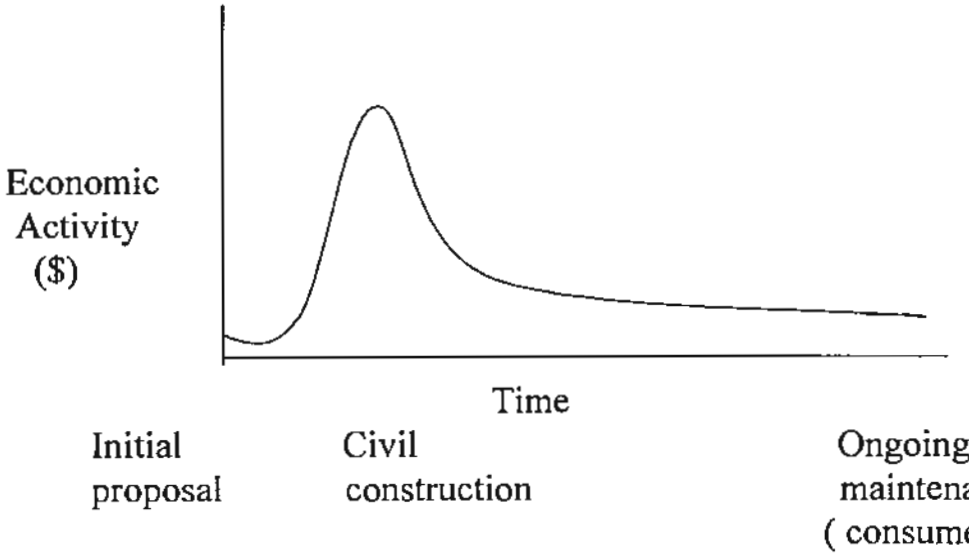


Figure 7. Economic activity versus time.
Source: Author
The height of the peak of this graph is dependent upon the time period required to fully develop the subdivision.

Profit is a primary driving force for development in the market economy and in many cases sets the agenda for development, regardless of the social and environmental costs. In alternative State run economies, where profit is supposedly not the driving force, sustainable development has not occurred. The environmental records of China and Russia (while a communist State) has not been exemplary. The nuclear disaster at Chernobyl in 1986 is an example. Regardless of which type of economy development occurs it may not be sustainable.

5.6.1 Economic Activity

It is recognised that the generation of income and profit from business activities is the basis of the Western capitalist economy, however any negative consequences from business activities must be minimised. Bankruptcy for example is a negative consequence of business activity. A basic fundamental principle of sustainable development is the connectivity of the three major issues, therefore the economics of a development cannot be allowed to dictate or overshadow a development.

In the case of providing employment and consequently economic development the initial civil construction work partly fulfils the

objective of sustainable development. However due to the connectivity of the three issues this is not a valid reason for allowing to development to proceed. There is also ongoing employment activity generated during the development stages of the subdivision, however, once all lots are sold and major civil works are completed the infrastructure maintenance and ownership is then passed over to Council.

The economic activity in the initial stages is relatively large compared to the later final stages, however this development is funded by the developer and any profits or losses from the subdivision are directed towards the developer. The economic activity after completion is relatively minimal being primarily a care and maintenance function. General maintenance and ongoing repairs to the dwellings in the estate generates consumer economic activity.

Economic activity alone does not meet the objective of sustainable development and cannot be considered in isolation of social and environmental issues.

5.6.2 Economic Intergenerational Equity

Sustainable development incorporates the concept of the obligation of the present generation not to limit the options available to future generations through the over exploitation of the earth's resources and the environment.[47]

It has been documented that a lot costs $21,000[48] which is a combination of physical and social infrastructure costs. These costs relate to the development connecting to existing utilities, roads, drainage etc and the need for the development to utilise child care facilities, health services and other social services which are required by the residents of any subdivision.

As each lot connects to the existing sewerage treatment system, there will come a point when the system cannot cope with the increased load and a new or upgraded system is required. A decision will need to be made to outlay capital to fund the required

[47] Department of Environment and Land Management, *State of the Environment Report, Volume 1 Conditions and Trends*, Printing Authority of Tasmania, Section 5.43,1996.
[48] Hogue, S. *Future Urban Development and Infrastructure Provision in Greater Hobart*, Department of Environment and Land Management, p. 19, 1996.

infrastructure upgrading. It is the issue of 'who' pays for the funding which does not comply with the notion of intergenerational equity. Quite clearly, it will not be the developer who sold the original lots nor the residents of the estate who will be required to fund the new sewerage works.

It is not equitable that a developer can profit from connecting to existing infrastructure, funded by the community as a whole. The whole community is subsidising subdivision which in turn results in developer profit.

It is a complex issue to reach a satisfactory solution as many past subdividers have not contributed to infrastructure provision beyond the boundaries of their lots. A point in time will arrive when developer contributions will be demanded by local government in Tasmania. A decision made in the past not to require developer contributions towards infrastructure provision should not be allowed to burden future communities.

The situation exists in the case study of Tolmans Hill Estate where the developer has funded the water supply to the subdivision, however there have been no other charges to connect to the existing stormwater road and sewerage systems. In the future when these systems are operating at or near capacity and requiring an upgrade, it will be the general community which is forced to fund the upgrade, not the developer whose subdivision was instrumental in the systems reaching their capacities.

While this subdivision creates economic development, a major portion of the profit is directed to the subdivider at the expense of the community both present and future.

5.7 *ENVIRONMENTAL EVALUATION*

Sustainable development is based on the safe guarding of the environment and avoiding any adverse effects on the environment. Whatever activity humans undertake some effect will take place on the environment.

The subdivision of Tolmans Hills required civil construction works for road construction and service provision in the first instance. Generally most of the environmental damage occurs at the initial civil construction stages of subdivision as most bulk excavation occurs at

this stage, although some excavation occurs during dwelling construction.

5.7.1 Erosion and Sedimentation/Hydrology

Erosion and sedimentation are linked together by the action of water. Any development will result in a change in the natural hydrological cycle of the area. This change is to sub-surface and surface water flows which affects the water table, due to the removal of water from the soil profile. The skeletal soils in Tolmans Hill are relatively impermeable which results in a high rain fall run off rate.[49]

The civil construction works, of almost all subdivisions, require essential services to be installed underground. This requires significant earthworks to lay underground pipes and cables which in turn causes a disruption to the immediate natural environment. This type of soil disruption is a ready made seed bed for exotic weeds or the proliferation of existing weed communities in the area. See Section 5.7.2 for discussion on weeds.

Soil compaction occurs as earthmoving equipment travels over soil which again reduces rain fall infiltration, increasing downstream water flows and peak storm flows.

There are guidelines for erosion control on dwelling construction, however civil construction guidelines are technical and difficult to relay to machine operators. The issue of enforcement of these guidelines and remedying adverse effects is a complex problem. Once the top soil has been removed (most probably down slope by water action) it almost impossible to re-instate it in the original location. See ***Figure 8*** for an example of soil erosion at dwelling construction stage. See ***Figures 9 - 13*** for examples of erosion and sedimentation at the civil construction stage.

The Tolmans Hill subdivision has a 2.6 kilometres long access way which is two lanes [25 m wide] which turns into a four lane carriage way[35m wide] as its major access way. This required a 3 - 4 metre bench to be excavated out of the regolith. See ***Figures 14 & 15*** for details. This bench has the effect of collecting all the sub surface

[49] Personal communication S. Ashton, Environmental Development Planner, Hobart City Council.

Figure 8: Building site

Note: Soil erosion occurring during dwelling construction. Note also the removal of existing bushland vegetation. The effectiveness of the Local Area Plan in the retention of bushland vegetation is evident on this site

Figure 9: Soil erosion in cut on carriageway.

Note: This site has significant rill erosion problems. The bank is retreating up-slope and rocks are remaining after soil has been removed by water action. None of the sites shown in Figures 13, 14 and 15 have any form of vegetation to retain and stabilise the exposed topsoil.

Figure 10: Catchment area for cul-de-sac crossovers

Figure 11: Street design

Note: Two kerb crossovers with silt build-up. Figure 10 shows the design of the street which is the catchment area for this cul-de-sac. In the event of heavy rainfall the two dwellings downslope of these crossovers may be flooded. The run-off water will most probably rise over the crossovers. The existing silt in the gutter is evidence that water has been flowing in that area. This problem will be exacerbated if the stormwater inlet becomes blocked.

Figure 12: Service provision
Note Unsympathetic service provision with a high degree of visual impact An excellent seed bed for weeds and source of soil for wind erosion

Figure 13: Access provision
Note A significant portion of the lot area is taken up by access provision. This provision removes existing bushland and is a source of soil erosion through wind and water action

Figure 14: Carriageway into Tolmans Hill facing south
Note: Dual carriageway is to be completed when 150 dwellings are constructed. This carriage way is not expected to be fully utilised to capacity and is an example of over-engineering

Figure 15: Depth of cut of carriageway
Note: Pampas grass has established in swale drains which are silting up due to soil sedimentation. Note depth of topsoil in relation to bedrock.

drainage and overland water flow concentrating to a pipe. Refer to ***Figure 18*** for details. See ***Figure 19*** for catchment area of bench. The concentration of the point source of the water has the effect of converging the water flow of a large area into a high energy flow which is carrying a significant sediment load. This high energy flow carries both a high sediment load containing nutrients and pollutants. These nutrients and pollutants are a by-products of development, for example hydro-carbons from vehicles, animal[dog] faeces, garden fertilisers, herbicides used in weed control, etc.

The concentration of this water into a point source and directing into natural gullies will change the nature of the present gully ecosystem. The present flora will not be able to cope with the increase in moisture and nutrients the run-off water carries.

The ultimate end for the erosion and pollutants is the Derwent River, which has a long history of this problem, for example New Town Bay. See ***Figures 16 & 17*** for evidence of erosion and sedimentation.

5.7.2 Weeds

Weed infestation is greatly enhanced when soil is disturbed. Tolmans Hills is no exception, there are existing infestations of *Ulex europaeus* (Gorse) in the area which indicate that the soil in the area has been disturbed in the past. The earthworks associated with the service provision has provided the necessary soil disturbance for the Gorse to establish and spread. See ***Figures 20 - 24***. Infestations of *Erica lusitanica* (Spanish Heath) are also present, which will invade bushland once disturbed.

Gorse has also spread along the road verges, which has been sprayed by a non-selective herbicide killing native vegetation regrowth. The responsibility for the weed control will rest with the Council as they are the legal owners of the road. The control of weeds does not have a management plan except the spraying with a supposedly harmless non-selective herbicide. This spraying practice may become unacceptable as community expectations evolve, such as the banning of DDT as a herbicide.

Figure 16: Sedimentation
Note: This site is the point source for the run-off water diverted by the carriageway bench cutting. Note the significant amount of deposited silt transported downslope by water. Refer to Figure 19 for modified catchment boundary for this pipe

Figure 17: Erosion
Note: This site is downslope of the pipe outlet shown in Figure 16. The concentrated, high- energy water flow is eroding topsoil

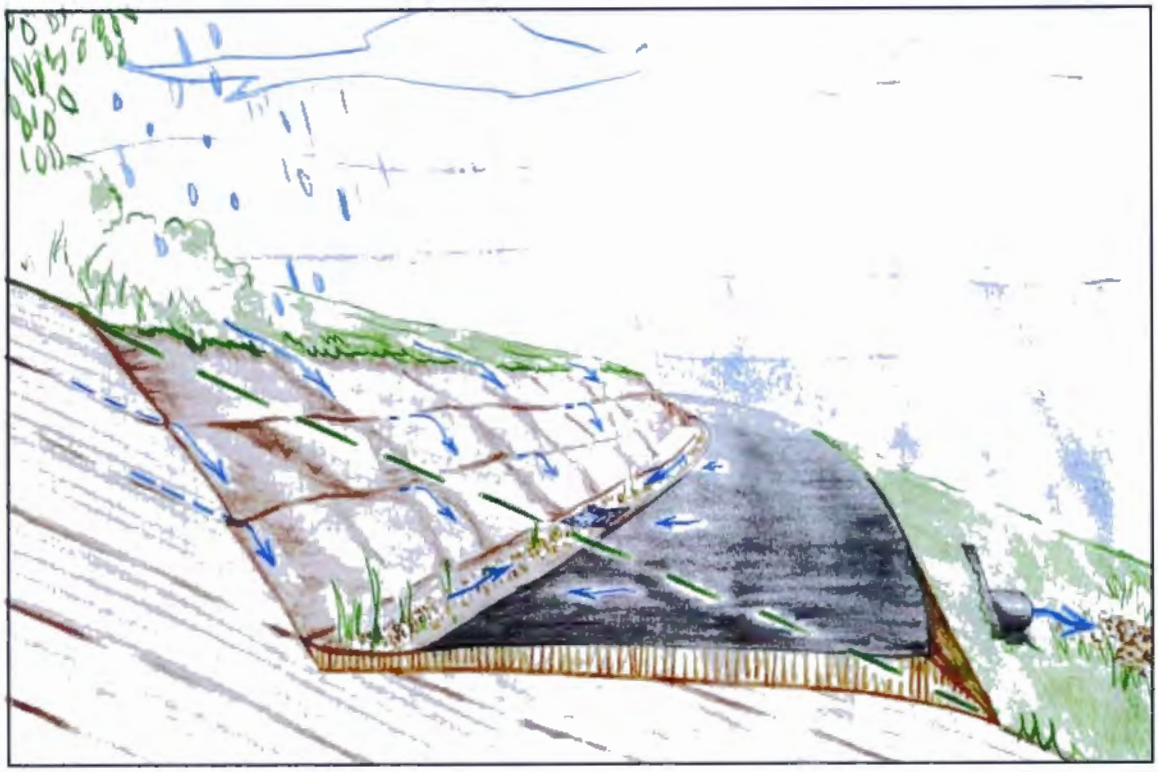


Figure 18: Cause and effect
Source: John Latham, Architect, Hobart City Council
Note: The sketch is a graphical consolidation of Figures 9, 14, 15, 16 & 22 depicting the action, direction and concentration of water flow over and through the soil

TOLMANS HILL ESTATE

MODIFIED CATCHMENT BOUNDARY

Catchment for stormwater outfall (Figure 5)

Location of stormwater outfall (Figure 5)

Future stages of subdivision

N

0 100 200 300

metres

Contour Interval: 5 metres
Date of Photography - Jan. 1997

Figure 19

Aerial photograph supplied by Hobart City Council

Figure 20: Weed control

Note: An attempt to control weeds on a lot access cutting near a service connection point. Note also soil erosion on unstabilised cut.

Figure 21: Weed control

***Note:** Gorse has been sprayed with non-selective herbicide also killing eucalyptus seedling. This type of weed control will need to be carried out until the weed seed bank in the soil is exhausted or permanent landscaping is undertaken.*

Figure 22: Weeds in swale drain on carriageway.
Note: Exotic weeds (pampas grass, introduced grasses) in swale drain, which as a result of further erosion and weed growth, will completely silt up drain. Note different soil profile and rill erosion of topsoil compared to Figure 9.

Figure 23: Service provision
Note: Service provision, which has been carried out without a high degree of both visual and environmental impact on the area. Gorse seedlings are established in disturbed soil.

Figure 24: Gorse on road verge

Note: Gorse has established in disturbed soil on roadside, which will eventually crowd out grasses and groundcover plants. The gorse will require spraying before it flowers and reseeds or the gorse control problem will be further exacerbated.

Figure 25: Garden waste dumping

Note: Garden waste spreads weeds into immediate bushland. Note also the significant existing eucalyptus trees in background which will have little chance of surviving when surrounded by residential dwellings.

There are also infestations of *Cortaderia* (Pampas grass) establishing in swale drains at Tolmans Hill estate. See ***Figures 22 & 15.*** Both Pampas Grass and Gorse are listed in the *Noxious Weeds Act 1964* as secondary weeds which makes the Hobart City Council and the State Government responsible for their control and eradication.

Garden waste has been dumped on the access road into the estate, which is a source of exotic weeds. See ***Figure 25*** This practice of roadside dumping is not confined to Tolmans Hill, although the road design does allow this dumping to be carried out with little chance of being apprehended. It is unlikely that the garden waste was dumped by a resident of the estate given the type of gardens present in the estate. However the environment will be degraded by the invasion of garden plants as they add to the already existing arsenal of exotic weeds present in the area.

The weed problem at Tolmans Hill is mainly a result of soil disturbance. The time period that is envisaged for this estate to be completed will result in significant weed infestations. The surrounding bushland perimeter will be under pressure from weeds due to edge effect of weed infestation. Twenty metres is the distance in the Mt Nelson area in which weeds have invaded bushland around the edges of development, and given the similarities with both areas it is highly probable this will occur at Tolmans Hill.[50]

Soil can be imported into the estate which may contain weeds from other areas. Only soil from within the estate should be utilised to contain the possibility of introducing more weeds, for example *Chrysanthemoides monilifera* (Boneseed). Pioneer plants[thistles, etc] have established along the road verges and swale drains.

5.7.3 Bushfire Hazard

The slope of terrain is a critical factor in assessing fire risk, as it determines the rate of spread, flame length and fire intensity. A slope of approximately 15 degrees (1:3.7) will have a forward spread rate of about three times faster than flat terrain.[51] There are a

[50] ibid.,

[51] Bushfire Management Planning Group, *Draft Guidelines for Development in Bushfire Prone Areas*, 1999.

wide range of slopes within the Tolmans Hill estate, with the average slope ranging between 10 - 25 degrees, with a significant area having a slope greater than 25 degrees. This fact alone should have dictated a subdivision design to incorporate fuel modified zones to reduce bushfire risk. The combination of a north facing slope, with relatively steep topography and fire encouraging vegetation, results in an area with a significant bushfire hazard. Due to evolutionary processes, the vegetation has become fire dependent and tolerant for reproduction, and in some cases encourages fire by the shedding of bark, therefore accumulating fuel on the ground. The topography of the estate also contributes to the fire risk due to the area being well drained.

The majority of the vegetation on the north face consists of stands of casuarinas. Ground cover plants, endemic grasses and fallen debris from vegetation provide a fuel ladder between the ground and tree canopies, which in turn increase the intensity of any bushfire. A fire will not run along the bush land floor but be encouraged into the tree canopies if left in its natural state. If the fuel ladder is removed by modifying the ground cover then crown fires cannot be sustained, subsequently minimising the fire risk.

The estate is generally north facing which exposes it to the predominate wind direction for the area. There is a high probability that a fire front would approach the estate from a northerly direction, however it is possible that a fire front could approach from another direction. The estate is surrounded by bush land on three sides providing a bushfire risk on three of the four flanks. See ***Figure 26*** for fire risk diagram.

The estate has a emergency fire retreat trail to Caroline Street, Dynnyrne in the event that normal access is blocked by fire. See ***Figure 26*** for details. While this emergency access is essential, several management issues
These issues are:-

- Long term maintenance of road access;
- Control of access(does it become a de facto road?);
- The access is a right of way over private land;
- What standard of road construction is required?; and
- When is it completed(it is not completed at this stage therefore how do current residents escape in a bushfire emergency?)

TOLMANS HILL ESTATE

BUSHFIRE RISK POTENTIAL

Highest fire risk direction

Moderate fire risk direction

Lowest fire risk direction

Dominant wind direction

Emergency fire access

Existing cadastral boundary

Proposed cadastral boundary

N

0 100 200 300

metres

Date of Photography - Jan. 1997

Figure 26

Aerial photograph supplied by Hobart City Council

Using current practices the surrounding bush land will be required to have regular fuel reduction burns to minimise the risk from bushfire. The issue of responsibility and management of the fuel reduction burns is an issue and a duty of care would exist for the adjacent landowners. There are management issues for fuel reduction burns which need to be resolved as many of the adjacent northern lots to the estate are separately owned. Who would bear the cost resulting from bushfire destruction which could have been prevented by a fuel reduction burn?

Under common law the Hobart City Council would have a duty to exercise reasonable care to ensure a fire risk is abated. There are two Acts which specifically allow for the abatement of nuisances (fire risks). These are covered in Part 12 - Special Powers, Division 6 - Nuisances of the *Local Government Act 1993*, and s.49 of the *Fire Service Act 1979*.

The latest research from the United States of America (USA) suggests that while large area fuel reduction burns reduce fire risk, a fire break is more efficient in preventing loss from fire. The USA experience has shown that a high intensity fire has less chance of igniting a building from a distance of 20 - 40m, as opposed to a low intensity fire contacting the building. This does mean that fuel reduction should not be carried out, but a emphasis on creating a fire break around dwellings is extremely beneficial to lowering the fire risk.

No bushfire hazard minimisation measures have been undertaken for the Tolmans Hill estate and to date no fire management plan for the area is in place. However the Local Area Plan has some provisions to alert residents of the requirement to modify the vegetation around their dwellings in order to minimise bushfire risk.

The Local Area Plan has a section devoted to building in bushfire prone areas in accordance with Australian Standards. Houses built in a bushfire prone area should be constructed in a manner that does not allow any embers or fire debris under the dwelling. Despite this, (and building on the bush interface) some houses are built on poles facing north which would serve as excellent traps for airborne embers and flaming ash. See ***Figure 29*** for house constructed on poles.

Figure 29: Service provision

Note: Visual scar left by service provision. The house in this photo is north facing to take advantage of the panoramic views to city It is built on poles which serve as an excellent trap for flaming airborne embers in the event of a bushfire. This area has the highest potential fire danger in the estate. Note also evidence of recent bushfire.

The developer provided a water reticulation system to the estate. The provision of water is critical in the event of fighting fire. In this respect the estate is adequately served by its own water reticulation system.

5.7.4 Visual Amenity

The developed section of the estate is the northern section which has panoramic views. This section is on a ridge and the dwellings are visible from many areas The development has the appearance of a small group of dwellings amongst a sea of vegetation which is incongruous and clashes with the natural bushland surroundings. See ***Figures 27 & 28***.

At this early stage of development with a relatively small number of dwellings, the impact upon the bushland vista is significant. It is difficult to imagine the entire hill covered in dwellings. It is highly probable that the hillside will be significantly devoid of vegetation if developed per the approved subdivision plan. If the existing trees are not removed during the dwelling construction stage then the change in hydrology and soil conditions will cause their slow death through dieback and other associated problems.

Given the relatively small lot size, it is almost impossible to reduce the visual impact of dwellings with vegetation screening. It would be easier to screen a dwelling with vegetation if the lot size were larger with a choice in dwelling placement on the lot, however this is not the case. See ***Figure 2*** for a random selection of lot areas.

The Stage Two Local Area Plan has provisions for bushland disturbance of a maximum of 50% of the lot area or 400 square metres whichever is the greatest. The area of disturbance while being a factor does not mention any significant trees to be retained. If the amount of bushland retained in the development of Stage One is repeated then this provision will have minimal success in screening the development. See ***Figures 34 & 35*** for examples of bushland retention.

At Tolmans Hill a twenty metre wide swath of bushland was cleared to install service connections prior to the lots being offered for sale in early 1997. This swath is extremely visible from many areas and will take several years for vegetation (native or introduced) to

Figure 27: View towards Tolmans Hill from Queens Domain
Note This photo shows backdrop of hills face in relation to city in foreground. This photo also shows large area of bushland on the northern face adjacent to houses.

Figure 28: View from Davey Street to Tolmans Hill
Note: When the estate is completed the entire face of the hill to the left of the existing houses will covered in dwellings

Figure 34: Fringe area subdivision (Fern Tree)
Note: An example of extremely unsympathetic vegetation clearance in a heavily vegetated area on a steep south-facing slope.

Figure 35: Low density bushland subdivision (Government Hills, Risdon Cove)
Note: In this photo six houses are built on or near the skyline.
Figures 34 and 35 are examples of bushland subdivision showing various vegetation retention regimes. Due to the retention of vegetation Figure 35 has less visual impact than Figure 34. Visual impact is only one aspect of the land shown in Figure 35 - this area has a northerly aspect with a high bushfire risk. The area also has a vegetation community (Eucalyptus Risdonii) which is of state significance and considered under threat.

conceal the scar left by the service provision earth works. See ***Figures 29 & 30.***

5.7.5 Flooding

Although Tolmans Hill is not a flood prone area, flooding is included in the evaluation. The estate development may cause flooding down slope as run-off is increased during heavy rain fall. Geographic Information Systems modelling has shown that much of Hobart's flooding is not as a result of development increasing rain fall run-off, but rather the natural topography.[52] Hobart has relatively a small developed urban and suburban area compared to the large undeveloped bush land catchment area. High rainfall occurs on and around Mt Wellington (undeveloped area) relative to the built up areas along the western shore of the Derwent River. Therefore any increase in development will have a minimal effect on flooding in the overall context. Flooding in Hobart would be greatly increased if development occurred in the undeveloped higher regions of the catchment areas near Mt. Wellington.

Although flooding may not be a major concern, the sediment load which is carried in storm flow waters is a significant problem. Therefore any reduction in storm flow of water can only have a positive effect down slope by reducing sedimentation.

5.7.6 Landslip

Any land with a slope over 15 degrees requires a geo-technical investigation under current City of Hobart planning guidelines. The complete Tolmans Hill estate had a geo-technical investigation, that identified areas, (although stable in a landslip context) that require localised investigation. The area is considered relatively stable with bedrock being near the soil surface.

There are no current limits or regulations relating to building on slopes, as building is primarily a engineering problem and can be solved by capital. Areas not ideal for dwelling construction at Tolmans Hill should have been integrated into habitat retention or public open space areas.

[52] Personal communication B. Ridder, Environmental Planner, Hobart City Council.

5.7.7 Fauna

It is probable that much of the existing native vegetation within the estate will be degraded or removed due to development. This will probably involve the removal of existing natural habitats for fauna, although possums may be the exception due to their adaptability to human settlement.

While there exists legislation for the protection of threatened species, in many cases the habitats of species is of greater importance. If the species habitat is reduced and degraded then the species ultimately becomes threatened. Any fauna which existed within the estate will be eventually forced out as development encroaches on the habitats. Isolated islands of vegetation are of little use to native fauna to exist in. Substantial corridors of vegetation are required to allow fauna movement and the continuing survival of vegetation.

The estate is surrounded on three sides by large bushland areas, which serve as excellent hunting grounds for cats which may belong to the residents. The impact of cats upon native fauna is well documented, and this estate represents another incursion into the bushland for fauna destruction. Control of cats is an emotive issue which is difficult and complex to resolve. Dogs may have a effect on the fauna, although it is highly probable cats will have a much greater impact upon the wildlife.

There are populations of Bennetts Wallaby present in the estate. They will be forced to relocate as their habitat is reduced.

5.7.8 Wildlife Corridors and Bushland Retention

An alternative design for the estate could have incorporated public open space into the design in order to preserve some environmental values, such as retaining wildlife habitats and providing wildlife corridors, etc. Public open space does not have to be manicured gardens/parks or lawns, it can be bushland which in many cases is less costly to maintain.

A case study[53] for small isolated bushland 'island' is as follows:-

"A small patch of bushland is left in a suburban subdivision as a requirement of the local council and seen to be doing the 'right thing' by preserving the natural bushland. It is a natural area and as such trees die naturally, which are, subsequently removed in an attempt to keep things tidy and in order, as opposed to the natural order. As time passes by, various occurrences take place such as:- rubbish may be dumped, an attempt to 'tidy the area up' by a local Landcare group or the area may be seen as an unacceptable for legal risk assessment reasons. Weed infestations occur, native vegetation becomes less viable, the public complain to the local authority. The once intact area is becoming degraded in aesthetics and scenic value and as maintenance costs increase the economic decision is made for all the 'right' reasons to turn the area into a lawn or park and the final death knell sounds for the island of native bush."

Bushland areas require a minimum area to be robust and remain viable in order to fend off disease and human impact. Small islands of vegetation are susceptible to weed infestation (due to edge effect), discourage plant diversity, reduce natural reproduction (due to no other seeds being deposited from surrounds), and eventually result in a weed infested area which requires continual maintenance. Along with the lower maintenance costs, the provision and retention of bushland would add aesthetic value to estate.

5.7.9 Solar Design

Solar design should be a factor in both dwelling and subdivision design. Ideally solar energy gain should be integrated into dwelling sites which in turn dictates lot design and consequently road layout. Unfortunately in many cases this does not occur due to road construction costs. Tolmans Hill estate in many cases has reasonable solar energy access due to the aspect and topography of the site. In this aspect the estate design is reasonable.

5.7.10 Wind Erosion

This type of erosion of soil is difficult to quantify, yet would occur given the exposed nature of the site. Wind erosion would act upon

[53] Adapted from; Edwards, G. *How To Destroy The Bush Without Really Trying*, Landscape Australia, February 1989.

the bare and un-vegetated soil areas of the estate especially during the initial construction stage.

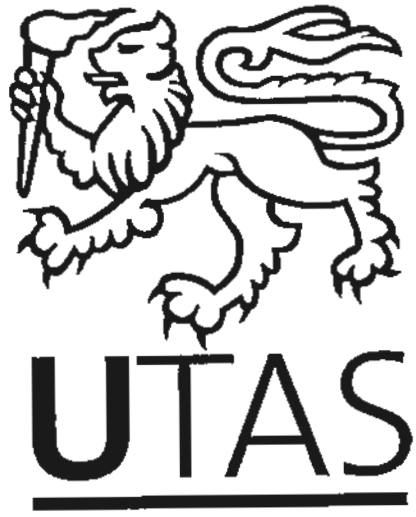
5.8 SUMMARY

The review has discussed the Tolmans Hill estate and detailed how the development measures up against the three major considerations of sustainable development. In a holistic sense, the development does not satisfy any of the three broad categories of evaluation.

The review has detailed how and why the estate will have a ongoing detrimental effect on the both the natural and built environment.

The economic evaluation has detailed how subdivision at large is not equitable in the intergenerational sense.

The social issues generated from this estate will largely depend on the socio-economics of the residents. The social mix of the estate will change over time and the lack of facilities and services will become a issue in the future.



6 SUMMARY

6.1 INTRODUCTION

This section will summarise the conclusions and results from the project to in order to form the basis for recommendations. This will form an executive summary of the results of the project and recommendations will be given in the following section.

6.2 SUMMARY OF SECTIONS

6.2.1 Section one

This section gave an outline of the project and the evaluation criteria. The reasons why land subdivision is considered crucial and fundamental to sustainable development.

6.2.2 Section two

This section detailed the history of sustainable development and why the concept evolved. This history was given in the international context, national context and finally the Tasmanian context. An outline of the circumstances of how the Tasmanian planning system adopted the principles of sustainable development.

Various definitions of sustainable development were discussed and the basic fundamentals of these definitions were also discussed. Sustainability and sustainable development were discussed and the difference was detailed.

6.2.3 Section three

This section gave an historical overview of land subdivision to detail why community attitudes exist towards land subdivision. It is after all the community which provides the demand for residential land.

The present over supply of residential land was detailed and projections based on population decline were detailed. The subdivision process at the local government level was outlined and issues raised which suggest why the present subdivision practices occur.

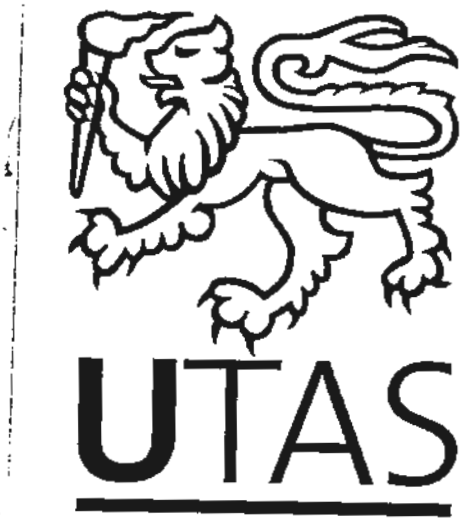
This section showed that although the RMPS exists with sustainable development as the objective no links exists within the whole

process. Often land subdivision decisions are made by elected officials with little resource management knowledge. The subdivision process is fragmented with little consideration for outcomes. The current process is not focussed on sustainable development objectives and in many cases driven by political and economic forces.

Although sustainable development may be the cornerstone of the RMPS sustainable development is not presently used to evaluate the outcomes of land subdivision. The most important factor being the outcome of the subdivision is often given little or no regard.

6.2.4 Section four

A case study was used to highlight aspects of present land subdivision practice. The case study evaluated the subdivision in terms of social, economic and environmental issues against current best practice for residential subdivision. This highlighted the fact that the present subdivision practice does not embrace sustainable development principles.



7 RECOMMENDATIONS

7.1 INTRODUCTION

There have been many issues which were discussed in the case study[Section 4] and the subdivision process[Section 3] which contravene the basic principles of sustainable development. This section will make recommendations to address some of these issues in an attempt to remedy the deficiencies of present practice.

7.2 DISCUSSION OF RECOMMENDATIONS

7.2.1 Environmental Issues

Solutions to many of the on site issues raised in the case study exist in TASCORD, yet are not being enforced. There are other issues which are not being addressed at an initial decision making level, ie should this subdivision happen. Once the decision has been made to subdivide then it is often too late to implement sustainable development principles. These recommendations are targeted at the macro level before this decision is made and local government along with the community is left to suffer the consequences.

7.2.3 Social Issues

Due to the inter-relatedness of the three main issues of sustainable development there should be a degree of social planning in land subdivision proposals, after all they are the site for a community to exist in. Currently this does not occur and many issues such as social justice and accessibility are not addressed. These issues are difficult to quantify and in the 'legal speak' of planning schemes impossible to define, yet they exist and are fundamental in a community.

7.2.3 Economic issues

In most cases the economic viability of the subdivision in relation to the developer has been well researched by the developer. It is usually the economic cost to the community which is not researched or even considered. The 'true' cost of subdivision is not passed on to the lot purchaser.

7.3 RECOMMENDATIONS

7.3.1 Development application process

The development application process needs to be altered to reflect the current goals of sustainable development. Developers and prospective applicants need to be informed of sustainable development in order to understand what information is required in their application. The development application form should be re-structured to request specific probable environmental and social impacts. In most cases the economics of the development are quantified otherwise the proposal would not be made.

Recommendation 1

Development applications need to address the goals of sustainable development by demonstrating how the development is sustainable. The application form will show how this development furthers the objective of sustainable development.

7.3.2 Assessment process

The assessment process requires specialist professionals to assess subdivisions and their impact. These professionals should be trained in the full ambit of sustainable development goals. It was discussed earlier where sustainable development requires a holistic approach to the final decision not based on vested interests, but the wider community. These personnel will need to form a multi disciplinary team with a sound understanding of the contemporary legislation.

Recommendation 2

Adequately qualified personnel are required who are able to assess development applications in accordance with sustainable development principles.

7.3.3 Development Approval Time Limit

As was the case at Tolmans Hill, where a development application was given which has a statutory time limit on commencement yet none on completion. This has the effect of locking in outdated development standards for the next fifty years (developers estimate of time for estate to be developed) for this development. This is grossly inadequate, and certainly not equitable for future generations.

Recommendation 3

A staged planning approval has a time limit for completion on the planning permit for the complete subdivision or stages. For example the developer has to re-apply for a planning permit after a nominal time period (3-5 years) for the subsequent stages.

7.3.4 Planning Scheme Provisions

Almost all current planning schemes rely upon zoning, density controls, minimum lot sizes, Statements of Desired Future Character for Precincts etc, for land subdivision control. These do not cover the issues required for the assessment of sustainable development. As a result of out dated planning schemes the community is having to endure the legacy of past.

Up until June 1999, there had been seven planning schemes which have been approved since the enactment of the LUPAA in 1993. The approved schemes were for the following areas:- Sullivans Cove, Meander Valley, King Island, Launceston, Northern Midlands, Sorell, Break O' Day and Dorset.[54]

Recommendation 4

All planning schemes are re-written to conform to the objectives of the RMPS within three years.

Recommendation 4A

All land subdivision is discretionary.

7.3.5 Public Open Space Legislation

The present legislation provides for public open space to be no more than 5% of the total area or a cash in lieu payment is totally against the principles of sustainable development. There are a multitude of factors which affect public open space, besides the area. As was shown in the case study the public open space is virtually of no use to the majority of the residents due to its location, topography and aspect. The case study has shown that the public open space should have been integrated throughout the estate to provide for wildlife

[54] Personal communication, R. Nolan and P. Fisher, Resource Planning and Development Commission, May 1999

corridors, visual amenity screening, habitat retention, infiltration areas for storm water run-off etc.

By its very definition it is a public space yet no consideration is given to how the public will use the space.

Recommendation 5

Public open space legislation to be incorporated into the LUPAA with provisions for guidelines for the utilisation of the space.

7.3.6 Location of Subdivisions

Under the present legislation and planning schemes the location of subdivisions is primarily controlled by the outdated and crude method of zoning. There are other legislative constraints on subdivision such as the *State Water Quality Management Policy 1997*, *State Coastal Policy 1996* and *State Policy on the Protection of Agricultural Land 1999*, however in most cases once land has been zoned as residential then this is generally the primary control.

Sustainable development implicitly demands efficiency as a central principle. By allowing subdivision in fringe areas or in bushland and not utilising land near to existing services and utilities is clearly in breach of this central principle. Therefore land should be sequentially subdivided from the existing settlement areas outwards, which is the most efficient way of utilising services and minimising costs for the general community.

A strategic land release plan based on the capacity of existing services and preferred location for dwellings based on sustainable development practices is required. The plan needs to be dynamic and reviewed frequently to suit evolving situations in the community unlike the present system of zoning. Present Local Government area boundaries are not the optimum boundary for this type of plan and a regional focus is therefore required. Given the present process where elected officials make decisions on land subdivision this plan should not be administered by Local Government.

Recommendation 6
A dynamic regional strategic settlement plan is required showing the location of land for release to provide for efficient use of resources and

infrastructure administered by a statutory body.

7.3.7 Timing of land release for Subdivisions

The Greater Hobart area currently has a chronic oversupply of land available for dwelling construction. There is a complete lack of timing control provided by present planning schemes and zoning.

It is recognised that some lead time is required for subdivisions due to the time lag between approval and the final marketing of lots. The timing for land release requires greater controls than incremental development driven by the real estate market and a group of fragmented land owners.

Recommendation 7

The timing of land release for subdivision is controlled by a regional community needs basis and dependent factors such as population growth or decline, demographics and land supply.

7.3.8 Should land be subdivided?

Many planning decisions are compromises in which no issues are addressed in a totally satisfactory manner. A range of criteria needs to be developed which are the parameters for the allowing of subdivision.
These parameters should include factors such as:-

1. Skyline preservation;
2. Vegetation retention;
3. Bushfire risk;
4. Habitat retention;
5. Environmental constraints;
6. Social costs; and
7. Equity issues.

Figure 35 is an example, arguably where skyline preservation is acceptable, yet bushfire risk and the existence of a community of significant threatened vegetation as well as access issues should have prohibited this subdivision.

Figure 34 is another example of relatively low density subdivision in bushland area. This situation has occurred in spite of present planning safeguards. This type of vegetation clearance sets a

precedent for future development.

Figures 34 & 35 are examples of the variations of subdivision density with Tolmans Hill being another example of a higher density subdivision.

This indicates that regardless of subdivision density the end result is difficult to control. The question to be answered is - should a particular area of land be subdivided at all, given present controls? This results in mediocre or undesirable outcomes such as Tolmans Hill estate in which no issue is adequately addressed. The skyline is partially reserved, the time period for the extinction of the vegetation is decreased and a bushfire will possibly strike every 10-20 years.

Recommendation 8

A set of parameters is required to determine which land cannot be subdivided in any form whatsoever. The failure to meet one of these parameters renders the land not suitable for subdivision.

7.3 9 Definition of subdivision

Although subdivision is defined under the LUPAA as development, it is difficult to argue it is development when a subdivision plan is approved without any future land use details. It is the use of the land which has the greatest impact on sustainable development principles.

In the case study, practically speaking, development did not start until the land has been used for residential house sites. This raises the question, when does subdivision become development? It is apparent that it becomes development when the land it is used.

The LUPAA has 'use' and 'development' defined as separate entities. In the legislation, the phrase 'use or development' is used throughout to indicate the separation of these two concepts. In the case of land subdivision it should be 'use and development' of land. This would ensure the 'use' could be considered in the proposal plan stage. This would also ensure that land was not subdivided and left vacant because it could not be used.

This means that the 'use' and 'development' of resources cannot be

separated in an attempt to determine a resource management regime.[55] It is difficult to plan for sustainable development if the end use of the land is not known, given the separation of use and development in the LUPAA.

Evidence for this is given in the case study, for example, to attempt to meet sustainable development objectives at Tolmans Hill, the layout of the lots should suit the intended use. An example is the cut shown in ***Figure 15*** which is approximately 3 - 4m in height. The lots above this cut are in the order of 900 - 1000 square metres in area. While vehicular access is not a necessity, construction costs are significantly increased and marketability of the lot is decreased. It will be practically impossible for a residential dwelling to have vehicular access to their lots. The cost of installing a driveway would be high, let alone the large area used to construct the driveway. The same problem exists for lots on the lower side of the main carriageway.

What this means is that technically development has occurred and before it can be used (if at all) a significant amount of money will need to be spent. In some cases the high costs of using the land will render it unusable for what it was developed as. A virtually 'unusable' development.

Recommendation 9

A subdivision is not allowed until the use and development of the proposal demonstrates how it meets sustainable development criteria. (Subdivision is not 'development' until a practical use can be made of the land. This use will need to demonstrate how it meets sustainable development principles.)

Recommendation 9A

The LUPAA amended to consolidate use and development in the case of land subdivision.

[55] Department of Environment and Land Management, Committee for the review of the State Department of Environment and Land Management, *Committee for the Review of Planning System*, Andrew Edwards[Chairman], p. 20, 1997.

8 WHAT DOES THE FUTURE HOLD?

8.1 INTRODUCTION

This section will discuss ideas for the future in relation to land subdivision.

8.1.1 Evolution of land subdivision

A graphical representation of the evolution of land titles is given below which has a direct correlation to land subdivision.

Industrial Revolution →			Information Revolution →			
1800	1900	1950	1960	1990	1990	2000 →
Land markets Torrens title			Subdivision evolution Native		title Agenda 21 Multi-purpose cadastre	

Figure 37: Evolution of Western Land Administration
Source: Adapted from; Ting, L. & Williamson, I. *Cadastral Trends: A Synthesis*, The Australian Surveyor, Vol. 44, No. 1, 1999.

The world community is becoming increasingly aware that land is a fundamental finite resource for survival and is becoming a scarce and degraded 'commodity'. The trend on the world stage given Agenda 21 is for recognition of the need for sustainable development of which land subdivision is an integral part. A multi-purpose cadastre has been made possible by the technological advances such as Geographical Information Systems, Global Positioning Systems and digital satellite information. The challenge is to give this multi-purpose cadastre legislative powers over the use or development of land. We have the technology and information however it is not being used to its full potential to achieve sustainable development.

Unfortunately this need for sustainable development has not filtered down to the land subdivision industry or the regulators of development. Land use and development statutory provisions have not been able to keep pace with the development of societal and technological change. There is an urgent need to change the present system of land subdivision in Tasmania given the evidence detailed in this project.

It is evident that the present outdated land use zoning systems cannot adequately address sustainable development principles. Many of the current planning schemes pay 'lip' services to sustainable development. All levels of government need to address the problem, particularly local government in all its activities.

It may be some time before community concern and attitudes place enough pressure upon the political process to actually enforce the legislation that is in place. The RMPS is acknowledged as an example of worlds best practice in planning legislation, yet lack of resources and political will is not allowing it to be effective.

Due to the political process which in most cases drives change, it is expected that change will not happen quickly. The subdivision inertia and amount of capital invested in land as a commodity will allow vested interest groups to lobby our political masters to make any change happen slowly.

I believe change in subdivision patterns will occur, TASCORD is an example where the literature is in the public domain, yet not fully embraced by local governments in statutory planning schemes. Sections of TASCORD have been incorporated into the Break O' Day Planning Scheme and a hybrid form of TASCORD has been used in the City of Hobart Planning Scheme 1982.[56] The Model Planning Scheme has scope for these type of planning guidelines to be incorporated.

The basic building blocks of subdivision, the cadastre, has had another layer thrust upon it in the form of the *State Policy on the Protection of Agricultural Land 1999*. This policy offers some protection for high quality agricultural land which is a move towards sustainable development. Although this is only one facet of the complex issue of sustainable development, it is a positive step forward.

8.1.2 Long term ecological view

In the geological time scale human inhabitation of the Earth has been minute. In ecological terms we may be a passing phase in the evolution of the planet Earth. In the future eons of time our

[56] Personal communication, P. Fisher, Resource Planning and Development Commission, August 1999

civilisation may be looked back upon as a phase similar to the era of the Dinosaur.

There are several theories as to the long term future of life as we know it on Earth. However one certainty exists, this is a planet with finite resources therefore we are consuming our future. Technology may or may not prolong the rate of consumption of resources.

Is our consumption of the worlds resources[land] a passing stage of the evolution of Earth, do we consume the available resources, become extinct and let the evolution of the next life form evolve?

8.2 SUMMARY

The need for sustainable development is obvious, unfortunately due to economic forces I believe it is not being embraced. Hopefully the environmental situation does not degrade to a point where society is forced into accepting harsh measures in order to become sustainable.

Instead of economics being the major driving force which determines land subdivision and the social and environmental costs being an after thought it would be desirable for the later two issues to be considered first and then see if it is an economical proposal.

If we continue down the present path of high land consumption then eventually measures will need to be taken to control the rate of consumption. It may be the case that in several generations when the full costs of the present excesses of land subdivision have to be funded, that action will be taken, either driven by economics or environmental concerns.

The Agenda 21 approach will need to be embraced where the integration of 'Local' actions affecting 'Global' outcomes is used to ensure sustainable decision making

9 REFERENCES

Bingham, R. *Genesis and outline of the Resource Management and Planning System.* National Environmental Law Association, Tasmania Division, 1995.

Broadbent, G. *Emerging Concepts of Urban Space Design.* Van Nostrand Rheinhold, London, 1990.

Bushfire Management Planning Group, *Draft Guidelines for Development in Bushfire Prone Areas,* Hobart City Council, 1999.

City of Glenorchy, *A Century in Glenorchy*, Speciality Press, Hobart, Tasmania, 1980.

Clark, M. *Metropolitan Planning in Hobart*, Editor; Freestone, R. Spirited Cities, Sydney, Federation, 1993.

Department of Environment, Australian Government Environment Australia Online, http://www.environment australia(1997) as at May 1999.

Department of Environment and Land Management, *Committee for the review of the State Planning System*, Andrew Edwards[Chairman], 1997.

Department of Environment and Land Management, *Tasmanian Code for Residential Development*, Printing Authority of Tasmania, 1997.

Department of Environment and Land Management, *State of the Environment Report*, Volume 1 Conditions and Trends, Printing Authority of Tasmania, 1996.

Department of Environment and Land Management, *Planning Note No. 9*, Land Use and Planning Review Panel, 1996.

Department of Environment and Land Management, *Information Guide to Land Use Planning Approvals System in Tasmania*, Planning Division, Tasmania, 1994.

Department of Environment, Sport and Territories, *Local Global , Managing the future, A Local Government Guide*, Commonwealth Government Publication, 1994.

Edwards, G. *How To Destroy The Bush Without Really Trying*, Landscape Australia, February 1989.

Graham, R. *Hobart: Explosion Without Growth*, Urban Policy and Research, Vol 12, No. 4, 1994.

Gulson, L. *Crestwood Local Area Plan*, Hobart City Council, 1995.

Hobart City Council property files

Hogue, S. *Future Urban Development and Infrastructure Provision in Greater Hobart*, Department of Environment and Land Management, 1996.

Hutton, D. & Connors, L. *A History of the Australian Environmental Movement*, Cambridge University Press Melbourne, 1999.

International Institute for Sustainable Development, *Sustainable Development Timeline*, Canada, http://www.iisd.ca.timeline as at 20/10/98, 1997.

Jacobs, M. Paper presented at Royal Institute of Public Administration Australia conference held at Wrest Point, Tasmania, 1993.

Jones, A. *Backsight: A history of Surveying in Colonial Tasmania*, Mercury Walsh, Tasmania, 1921.

Model Code Task Force of the Green Street Joint Venture, *Australian Model Code For Residential Development*, Australian Government Publishing Service, Queanbeyan, New South Wales, 1990.

Morgan, S. *Land Settlement in Early Tasmania; Creating an antipodean England*, Cambridge University Press, Singapore,1992.

New Zealand Parliament at http://www.clerk.parliament.govt.nz/ on 10/11/98.

Nolan, R. *Hobart's Need for Regional Planning*, Royal Australian Planning Institute Journal, Vol. 19, No. 4, 1981.

Ridder, B. *State of Environment Report*, Hobart City Council 1998, Monotone Art Printers, Tasmania, 1998.

Robson, L. *A History Of Tasmania*, Vol II, Oxford University Press, Melbourne, 1990.

Rost, R. & Collins, H. *Land Valuation and Compensation in Australia*, Southwood Press, Sydney, 1993.

Solomon, R. *Urbanisation: The Evolution of an Australian Capital*, Angus and Robertson, Sydney, 1976.

Southern Metropolitan Master Planning Authority, *Hobart Metropolitan Area Strategy Plan*, Southern Metropolitan Master Planning Authority, 1976.

Strahler, A. & A. *Modern Physical Geography*, J. Wiley & Sons, Singapore, 1987.

Tasque, *The Role of Local Government in Environmental Management*, Vol. 1 & 2, Local Government Minister's Council, 1992.

Tasque, *South Hobart Local Area Plan,* Vol. 1, 2 & 3, Hobart City Council, 1998.

Thorpe, V. *Catchment to Coast*, Tasmanian Environment Centre, Printing Authority of Tasmania, 1997.[57]

Ting, L. & Williamson, I. *Cadastral Trends: A Synthesis*, The Australian Surveyor, Vol. 44, No. 1, 1999.

Personal Interveiws

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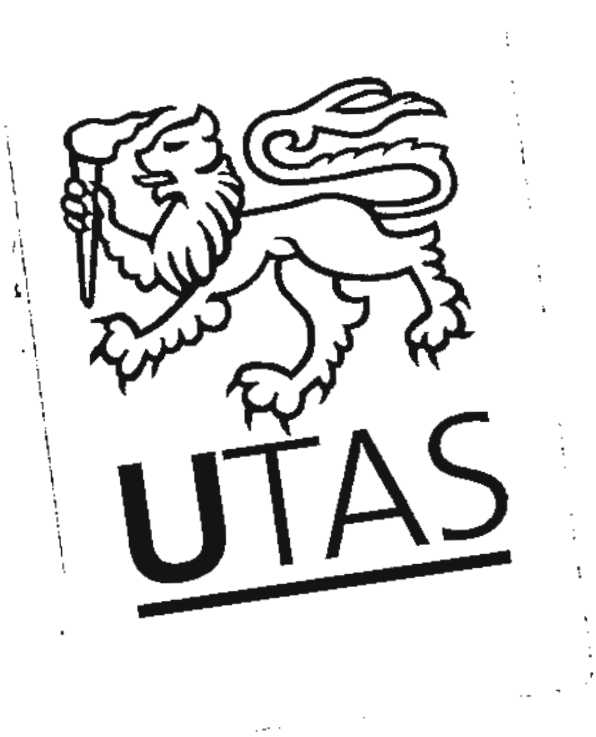


APPENDIX A - OBJECTIVES OF THE RESOURCE MANAGEMENT AND PLANNING SYSTEM OF TASMANIA

LAND USE PLANNING AND APPROVALS ACT 1993

SCHEDULE 1 - OBJECTIVES

PART 1 - OBJECTIVES OF THE RESOURCE MANAGEMENT AND PLANNING SYSTEM OF TASMANIA

1(a) to promote the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity; and

(b) to provide for the fair, orderly and sustainable use and development of air, land and water; and

(c) to encourage public involvement in resource management and planning; and

(d) to facilitate economic development in accordance with the objectives set out in paragraphs (a), (b) and (c); and

(e) to promote the sharing of responsibility for resource management and planning between the different spheres of Government, the community and industry in the State.

In clause 1(a), "sustainable development" means managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well-being and for their health and safety while -

(a) sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations; and

(b) safeguarding the life-supporting capacity of air, water, soil and ecosystems; and

(c) avoiding, remedying or mitigating any adverse effects of activities on the environment.

PART 2 - OBJECTIVES OF THE PLANNING PROCESS ESTABLISHED BY THIS ACT

The objectives of the planning process established by this Act are, in support of the objectives set out in Part 1 of this Schedule -

(a) to require sound strategic planning and coordinated action by State and local government; and

(b) to establish a system of planning instruments to be the principal way of setting objectives, policies and controls for the use, development and protection of land; and

(c) to ensure that the effects on the environment are considered and provide for explicit consideration of social and economic effects when decisions are made about the use and development of land; and

(d) to require land use and development planning and policy to be easily integrated with environmental, social, economic, conservation and resource management policies at State, regional and municipal levels; and

(e) to provide for the consolidation of approvals for land use or development and related matters, and to coordinate planning approvals with related approvals; and

(f) to secure a pleasant, efficient and safe working, living and recreational environment for all Tasmanians and visitors to Tasmania; and

(g) to conserve those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value; and

(h) to protect public infrastructure and other assets and enable the orderly provision and coordination of public utilities and other facilities for the benefit of the community; and

(i) to provide a planning framework which fully considers land capability.

Definition of development from the LUPAA

"development" includes -

(a) the construction, exterior alteration or exterior decoration of a building; and

(b) the demolition or removal of a building or works; and

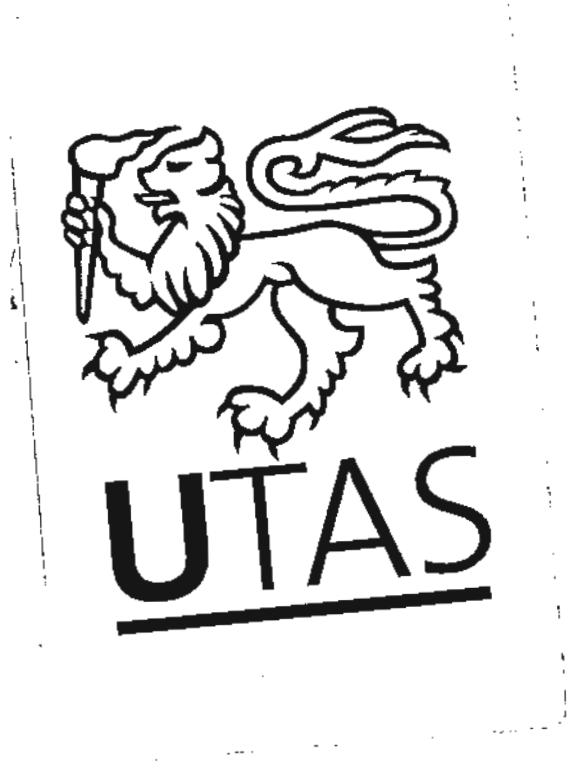
(c) the construction or carrying out of works; and

(d) the subdivision or consolidation of land, including buildings or airspace; and

(e) the placing or relocation of a building or works on land; and

(f) the construction or putting up for display of signs or hoardings -

but does not include any development of a class or description, including a class or description mentioned in paragraphs (a) to (f), prescribed by the regulations for the purposes of this definition;



APPENDIX B - TASMANIAN RESOURCE MANAGEMENT AND PLANNING SYSTEM

An outline of the scope and content of the core acts of Tasmania's RMPS which have a direct impact upon subdivision will be given to place the planning system in context. There are five central acts which form the RMPS. Along side these five acts there are another six acts which affect resource management.

This outline is not a clause by clause discussion on the acts, but rather a succinct account of the major roles and function of the core acts.

The five central acts are:-

- *Resource Management and Planning Appeal Tribunal Act 1993*;
- *Land Use Planning and Approvals Act 1993*;
- *State Policy and Projects Act 1993*;
- *Environment Management and Pollution Control Act 1994*; and
- *Historic Cultural Heritage Act 1995.*

The first three acts were the original basis of the RMPS. The SPPA has resulted in several State Policies being introduced. All of these central acts have the same objectives.

The current State policies are:-

- *State for Water Quality Management Policy 1997*;
- *State Coastal Policy 1996*; and
- *State Policy on the Protection of Agricultural Land 1999.*

The remaining six acts deal with discrete resource management issues, but and not be discussed.

These six acts are:-

- *Public Land Act 1991*;
- *Living Marine Resources Act 1995*;
- *Marine Farming Planning Act 1995*;
- *Threatened Species Act 1995*;
- *Wellington Park Act 1993*; and
- *Sullivans Cove Act 1995.*

LAND USE PLANNING AND APPROVALS ACT 1993.

This Act is the major cornerstone of the land use and planning legislation. The LUPAA provides an administrative framework for planning authorities to process development applications. The legislation also stipulates the administration of planning schemes and subsequent amendments.

This legislation is a overarching framework for planning schemes to be administered and sets time limits for planning authorities to make decisions. While the legislation does have a framework for planning schemes, it does not have any provisions for the content of planning schemes. The only guidance as to the contents are the objectives of the RMPS. The objectives of the planning process established by this act in Part 1 of Schedule one as detailed in ***Appendix A***.

Part 2 of Schedule 1 expands on the objectives stated in Part 1. The land use legislation has objectives, but no direction on how these are met or how they are included in a planning scheme.

RESOURCE MANAGEMENT AND PLANNING APPEAL TRIBUNAL ACT 1993

This act provides for the establishment of a consolidated Appeal Tribunal to review administrative decisions on both merit and law, and to deal with civil enforcement issues in resource management and planning matters. The Act provides guidelines as to whom may sit on the Appeal Tribunal.

The function of the tribunal is to make decisions on planning decisions which are brought before it. Persons may decide to appeal a decision made by a planning authority, in which case the appeal is heard by the Tribunal. A party to an appeal may seek to appeal a tribunal decision in the Supreme Court, but only on a point of law, not planning merit.

The Tribunal may hear appeals from other resource management legislation, such as the EMPCA, *Living Marine Resources Act 1995*, *Threatened Species Act 1995*, *Marine Farming Act 1995* and the *Historic Cultural Heritage Act 1995*.

The Appeal Tribunal has a procedure for any appeal to be subject to mediation before a tribunal hearing.

HISTORIC CULTURAL HERITAGE ACT 1995

This act seeks to protect and maintain places with significant European historic cultural heritage value. This act has set up a Tasmanian Heritage Register and Tasmanian Heritage Council. Significant places are entered on to the register, which is maintained by the heritage council.

The Heritage Council administers the Tasmanian Heritage Register and assess works applications. This legislation operates separately to the LUPAA, with a separate approval and appeal process. An approval under the LUPAA does not automatically imply an approval under the *Historic Cultural Heritage Act 1995.*

The Heritage Council provides information and advice on heritage conservation matters. This act has provisions for stop work orders, repair orders and heritage agreements.

STATE POLICY AND PROJECTS ACT 1993

This act provides for the formulation of State Policies, assessment of Projects of State Significance and for the production of State of the Environment Reports. State policies are devised for matters which need to be dealt with in a coordinated State wide approach.

A project may be declared a project of State Significance by the Premier in which case this act sets out guidelines for its assessment. The act also details guidelines for eligibility of a project to become a project of State significance.

State of the Environment Reports are scientifically based reports that report on the 'state' of the environment which are required to be produced every five years. This report contains information on the condition, trends and changes in the environment along with recommendations on future management.

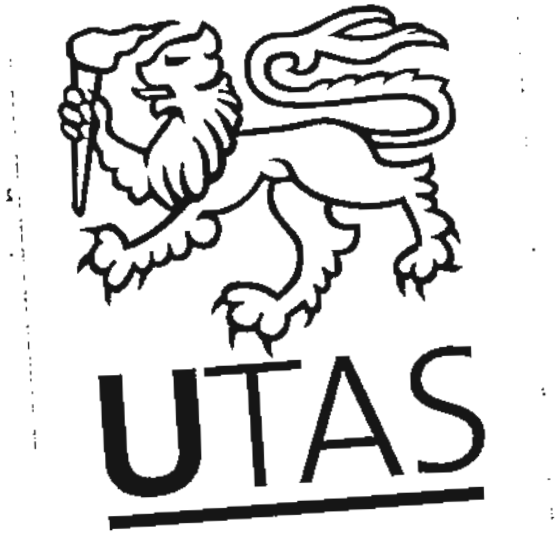
ENVIRONMENTAL MANAGEMENT AND PROTECTION CONTROL ACT 1995

This act provides for a range of management tools to prevent and manage any adverse effects on the environment from human activity. This act sets up a framework for assessment of developments into 'levels' and the relevant levels have a variety of controls to protect the environment.

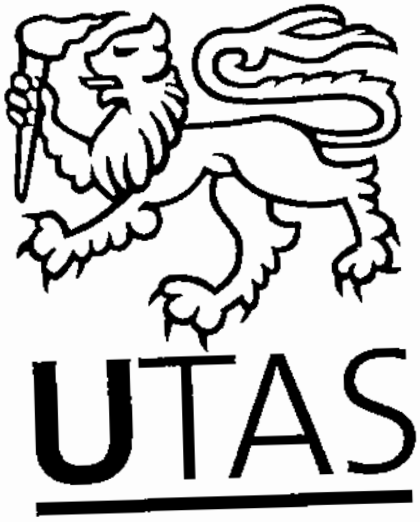
This act is primarily concerned with industrial activities which cause pollution. In many cases this act is not relevant to many development applications.

It does, however have a broad definition of 'environmental harm' which has been used by Councils. Environmental Harm is defined as:- Any adverse effect on the environment (of whatever degree or duration) and includes 'environmental nuisance'. This Act via an 'Environmental Protection Notice' has been used by the Hobart City Council in one circumstance to remedy a erosion and sedimentation problem caused by a subdivision.

This legislation has the potential for a far wider context than its present use.



APPENDIX C - PHOTOGRAPH LOCATION MAP



TOLMANS HILL ESTATE

LOCATION & DIRECTION OF PHOTOGRAPHS

Location, Direction & Reference (Figure) No. of Photograph — 19

Proposed future stages of subdivision

N

0 100 200 300

metres

Figure 36