

# **THE ROLE OF SPECIAL MANAGEMENT AREAS IN THE PROTECTION OF THE URBAN EDGE**

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Assignment presented in partial fulfilment of the requirements for the Masters degree in  
Town and Regional Planning at the University of Stellenbosch.

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## **DECLARATION**

I, the undersigned, hereby declare that the work contained in this assignment is my own original work, and that I have not previously in its entirety or in part submitted it at any university for a degree.

## SUMMARY

This study considers the possibility of using special management areas at metropolitan level as a measure to control urban sprawl in South Africa, and specifically in the greater Cape Town area.

Important issues included in the study are: international and local measures currently and previously used, relevant South African legislation that support urban edge protection, economic and ethical theories regarding urban edge protection, the measures currently implemented in Stellenbosch, an examination of special management areas and recommendations.

International attempts in curbing urban sprawl dates back to post-Industrial Revolution Europe (1800s). British and American measures are compared, mostly differing in the level of public support of sustainable development.

Local attempts have been limited and have not been implemented at the scale of international measures. Recently developed policies such as the Metropolitan Spatial Development Framework (1996) and the Bioregional Planning Framework (2000) are more directly focussed on sustainable development than previous policies (e.g. guide plans and structure plans) have been. The Metropolitan Spatial Development Framework proposes the demarcation of urban edges in the Cape Metropolitan Region, while the Bioregional Planning Framework is intent on dividing the Western Cape Province into bioregions. The Bioregional Planning Framework originated the use of special management areas to control development in rural (agricultural and natural) areas. The idea of this study is to measure the feasibility of using special management areas at metropolitan level, in conjunction with both the Metropolitan Spatial Development Framework and the Bioregional Planning Framework, to protect the urban edge.

This study concludes by disproving its hypothesis: special management areas have limited applicability as a general urban edge control measure at metropolitan level.

## OPSOMMING

Hierdie studie oorweeg die moontlike gebruik van spesiale bestuursareas in Suid-Afrika, en spesifiek in die groter Kaapstad gebied as maatreël vir die bekamping van stadskruip.

Belangrike kwessies wat in hierdie studie ingesluit word is: internasionale en plaaslike maatreëls wat tans en in die verlede gebruik is om stadsgrense te beskerm, relevante Suid-Afrikaanse wetgewing wat die beskerming van stadsgrense ondersteun, toepaslike ekonomiese en etiese teorieë, maatreëls wat tans deur Stellenbosch geïmplementeer word, 'n ondersoek na spesiale bestuursareas, en voorstelle vir toekomstige beleid.

Internasionale pogings om stadskruip te bekamp dateer uit die post-Industriële Revolusie era in Europa (1800s). Britse en Amerikaanse maatreëls is vergelyk. Die mees merkbare verskil tussen dié twee lande lê in die vlak van openbare steun vir volhoubare ontwikkeling.

Die omvang van plaaslike pogings was in die verlede beperk tot gids- en struktuurplanne, wat nie veel beskerming aan die rand van die stad gebied het nie. Beleide wat onlangs ontwikkel is (die Metropolitaanse Ruimtelike Ontwikkelingsraamwerk en die Biostreekbeplanningsraamwerk) fokus meer direk op volhoubare ontwikkeling as hul voorgangers. Die Metropolitaanse Ruimtelike Ontwikkelingsraamwerk (1996) stel die afbakening van stadsgrense voor, terwyl die Biostreekbeplanningsraamwerk (2000) voorstel dat die Wes-Kaapse Provinsie in biostreke verdeel word. Die Biostreekbeplanningsraamwerk het oorspronklik die gebruik van spesiale bestuursareas voorgestel om ontwikkeling in landelike (landbou en natuurlike) gebiede te beheer.

Die idee van hierdie studie is om die uitvoerbaarheid van die gebruik van spesiale bestuursareas op metropolitaanse vlak, saam met die Metropolitaanse Ruimtelike Ontwikkelingsraamwerk en die Biostreekbeplanningsraamwerk, te bepaal.

Hierdie studie sluit af deur die hipotese verkeerd te bewys: spesiale bestuursareas het beperkte toepaslikheid as algemene stadsgrens beheermaatreël op metropolitaanse vlak.

## **ACKNOWLEDGEMENTS**

Dr PE Claassen, my supervisor

My parents, family and friends

The Lord

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# 1. INTRODUCTION

## 1.1 THE PROBLEM

Urban sprawl first gained notoriety after the Industrial Revolution: rapid horizontal growth of cities threatened to swallow their surrounding countryside at an unprecedented rate. One of the first growth control policies was the British green belt system. This system has been applied worldwide with varying degrees of success. Since these early attempts the focus of the preservation of agricultural land have shifted to the preservation and conservation of the natural environment (and whole ecosystems). In modern times, issues relating to lifestyle and individual rights have worsened the dilemma, such as a preference for private over public transport and low-density residential development (Bryant, Russwurm & McLellan, 1982: 16; Cape Metropolitan Council, 1998: 24; 1999b: 33).

Concern about continuing urban sprawl may necessitate urban edge protection measures, since urban sprawl may lead to: increased infrastructure costs, inefficiencies in the operation, maintenance and management of services and facilities spread over large areas, the poor use of vacant land, an increase in urban run-off, a reduction in the ability to operate a viable public transport system, and an increase in air pollution due to an increase in private transport usage (Cape Metropolitan Council, 1998: 24, 26). For the developer himself, sprawl can lead to the destruction of the topic of his sales pitch: the countryside, which does affect the bigger developers (Whyte, 1993: 142).

Urban edge protection measures are therefore focussed on maintaining the cohesiveness, identity and visual character of an area and protecting valuable farmland (Cape Metropolitan Council, 1998: 26). Chinitz (1990: 3-4) ascribes the unmanaged urban growth to *using the wrong land* and *using land the wrong way*.

South African cities are characterised by a new wave of urbanisation: squatting on city peripheries. Greater Cape Town has large areas of outstanding natural beauty outside of agricultural areas, where development pressures are high due to its proximity to urban areas.

This complicates the implementation of foreign urban edge protection measures, as there are more exceptions than similarities with other parts of the world. South Africa also has First World enclaves – like greater Cape Town – characterised by a demand for semi-rural land as holiday resorts and for upper income housing, both extensive (smallholdings) and intensive (walled villages). The area has an international property market. The demand for land is focussed on both natural and agricultural areas.

South African attempts have not provided sufficient protection to the urban edge. The term “urban edge” was only included into policy in 1996 (the Metropolitan Spatial Development Framework). Previously, greenfields development was managed by controlling the subdivision of agricultural land (Subdivision of Agricultural Land Act, 70 of 1970). Guide plans and structure plans barely mentions the threat of urban sprawl. The Metropolitan Spatial Development Framework (Cape Metropolitan Council, 1996) is the first real official attempt at curbing urban sprawl in a coordinated manner.

The Bioregional Planning Framework propagates special management areas: contractual agreements between land owners and local authorities, and controlled by ISO 14001 Environmental Management Systems (Dennis Moss Partnership, 2000: 30; Winelands District Council, 2000b: 222-226). The feasibility of special management areas as a measure to assist in the protection of the urban edge will be considered in chapter 7.

Some related issues include whether an “urban edge line” or “transition zone” is more suitable. Keeble (1964: 288) stated in 1952 that: “It is vital that the boundary between the built-up area of a community and the surrounding countryside should be kept sharp and clear.” The Metropolitan Spatial Development Framework combines urban edge lines and transition zones in its approach to urban edge protection (Cape Metropolitan Council, 2000: 37).

The success of most urban protection measures in developed countries is driven by public support. Will international measures imported to South Africa be as successful if public support is focussed elsewhere? It can be argued that there are more pressing issues in South Africa (as a Third World country) than urban edge protection and sustainable development.

This study will be based on the premise that the urban edge *should* be protected. It is however not clear whether the urban edge *can* be protected. The study will focus on measures to control urban sprawl on *private land*.

## 1.2 AIMS / HYPOTHESIS

The hypothesis that will be tested in this study is that special management areas can assist in the protection and management of the urban edge.

This study will aim to describe the economics of the urban edge; to identify environmental ethics that impact on planning decisions; to review historical and modern approaches to urban edge protection and management (international and local); to consider the application of special management areas on the urban edge; and to draw conclusions as to the potential success of special management areas as an approach to assist in urban edge protection and management, as well as suggest possible alternatives.

## 1.3 METHOD

The researcher used a plurality of research methods: a comparative literature study, a study of relevant policy and legislation, personal communications, input from the study leader, and the personal opinion of the researcher.

The issue of urban edge protection is discussed in terms of:

- economic and environmental ethic theory on rural and urban edge land (Chapter 2);
- international measures of protection, both historical and modern (Chapter 3);
- South African measures of protection, both historical and modern (Chapter 4);
- relevant South African legislation that supports urban edge protection (Chapter 5);
- the present Stellenbosch strategy regarding urban edge protection (Chapter 6);
- special management areas (Chapter 7); and
- concluding remarks and synthesis (Chapter 8).

## 1.4 CONCEPTUALISATION

Key concepts used in this study include: the urban edge, urban sprawl, and the environment.

### 1.4.1 The urban edge

The urban edge can be described as a *zone* of transition in land-use (from agricultural land to non-farm uses), social and demographic characteristics. It lies between the urban and suburban areas, and the rural hinterland (Pryor as cited in Bryan et al, 1982: 11; Robertson, 1990: 149-150). It can also be described as a demarcated *line* to manage, direct and control urban expansion (Cape Metropolitan Council, 1996: 104; 2000: 17).

### 1.4.2 Urban sprawl

Urban sprawl is the outward growth of urban areas through low-density development (usually suburbs) on the peripheries of existing towns and cities, and may result in the loss of agricultural land and natural environment (Cape Metropolitan Council, 1996: 104; Gilpin, 1996: 223).

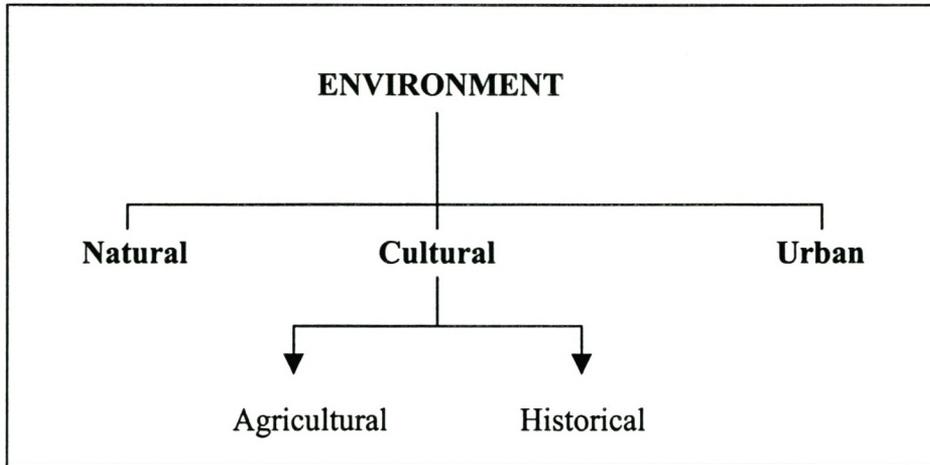
### 1.4.3 The environment

The National Environment Management Act (Act 107 of 1998, section 1.xi) defines the environment as: "... the surroundings within which humans exist and that are made up of

- i. the land, water and atmosphere of the earth;
- ii. micro-organisms, plant and animal life;
- iii. any part or combination of (i) and (ii) and the relationships among and between them; and
- iv. the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being."

The Environment Conservation Act (Act 73 of 1989, section 1) defines the environment as: "... the aggregate of surrounding objects, conditions and influences that influence the life and habits of man or any other organism or collection of organisms."

The National Environment Management Act (Act 107 of 1998) definition is preferred in this study. The environment also be classified as the natural, cultural (agricultural and historical) and urban environments (Gasson, as cited in Finke, 1986).



(Adapted from Gasson, as cited in Finke, 1986.)

**FIGURE 1.1**  
**THE ENVIRONMENT**

## **2. RELEVANT ECONOMIC AND ETHICAL THEORIES OF URBAN EDGE PROTECTION**

### **2.1 INTRODUCTION**

The war between good and evil in planning rages between pro-development and anti-development groups, both on public and privately owned land. The following discussion of land economics on the urban edge is focussed on privately owned land. Pro-development and conservationist groups' attitude to development and the environment is discussed in this chapter.

Urbanisation of rural land most often involves the conversion of agricultural land to urban residential land uses (Berry, 1978: 2). Urban encroachment on farmland is associated with an air of anticipation: disinvestment in agriculture and rising land values (Sinclair, 1967: 78).

Agricultural land has different values – economic, ecological and cultural – all in conflict. The conflict is greatest where good farmland is at stake (Bryant et al, 1982: 26-27). Disturbingly, it is generally accepted that agricultural land around urban areas tend to have higher agricultural potential, and that the preference of urban development for good farmland relates only to its accessibility (Bryant et al, 1982: 100-101).

### **2.2 ECONOMIC MODELS**

Von Thünen's 1826 model for agricultural land use remains a classic example of location theory. He based his model on several assumptions: the existence of an infinite flat featureless plain (with natural resources distributed uniformly) and a single central market (Harvey, 1996: 199). According to this model, the agricultural land use pattern is dependant on competition between different types of agriculture. This competition can be interpreted as economic rent (or return from investment in land): the land use providing the greatest economic rent would also make the highest bid for the land and would displace other land uses.

The most important determinant for economic rent is transport cost. As transport costs increase with distance from the market, economic rent will decline. This implies that the intensity of agricultural activity will decrease with increased distance from the market (Sinclair, 1967: 73-75).

The resulting spatial distribution of agricultural land uses consists of a set of concentric rings around major urban market centres (Getis, Getis & Fellman, 1996: 350) as listed in Table 2.1.

**TABLE 2.1**  
**SPATIAL DISTRIBUTION OF AGRICULTURAL ACTIVITIES**

	DISTANCE FROM MARKET	VON THÜNEN	PRESENT PATTERN	DISTANCE FROM URBAN AREA
<b>Zone 1</b>	↓	Production of perishable products (vegetables / milk). Highest Economic Rent.	Edge of built-up area.  Land is changing to urban uses, being subdivided or held by speculators or developers.  Higher taxes and nuisance push out farmers.	↓
<b>Zone 2</b>		Production of firewood and lumber (forestland). High transport cost.	Vacant land.  No urban subdivisions or farming taking place.  Speculators or farmers own land.	
<b>Zone 3</b>		Cash grain or livestock.	Less intensive agricultural activities (field crop and grazing).  Urbanisation anticipated.  No investment in agricultural capital.  Land may be rented.	
<b>Zone 4</b>		Mixed farming.	Dairying and field crops.	
<b>Zone 5</b>		Three yield system: crops, pasture and fallow.	Specialised feed grain livestock.  Economy not influenced by urban area.	
<b>Zone 6</b>		Most extensive grazing.		

(Adapted from Sinclair, 1967: 75-76, 80-81; Getis et al, 1996: 350.)

In the current context of advanced technology, the role of the distance from the market has been replaced by the anticipation of urbanisation (or distance from an urban area). For farmers, transport costs have declined in relation to other production costs, perishable products can be transported over long distances and a single local market rarely exists.

The situation is also complicated by competition from non-agricultural land uses, which usually has a higher economic rent than agricultural land uses (Sinclair, 1967: 76-78). This results in a new distribution of land uses: the value of land for agricultural production decrease near urban areas (Bryant et al, 1982: 104).

The proximity of urban areas creates nuisance restrictions for farmers (regarding hours of operation, practices producing dust, use of pesticides and fertilisers), urban residents trespass, harass or damage farm property, farmers disinvest in their land when they expect urbanisation and transport costs no longer force farmers to locate near urban areas (Berry and Sinclair as cited in Nelson, 1986: 157). As urban anticipation decrease with distance from urban areas, agricultural investment will increase, as will the value of land for agricultural production (Furuseth & Pierce, 1982: 12). The current pattern is compared with Von Thünen's model in column 3 of Table 2.1.

### **2.3 LAND CONVERSION PROCESS**

Anticipated urbanisation may be indicated by changes in land ownership, land use and size of land units. The process can take up to twenty years before actual urbanisation occurs (Brown et al, 1981: 131). The land conversion process is explained in Table 2.2.

Original owners of land on the urban edge include farmers and non-farm residents. They usually own large pieces of land (it is their primary asset) and do not foresee selling their land in the near future, but may come under pressure to do so (Brown, Phillips & Roberts, 1981: 134, 138; Bryant et al, 1982: 54).

When predevelopment owners do decide to sell, it is usually to investors or speculators who are represented by partnerships or corporations. A single land unit only makes up a small portion of these groups' assets. Both investors and speculators wait for land values to rise

before selling. Investors prefer to maintain agricultural production by renting land back to farmers. Speculators stop agricultural activities on their land, mainly because they will not benefit from further agricultural improvement of the land. Supporters of speculation argue that speculators assemble land and increase the stock of developable land. Speculation has numerous disadvantages, which will be discussed in section 2.4 (Brown et al, 1981: 135-136, 138; Bryant et al, 1982: 54, 65).

The functions of the developer include: recognising potential for development, assembling the site, rezoning, arranging finance and the first sale of the developed units (Harvey, 1996: 73-75).

The change in land ownership and land use is accompanied by a decrease in size of land units and an increase in land values (Brown et al, 1981: 137).

## **2.4 URBAN IMPACTS ON THE URBAN EDGE**

Urban development on or near the urban edge can have a variety of impacts, both positive and negative. Consequences can be divided into economic, spatial, social and environmental categories, and are discussed in detail in Table 2.3. It is clear that the detriments of urban development on or near the urban edge outweigh its benefits.

**TABLE 2.2**  
**THE LAND CONVERSION PROCESS (STAGES OF DEVELOPMENT)**

	<b>NON-URBAN USE</b>	<b>NON-URBAN USE: ON URBAN EDGE</b>	<b>URBAN INTEREST</b>	<b>ACTIVE PURCHASE OF RAW LAND</b>	<b>ACTIVE DEVELOPMENT</b>	<b>ACTIVE PURCHASE OF DEVELOPED LAND</b>
<b>Description</b>	In agricultural or other non-urban use.	Change in use or degree of intensity of use.	Decision agent recognises development potential.	Decision agents negotiate land sales transitions.	Physical development of land.	Land purchased by property user.
<b>Decisions</b>	No decision to sell in present or future.	Consideration of future sale.	Present use viewed as transitional.	Purchase of land.	Development of land.	Purchase home.
<b>Primary decision agents</b>	Farmer	Farmer Land dealer	Farmer Land dealer Developer	Developer	Developer Builder	Builder Family
<b>Secondary decision agents</b>		Financier	Financier	Financier Lawyer Estate agent Planner	Financier Lawyer Planner	Financier Lawyer Estate agent
<b>Price informants</b>	Price of land	Improvements	Speculation	Public improvements	Construction Appreciation	Construction Appreciation Total development costs

(Adapted from Martin, as cited in Furuseth & Pierce, 1982: 17.)

**TABLE 2.3**  
**URBAN IMPACTS ON THE URBAN EDGE**

<b>NEGATIVE</b>	<b>POSITIVE</b>
<p><b>ECONOMIC</b></p> <p>Speculation :</p> <ul style="list-style-type: none"> <li>▪ as little money as possible is invested;</li> <li>▪ creation of idle land (agricultural activity stopped);</li> <li>▪ increase in private land banking;</li> <li>▪ inflated land values;</li> <li>▪ purchase of additional farmland by farmers inhibited (restricts expansion of farms).</li> </ul> <p>Increased property taxes to subsidise services and infrastructure.</p> <p>Reduction in capital investment in agriculture.</p> <p><b>SPATIAL</b></p> <p>Removal of land from agricultural production and loss of top quality agricultural land.</p> <p>Growth in part-time or hobby farming (agricultural land taken out of production).</p> <p>Fragmentation</p> <ul style="list-style-type: none"> <li>▪ smaller properties fetch higher unit-area prices than larger properties;</li> <li>▪ other causes: highways and utility corridors;</li> <li>▪ increase in number of landowners; and</li> <li>▪ uncertainty created about the future of farming.</li> </ul> <p>Additional demands for land associated with urban development (infrastructure).</p> <p><b>SOCIAL</b></p> <p>Trespassing, harassment, damage to farm property.</p> <p>Anticipation, uncertainty.</p> <p>Nuisance issues (farmers vs. suburbanites).</p> <p><b>ENVIRONMENTAL</b></p> <p>Water table lowered.</p> <p>Air pollution.</p>	<p><b>ECONOMIC</b></p> <p>Urban market close to farms.</p> <p>Farmland rented back to farmers after purchase by non-farm interests.</p> <p><b>SPATIAL</b></p> <p>A market for non-farm job opportunities is created, which releases land for farm consolidation. The resulting labour shortage requires capital investment, which leads to intensified agricultural activity and production.</p> <p>Hobby farms are a stabilising element (refer to section 2.6).</p> <p><b>SOCIAL</b></p> <p>Population growth in rural areas</p>

(Bryant et al, 1982: 38-41, 45, 63, 65, 101-102, 107-109; Furuseth & Pierce, 1982: 12-14; Winelands District Council, 2000b : 90.)

## **2.5 ECONOMIC CONSEQUENCES OF GROWTH CONTROL**

Urban growth controls create separate and distinct urban and rural land markets. Inside a growth boundary the value of unbuilt-on land increases rapidly, while land values outside a boundary decrease, as it no longer has any speculative value. Its agricultural value increases, thus the decrease in speculative value outside the boundary is compensated by an increase in values inside (Boal, 1970: 87; Brueckner, as cited in Lee & Fujita, 1997: 1999).

The value of rural land near urban areas will increase in the absence of growth controls: it will have agricultural value as rural land as well as speculative value as urban land (Boal & Rosser as cited in Nelson, 1986: 157).

## **2.6 ROLE OF NON-FARMING RESIDENTS**

Bryant et al (1982: 110) argues that non-farming residents may have a beneficial role to play in the protection of the urban edge. It appears that the less dependent a landowner is on agriculture for income, the more important his social motivation for owning rural land, the more stable the land use appears to be. This group is characterised by their shared motivations: they have a desire for greater privacy, personal space and the freedom to partake in activities not permitted in urban areas (e.g. the keeping of livestock). These families usually move from an adjacent urban area to the country, are early in the child-rearing stage, have high incomes and are tertiary educated. They prefer sites within commutable distances from urban areas (Bryant et al, 1982: 73-75, 78).

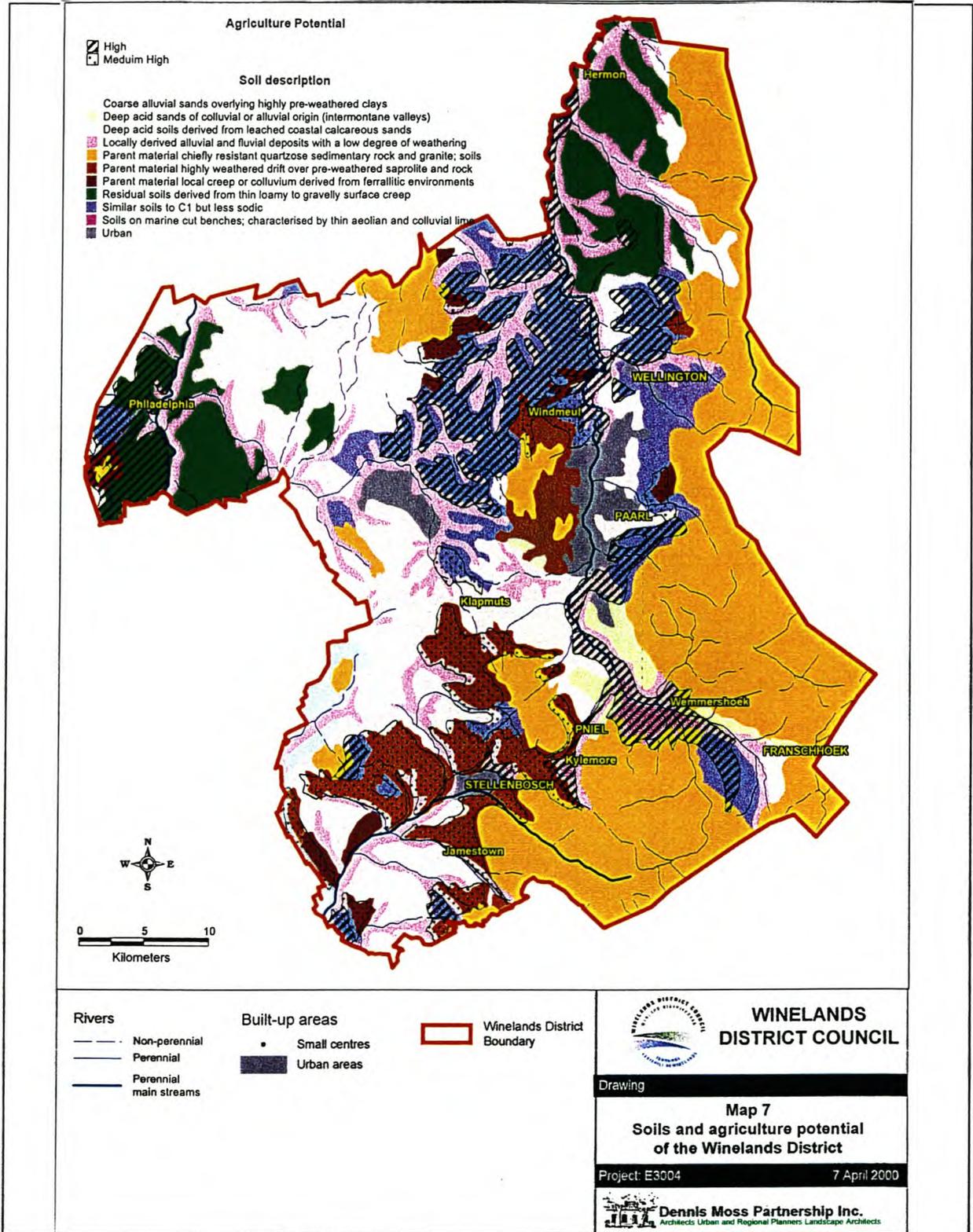
Non-farm ownership of rural land adjacent to urban areas may play a significant role (as a stabilising element in the rural land market) in the preservation and conservation of the natural and cultural environments. This argument may be true for developed countries, but in South Africa, businesses often purchase smallholdings to store its fleet of vehicles, as rural land is much cheaper than urban land. Non-farming residents in South Africa generally do not fall into the same socio-economic category as the group discussed above, and may not have a similar motivation for owning the land. They are especially vulnerable to speculators that assemble land to sell to developers.

## 2.7 IMPLICATIONS FOR THE CAPE METROPOLITAN REGION

The Western Cape is currently experiencing an agricultural slump, especially in the deciduous fruit sector. Estates are being sold at a fraction of their worth (up to 25% of their worth six years ago). The Ceres, Elgin, Piketberg en Grabouw areas are amongst the worst hit by a culmination of factors: three years of drought, increased input costs (e.g. fuel costs), and inflated land values. It appears as though only the rooibos, olive and good red wine sectors are not affected (Cresswell, 2001: 1,10).

Jenkins (2001) observes "... the countryside is never more vulnerable than during a farm recession ...". This will be especially true for the Cape Metropolitan Area if Sinclair (1967: 86) can be believed: agricultural activities requiring long-term investment are more affected by encroaching urbanisation than those requiring short-term investment. The resulting spatial implication of this (according to Sinclair) is that activities requiring short-term investment will be found closer to urban areas.

This is clearly not the situation in the Cape Metropolitan Area – especially in the Winelands area – where predominant agricultural land uses are vineyards and deciduous fruit farming. Both require long-term investment and are in close proximity to urban areas (refer to Figure 2.1).



(Source: Winelands District Council, 2000a: Map 7.)

**FIGURE 2.1**  
**SOILS AND AGRICULTURAL POTENTIAL OF THE WINELANDS DISTRICT**

## 2.8 ENVIRONMENTAL ETHICS

It is essential for the planning profession to have an ethical code to base its actions and decisions on. Since the 1970's the rights of the natural environment have received much attention. The role of the ethical treatment of the natural environment is an important consideration in planning practice and theory, especially in bridging the rift between planners and environmentalists. Hattingh (1999: 81) avers that environmental ethics have an enabling role to play in environmental practice: it is essential to establish practices, structures and institutions to protect the environment.

Three general approaches inform "ethical" environmental decisions: human centred approaches (anthropocentrism), nature centred approaches (ecocentrism) and radical positions.

*Anthropocentrism* is based on a belief in human superiority and primacy. Nature is an expendable resource only valuable if furthering human interests, implying instrumental value (Shrivastone, 1997: 29). Hattingh (1999: 71) describes the position of the ruthless developer as extremely anthropocentric. Hattingh is critical of this group, using concepts like growth and progress, superabundance, short term thinking and technological optimism to describe developers (Hattingh, 1999: 71-72). He also categorises resource developers, conservationists and preservationists as essentially anthropocentric (Hattingh, 1999: 72-73).

*Ecocentrists* believe that "... nature's right to live is absolute ..." (Bramwell, 1994: 184). Humanity is nature's equal, but the interests of nature should always take precedence (Bramwell, 1994: 184). This argument is based on nature's intrinsic value: the value of the environment is independent from its value to humans.

Although anthropocentrism and ecocentrism rationale conflict, they share an objective: the protection of the environment.

The *radical positions* focus on the transformation of society, and include deep ecology, ecofeminism, social ecology and bioregionalism.

*Deep ecology* is aimed at the preservation of the wilderness and limiting human impact on the environment. This can be achieved by wilderness protection, human population control and simple living (commonly interpreted as “quasi-religious” transformation) (Barry, 1999: 14, 18). This approach emphasises the importance of biodiversity and equality of all species, and rejects materialism and consumption (Hattingh, 1999: 77; Müller, 1997: 109).

*Ecofeminism* is concerned with political and social justice regarding women and minorities. It draws parallels between the patriarchal and exploitative oppression of nature and women and ascribes the environmental crisis to social factors (Des Jardins, 1993: 241; Hattingh, 1999: 77; Müller, 1997: 109-110).

*Social ecology* and *bioregionalism* can be described as eco-anarchist approaches: it proposes the reorganisation of communities into smaller self-sufficient units and has strong anti-state arguments (Barry, 1999: 79-80).

*Social ecology* opposes hierarchical and authoritarian structures and technologies. It postulates that the solution to the environmental crisis does not lie in free-market and bureaucratic capitalist societies but in small-scale, self-sufficient, self-governing communities (Hattingh, 1999: 78; Müller, 1997: 110). Society, as proposed by this approach, will be urban and sovereignty will be at local level (Barry, 1999: 91).

*Bioregionalism* is a North-American concept concerned with the restructuring of political boundaries along ecosystem boundaries – in order for each community to be contained within a single ecosystem (Dowie, 1996: 229; Dryzek, 1997: 160). Each community will be self-sufficient (trade will be discouraged), since the approach assumes that natural diversity of resources will exist in each eco-region (Bramwell, 1994: 88). This approach implies ecological citizenship and a sense of place. Communities will live within the limits set by their environment (Barry, 1999: 85, 90; Dryzek, 1997: 160). The focus is on “... remembering and learning how to live in a place in a manner that is sustainable over time ...” (Hattingh, 1999: 78).

Bioregionalism has a host of critics. Bramwell (1994: 88) asks “... if these areas are natural units, why do they have to be planned by human beings?” The carrying capacity of each

bioregion (or calculation thereof) is never mentioned (Bramwell, 1994: 89). The assumption of sufficient distribution of resources within each bioregion can also be questioned: if trade is not allowed, what will happen to communities condemned to resource-poor bioregions (Barry, 1999: 86)? KR Miller (1996: 57) speculates that the size of a bioregion can be informed by science, technology, information and social considerations - the accepted scope of a region will be the most ecologically viable, economically practical and socially convenient. Founders of bioregionalism (e.g. Kirkpatrick Sale) indicate that the welfare of the community will take preference over individual (or minority) needs. Democracy and equality will take a back seat to communal rights (Barry, 1999: 87-88).

Bioregionalism proposes a strategy of saving the whole (the earth) by saving the parts (bioregions). This is not possible when dealing with ecosystems, since ecosystem independence does not exist (Barry, 1999: 89-90).

**TABLE 2.4**  
**COMPARISON OF RADICAL ENVIRONMENTAL THINKING**

	<b>DEEP ECOLOGY</b>	<b>ECOFEMINISM</b>	<b>SOCIAL ECOLOGY</b>	<b>BIOREGIONALISM</b>
<b>Reject</b>	Materialism Consumerism	Hierarchy Patriarchy Domination Exploitation	Hierarchy	Capitalism Destructive technology Industrialisation International trade
<b>Accept</b>	Harmony Wholeness	Justice	Small-scale Self-sufficiency Self-government	Sustainability Communalism Appropriate scale Participatory decision-making Subsistence living

(Adapted from Hattingh, 1999: 77-78.)

It is clear that there is a lack of a single coherent theory to guide ethical environmental decisions. Hattingh (1999: 68) suspects that an universal ethic is unlikely to develop in the near future and bases this statement on the ethical monism of the various approaches: "... the adoption of a single principle or a set of closely related principles on the basis of which a

comprehensive ethical theory is built ...” (Hattingh, 1999: 79). He also describes the conflict between the three positions as confrontational and adversarial (Hattingh, 1999: 78).

## **2.9 CONCLUSION**

Most economic theories relating to the urban edge is based on the experience in developed countries. Von Thünen’s model of agricultural land values may in fact still be valid in less developed countries whose agricultural sectors are not completely industrialised. Even in areas that are considered industrialised, like the Cape Winelands, other localised conditions cause deviations from the rule (refer to section 2.7).

South African planning needs an universal ethical code to guide consistent decision-making on issues relating to the natural environment. Planners are widely regarded by environmentalists as being in collusion with developers. While planners in private practice have to respect their clients’ wishes, those in the public sector should act as arbitrators between developers and environmentalists, and generally adopt a more environmentally friendly stance.

### 3. INTERNATIONAL APPROACHES TO URBAN EDGE PROTECTION

#### 3.1 INTRODUCTION

The need for urban edge protection arose in the 1800s following the Industrial Revolution in Britain. It represented the introduction of new technologies dependent on fossil fuel energy. The invention of the steam engine gave rise to unprecedented growth of urban populations. Rural unemployment soared after the industrialisation of agriculture. Rural communities were forced to seek employment in factory towns, which rapidly grew into industrial cities. Conditions in these cities were anything but desirable (Miller GT, 1996a: 36). The old “walking” cities became impossible to live in (Newman, 1997: 17). The situation was aggravated by a *laissez faire* attitude and speculation (Fishman, 1982: 11). Industrialisation and accompanying urbanisation resulted in “... problems and demands that were both quantitatively and qualitatively new ...” (Hall, 1997: 47).

Industrialisation also kindled a fascination with escape from the city – to the *picturesque countryside*. Aided by improvements in transport, housing agglomerations with rural objectives grew outside the city: the suburbs (Choay, 1969: 27-28). Suburbia represents a preference for low-density residential structure. This change in attitude accompanied by technological advances (especially in mass transportation), acted as a catalyst for unprecedented urban growth.

Urban edge protection strategies have historically had three motivations: optimal city size<sup>1</sup>, the protection of farmland and lately, the protection of both the natural and cultural (historical and agricultural) environments. In this chapter the two latter approaches for urban edge protection will be dealt with chronologically.

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<sup>1</sup> “... a size above which an increase in physical dimension decreases the advantages of agglomeration ...” (Capello & Camagni, 2000: 1479). For example Garden Cities.

### 3.2 GREEN BELTS

The green belt is a classic example of urban edge protection. It is a designated belt of open land surrounding an urban area, and serves to discourage city expansion by preventing low-density urban development in rural areas. It can accommodate a variety of activities: agriculture, recreation, restoring damaged land, protection of wildlife or greening and environmental strategies (Elson, Walker & Macdonald, 1993: viii; Gilpin, 1996: 100; Kostoff, 1992: 55; Miller GT, 1996a: 269; Nelson, 1986: 156).

The popular roots of green belts can be found in Ebenezer Howard's Garden Cities concept (Hardy, 1991: 51). The Garden City is a town of predetermined size, surrounded by an agricultural belt that prevents further urbanisation (Hall, 1997: 365). This belt is inviolate, protected by socialist ideals of communal ownership, "... to be administered in the real interests of the whole community ..." (Howard, 1966: 140).

The best-known example is the London Green Belt, established by the Green Belt Act (1935), the Town and Country Planning Act (1947) and generalised in 1955 to apply to other large cities in the UK (Carter, 1990: 13).

Originally intended to prevent continued growth of cities, prevent merging of neighbouring towns, preserve the special character of towns, protect good agricultural land and green spaces, and to retain traditional rural scenery; green belts currently serve to prevent low-density sprawl, direct development inwards (brown fields development) and satisfy aesthetic considerations (Carter, 1990: 13, 178). A detailed history of green belts can be found in Claassen (1975: 22-56), where several examples are also discussed.

The history of the London Green Belt can be divided into three periods (Bryant et al, 1982: 216-217; Harvey, 1996: 244):

- 1950s: when urban containment was the most important function;
- 1970s: the green belt policy was criticised for lack of attention paid to other functions (especially recreational activities);
- 1990s to present: the protection of the natural environment is the most important function. The British green belts are still surrounded by controversy. Some argue that green belt policy is outdated (Consultant in call to overhaul green belt, 2000: 3; Herington, 1990: 43). The preservation of farmland is no longer an issue: today the conservation of the countryside is considered more important. In fact, sustainability and the environment are central to agriculture and rural policy (Herington, 1990: 40; Leake, 2001).

The permanence of the green belt is constantly questioned – should the green belt be moved when confronted by development pressures, or should urban development jump over it (leapfrog) (Lee & Fujita, 1997: 1999)? Developers argue that the limitation of free operation of the land market in the green belt leads to inflated inner-city land and housing prices (Carter, 1990: 12, 178; Harvey, 1996: 244).

Westaway et al (1990: 20-23) avers that although public interest limits development in the London Green Belt, its inviolate character has been corrupted. Prominent examples include the construction of the M25 freeway and the Golden Triangle shopping centre. The M25 freeway, it was argued, would benefit mobility and tourism. It is almost completely contained within the Green Belt, fragmenting the Green Belt thereby making it vulnerable to development. The location of the Golden Triangle out of town (regional) shopping centre was informed by accessibility, despite public opposition.

This demonstrates that the British “socialist” system is steadily moving in the direction of American capitalism (Hall, 1996: 307). The British Green Belts, however, remain an effective control over urban sprawl. It has generally retained its inviolate character. Controversy surrounds small intrusions into the green belts. The future of green belt policy in general is unquestionable.

The success of green belt policy in Britain can almost wholly be ascribed to strong public support. Unfortunately, public opinion in South Africa is directed at more pressing issues than urban sprawl. Public support of green issues is limited to those who can afford to dedicate their time to lobbying.

Green belt policy remains one of the most successful in curbing urban sprawl. Claassen (1975) proposed a green belt system for Metropolitan Cape Town, but the closest that the metropole has come to such a system is the Metropolitan Spatial Development Framework's Metropolitan Open Space System (MOSS).

Strategic gaps, green wedges and rural buffers are being considered as an alternative for green belts in Britain.

### **3.3 GROWTH MANAGEMENT**

Urban sprawl is claiming American farmland at the rate of 485 640 hectares per year (Mitchell, 2001: 58) – a direct result of the country's "... free-market growth ideology which promotes private development interest and significantly rejects governmental intervention in spatial planning..." (Evers, Ben-Zadok & Faludi, 2000: 7, 13), sometimes referred to as a frontier mentality (Miller GT, 1996: 37).

America's state-wide growth management legislation (established in the 1970s) - aimed at balanced growth - regulates the location, intensity and timing of development to minimise the negative environmental, social and fiscal impacts of growth. The Growth Management package may include conventional subdivision and zoning regulations, urban edge lines and phased development (Landis, 1992: 490-491).

Florida is the leader in the field of the eight U.S. states that have adopted the legislation; and is also regarded as the growth management leader on the North American continent. Florida's Local Government Comprehensive Planning and Land Development Regulation Act (also known as the Growth Management Act) was passed in 1985, and requires municipalities to draw up comprehensive plans and submit them for state approval (Evers et al, 2000: 7-8). Florida's growth management legislation focuses on the designation of areas of critical state

concern and is generally more balanced in economic and environmental terms than other states' legislation (Bollens, 1992: 460).

One way of managing growth is by the *transfer of development rights*, first suggested by Eliel Saarinen in his 1943 book *The City* (Lai, 1988: 157). Two approaches can be followed: community purchase of development rights to agricultural land (most popular approach) or the establishment of preservation or protection zones. The purpose of transfer of development rights is to protect natural resource areas, and involves the severing of a development right from a site that the public wishes to remain in a low-density state and transferring that right to another site where more intensive development are tolerated. The owner of the preserved site retains existing use rights while receiving compensation from the buyer (either public or private) of the development rights. Market demands (urban development pressure) determines the cost of development rights (Furuseth & Pierce, 1982: 47-48; Platt, 1996: 314-315).

Complications can arise from the transfer of development rights strategy. It requires a market for transfer of development rights: neighbours of a receiving site may object to the granting of higher density development rights (it harms their property values) and could "... demand to be similarly rezoned, thereby eliminating the incentive for further purchases of development rights ...", thereby ruining the market (Platt, 1996: 315).

When transfer of development rights is applied to agricultural land, it generally works best with farmland at a distance from urban areas. Farmers on agricultural land adjacent to urban areas experience an expectation of urban development, and are therefore hesitant to participate (Nelson, 1992: 470).

Growth management in the United States of America is still few and far between. Capitalism rules and private over public interest is protected by their Constitution's Fifth Amendment. The success of transfer of development rights policies is uncertain; it depends on too many variables to function properly.

### 3.4 URBAN GROWTH BOUNDARIES

An urban growth boundary is a line surrounding a city beyond which new urban development is not permitted (Miller, 1996: 269). The state of Oregon initiated this approach in 1973 by enacting legislation (the Oregon Land Use Act) that requires its 240 cities to establish urban growth boundaries to control suburban sprawl. The purpose is to protect farmland. The policy is centred on the Willamette Valley (the state's most urbanised area) representing 10% of Oregon land, but containing one third of the state's prime agricultural land (Daniels & Nelson, 1986: 22; Gustafson, Daniels & Shirack, 1982: 370; Nelson, 1992: 472).

The urban growth boundary is one of a package of techniques employed by Oregon. It also includes right-to-farm laws (that prevents urban residents from filing nuisance complaints against farmers on the urban edge), exclusive farming districts (devoted to commercial farming and zoned for exclusive farm use) and exurban districts (Gustafson et al, 1982: 367; Nelson, 1992: 470, 472, 479).

The urban growth boundary is divided into three parts: the intermediate growth boundary, the urban growth boundary and the ultimate growth boundary. The intermediate growth boundary is urbanised, while the urban growth boundary will be completely urbanised within 20 years. The ultimate growth boundary indicates the maximum extent of urban development. The area immediately inside the ultimate growth boundary is known as the urban reserve (Nelson, 1992: 480).

However, Nelson (1992: 473, 481) criticises the establishment of exurban or rural residential districts beyond the urban growth boundary weakens the approach. These districts were created in reaction to the reality that although agricultural land outside the urban growth boundary must be preserved, developed (built-on) rural land exists. Rural residential districts were devised as an exception category for rural land, catering to hobby farmers. They are located on lower potential agricultural land away from commercial farming areas. The essential flaw of exurban districts is its location and lot sizes: five, ten and twenty acre minimum lots are unmanageable for hobby farmers who only require one or two acres. According to Nelson, the exurban districts should have been included into the urban reserve on smaller lots, where residents can still enjoy the amenity value of the adjacent rural setting.

According to Mitchell (2001: 65-67) the city of Portland's growth boundary is also criticised for not being flexible enough and having raised housing prices. This approach has been described as "... top-down command-and-control planning ..." (Gordon & Richardson, 1997: 97), which is understandable in the American context of capitalist ideology.

Knaap & Hopkins (2001: 316-317) aver that the time-driven approach to periodic urban growth boundary adjustment (every 20 years) may lead to land price inflation: "... if growth occurs faster than expected, developable land supplies will become exhausted, or excessively depleted..." They recommend that urban growth boundaries not be expanded at predetermined times, but when the urban growth boundary reaches a predetermined level - that the frequency and size of expansion be emphasised (Knaap & Hopkins, 2001: 318, 325).

The American urban growth boundary idea is widely criticised (Nelson, Mitchell, Gordon & Richardson). The urban growth boundary policy can be compared to the Metropolitan Spatial Development Framework's Urban Edge demarcation. The application of exurban districts in South Africa could be hampered by minimum lot sizes. Smallholding zoning is expected to be phased out entirely in the Western Cape, and the subdivision of farms will only be allowed if it can be proven that the smaller units will be more economically productive (refer to section 4.5.4).

### **3.5 MAN & THE BIOSPHERE (UNESCO)**

The UNESCO's (United Nations Educational, Scientific and Cultural Organisation) Man & the Biosphere (MAB) Programme (created in 1970) was the "... first international effort to develop the knowledge, skills and cooperation required to sustain harmonious relationships between people and nature ..." (Babbit, 1999: 1).

The Programme proposed a world network of biosphere reserves (launched in 1976): geographic areas for the integration of conservation and sustainable development (Gregg, 1999: 24).

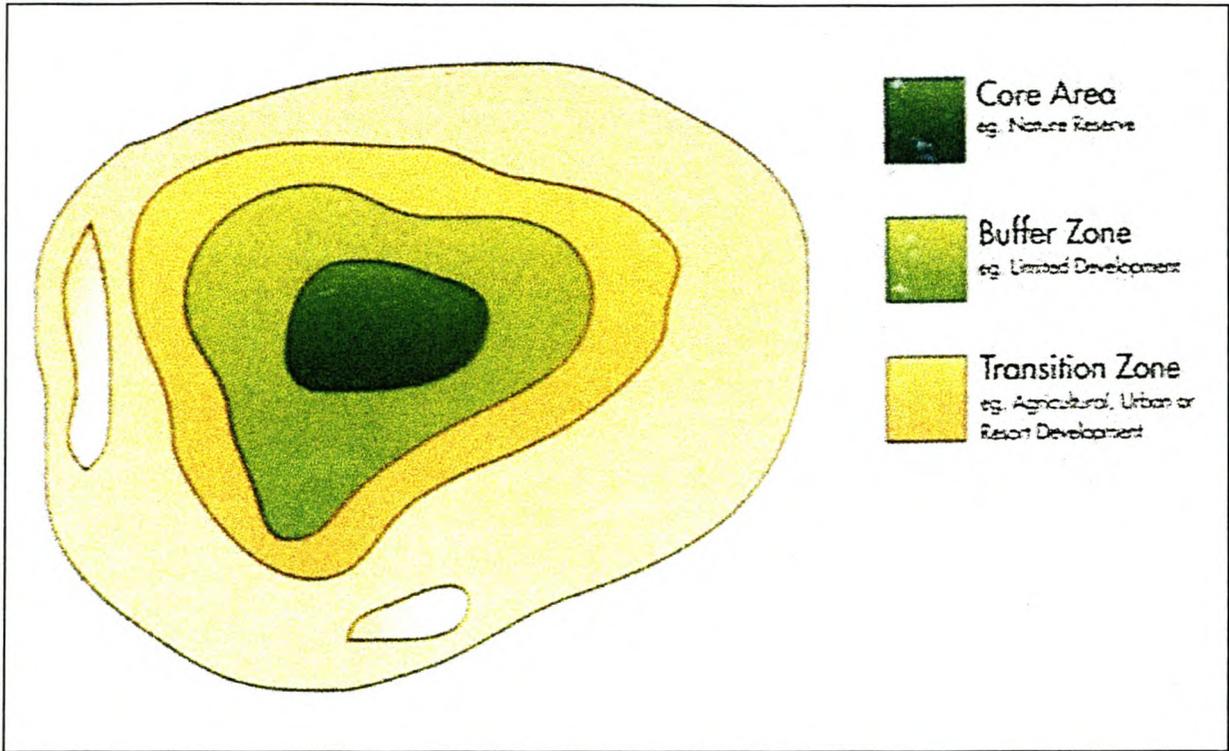
Each biosphere reserve should be large enough to perform three basic functions (Gregg, 1999: 25; Wangari, 1997: 25):

- conservation (to preserve genetic resources, ecosystems, landscapes and species);
- sustainable development (to reconcile conservation and sustainable exploitation); and
- logistical support (for education and research).

Biosphere reserves consist of three structural elements (see Table 3.1 and Figure 3.1): the core area, buffer zone(s) and transition zone(s). In the core area human activity should be limited to a minimum in order to provide long-term protection. In the buffer zone(s) resource using activities should be limited to protect the core area. It is intended to provide opportunities to develop and demonstrate approaches for using and managing resources while maintaining natural processes. The transition zone(s) surrounds the core area and buffer zone(s), and allows a variety of resource uses and human activities to involve local communities in sustainable resource management. There may be agriculture and human settlements in the transition zone (Gregg, 1999: 25; Park, 1997: 466; Wangari, 1997: 25). It is recommended that countries enact legislation to set up their biosphere reserves (Wangari, 1997: 25).

The application of biosphere reserves in South Africa will be difficult. Many prime natural environments exist near cities (e.g. Table Mountain in Cape Town), which are not provided for in biosphere reserve theory. Three biosphere reserves have been established in South Africa: the Cape West Coast, Kogelberg and Waterberg biosphere reserves.

Dennis Moss Partnership has applied and adapted biosphere reserve principles to create the Bioregional Planning Framework for the Western Cape Province (2000), but has largely ignored the urban-rural interface (refer to section 4.6).



(Source: International first for conservation, 1999: 67.)

**FIGURE 3.1**  
**BIOSPHERE RESERVE ZONES**

**TABLE 3.1**  
**BIOSPHERE RESERVE ZONES**

ZONE	DEFINITION	FUNCTIONS
<b>Core Area</b>	Natural area of conservation importance.	Biodiversity conservation. Ecosystem conservation. Water conservation. Research. Environmental education. Non-consumptive land uses. Ownership: public, private, NGO's
<b>Buffer Zone</b>	Natural area surrounding core area.	Protecting core area. Enhancing natural functioning of core area ecosystems. Low-impact land uses. Environmental education. Ownership: private, community
<b>Transition Zone</b>	Defined zones surrounding buffer zone, representing development areas. Also known as zones of co-operation.	<u>Transition Zone 1:</u> Natural and cultural environment of high value. Low-impact land uses (e.g. eco-tourism). <u>Transition Zone 2</u> Activities that extract natural resources and supply food and other primary material sources (e.g. agriculture, forestry and mining). <u>Transition Zone 3</u> Urban areas with high intensity of human activity (small towns to metropolitan areas). Ownership: private, community

(Adapted from Moss, 1999: 133; Provincial Administration of the Western Cape, 2000: 66-67.)

### 3.6 STRATEGIC GAPS, GREEN WEDGES AND RURAL BUFFERS

Other tools used in Britain to curb urban sprawl are strategic gaps, green wedges and rural buffers, already in use in 17 county councils. These measures intend to manage development at the edges of towns and cities (Elson & Nichol, 2001: 10).

*Strategic gaps* are used to protect the separate identities of settlements, to ensure coherent settlement structure, and to provide access to the countryside. It has the permanence of structure plans (Elson & Nichol, 2001: 10; UKDETR, 2000). Strategic gaps can be up to 3.2 kilometres wide and may take up "... no more land than is necessary for protection where there is a real risk of coalescence ..." (UKDETR, 2000).

*Green wedges* are used to protect "... structurally important areas of open land as development extends ..." (UKDETR, 2000) and thereby shape urban growth. It can penetrate urban areas to provide greenways and enhance links between urban areas and the countryside. In rural areas green wedges can be up to 6.4 kilometres wide, while in urban areas it is restricted to a maximum of 1,6 kilometres (one mile) (Elson & Nichol, 2001: 10; UKDETR, 2000).

*Rural buffers* are used to avoid coalescence between towns and villages until the long-term direction of growth in the area has been decided – thereafter it can be abandoned or included in a green belt. A rural buffer can be up to 8 kilometres and may be revised at reviews of the structure plan (Elson & Nichol, 2001: 10; UKDETR, 2000).

These strategies mainly differs from green belt policies in their protection of villages from coalescence with towns (UKDETR, 2000). They may be more appropriate in areas where the original purpose of green belts has disappeared (Dewar, 2001: 1). It appears as though strategic gaps, green wedges and rural buffers could be used to complement green belt policy.

### 3.7 SMART GROWTH

According to Gleeson (2000: 269) Americans have at last begun to acknowledge the problem of their sprawling cities. Their new approach is called *smart growth*: an attempt to curb sprawl by "... building better kinds of new communities, by fixing up and filling in the old ones, by finding ways to get people out of at least some of their cars, and by going out into the countryside to preserve large tracts of open space before the developers can pave them..." (Mitchell, 2001: 63). These noble ideals are not new, but their implementation could be hampered by a lack of public support. Americans are constantly warned about their sprawling cities, but little is done as their frontier mentality persists.

### 3.8 CONCLUSION

South Africa should guard against the import of international ideas that are not based in a similar reality. South Africa's urban periphery has more in common with other third world countries than with more developed ones (e.g. squatting on peripheries). Third world countries have generally not implemented innovative ideas, preferring to import foreign approaches. They often choose to use balanced regional growth strategies to limit urban growth (United Nations, 1995: 7, 9, 16-17, 64, 75). South African attempts, like industrial decentralisation and influx control, in fact attributed to the growth of informal settlements on urban peripheries (Gelderblom & Kok, 1995: 165-168).

Although South Africa and the United States of America both were British colonies, South Africa exhibits more similarities with British planning than the USA. South Africa may however not be able to generate sufficient public support to drive a green belt policy as is done in Britain.

Financial constraints may inhibit South Africa's ability to implement international approaches – the funding available, it can be argued, should rather be used for the government's land reform programme or other pressing matters (e.g. low-cost housing, upgrading of informal settlements and infrastructure, and public health programmes).

## **4. CAPE METROPOLITAN APPROACHES TO URBAN EDGE PROTECTION**

### **4.1 INTRODUCTION**

The population of the Cape Metropolitan Area is growing rapidly, causing fast horizontal urban growth resulting in urban sprawl. Additional stresses, for example fragmented and uncoordinated planning and management, have added to the situation. High quality agricultural land is particularly vulnerable, including the Boland area (Quick & Pistorius, 1994: 48, 51, 54). Dewar (1995: 409) ascribes the sprawling spatial pattern of the Cape Metropolitan Region to profit-driven speculation, state-driven low-income housing schemes and squatting. Contemporary South African city structure still reflect the spatial pattern affected by segregation policies, especially squatting on city peripheries.

The Cape Metropolitan Area has attempted to manage the urban edge with a number of policy instruments. These include:

- guide plans;
- the Greening the City strategy;
- structure plans;
- the Metropolitan Spatial Development Framework; and
- the Bioregional Framework for the Western Cape Province.

### **4.2 GUIDE PLANS**

Guide plans were introduced by the Physical Planning Act (88/1967: section 6A) to outline policy for future development, growth and change (Cape Metropolitan Planning Committee, 1977: 1). Guide plans for the Cape Metropolitan Area (1977), Stellenbosch (1986), Paarl/Wellington (1991), the Peninsula (1988) and Hottentots-Holland Basin (1988) were adopted.

The Cape Metropolitan Area's Guide Plans did not establish any official urban edges, but did provide for the protection of *agricultural land* (Cape Metropolitan Planning Committee, 1988: 13, 43). Further expansion of the metropole was to be directed northwards, along the West Coast in the direction of Atlantis, where the agricultural potential of land is much lower than to the east and northeast of the metropole.

The guide plans promoted a more compact urban structure and higher residential densities around activity nodes (Cape Metropolitan Planning Committee, 1977: 53, 65; 1988: 13).

The historical character of settlements in the eastern part of the Cape Metropolitan Area was acknowledged: primarily for its role in tourism, and food and wine production (Cape Metropolitan Planning Committee, 1977: 45, 79). The desire to protect these areas from urban expansion was expressed (Cape Metropolitan Planning Committee, 1977: 37). The guide plans acknowledged the threat to high potential agricultural land in the Paarl/Wellington and Stellenbosch areas (Cape Metropolitan Planning Committee, 1988: 43, 48, 104). The protection of good agricultural land was to be a priority at all times; intensive or extensive urban development of agricultural land was only to be allowed in highly exceptional cases. The Stellenbosch Guide Plan (1986: 74) argues that the area's agricultural land be retained due to its productive value and the cultural value of historic farms.

Paarl's urban edge is blurred by the existence of small farms within the town. Interestingly, several farms within Paarl's built-up area were preserved utilising the Subdivision of Agricultural Land Act (70/1970). The Paarl/Wellington Guide Plan (Cape Metropolitan Planning Committee Cape Metropolitan Area, 1991: 38) states that future expansion will depend on the development of existing erven, since both Paarl and Wellington is surrounded by high potential agricultural land. No provision was made for extensive rural residential development. The Guide Plans restricted the establishment of new smallholding complexes (with minimum lot sizes of two hectares) (Cape Metropolitan Planning Committee, 1988a: 13, 17).

The guide plans proposed the establishment of additional nature reserves and discouraged township development in mountain areas (Cape Metropolitan Planning Committee, 1988a:

15). It is generally accepted that the guide plans did not give sufficient protection to the urban edge, agricultural land or the natural environment.

### **4.3 GREENING THE CITY**

The Greening the City strategy was created in reaction to increased pressure of indiscriminate development on the remaining natural and open spaces in the city (Cape Metropolitan Area, 1982, 2.3).

It was the first such report to be published by any city authority, only preceded by Claassen's 1975 proposal for a Green Belt System for the Cape Metropolitan Area (Poynton & Roberts, 1985: 34). Greening the City aimed at establishing a cohesive pattern of open spaces by creating a "Coast to Coast Greenway", stretching from Table Bay to False Bay (Cape Metropolitan Area, 1982, 1.4).

The report argues that an open space system could help to structure the city on a large scale by providing a framework for urban growth and by defining edges (Cape Metropolitan Area, 1982, 2.11).

The strategy includes measures pertaining to (Cape Metropolitan Area, 1982, 2.25–2.31):

- conservation areas (areas of ecological significance);
- mountain areas (the management of Table Mountain for conservation and recreational use);
- the coastline (the protection of scenic and amenity value);
- rivers and vleis (the protection of rivers and vleis, and improvement of water quality);
- major routes (the landscaping of major arterial and approach routes to Cape Town);
- urban trails (the establishment of a system of trails and greenways);
- sports areas (extension of the range of sports areas and integration with parkland);
- urban parks (improvement and diversification); and
- neighbourhoods (improvement and increased opportunities for play and socialising).

#### **4.4 STRUCTURE PLANS**

The Western Cape Land Use Planning Ordinance (Ordinance 15 of 1985) made the drafting of structure plans compulsory. Structure plans were intended to contain guidelines for future spatial development (Western Cape Province, 15/1985, section 5.1).

The Stellenbosch Local Structure Plan (Stellenbosch, 1990b: 42) emphasised the importance of protecting both natural and cultural (excluding agriculture) environments. Although urban pressure on agricultural land is recognised, no specific guidelines to manage the urban edge is set (Stellenbosch, 1990a: 14). Structure plans ignored the importance of demarcating an urban edge.

#### **4.5 METROPOLITAN SPATIAL DEVELOPMENT FRAMEWORK**

##### **4.5.1 Introduction**

The Metropolitan Spatial Development Framework (hereafter “the Framework”) was created in response to a need for co-ordinated physical planning and development within the Cape Metropolitan Region (Cape Metropolitan Council, 1996: 1, 3, 6). It consists of several documents and related reports:

- Framework Technical Report (1996);
- Statutory Framework (1999);
- Framework Handbook (2000);
- Northern Metro urban edge study;
- Helderberg urban edge study; and
- Peninsula urban edge study.

##### **4.5.2 General principles and guidelines for the urban edge**

The Framework provides guidelines for, amongst others, the direction of physical growth at metropolitan scale (Cape Metropolitan Council, 1996: ix). It intends to contain sprawl by protecting and managing vulnerable areas, and direct development inwards (Cape Metropolitan Council, 2000: 7).

The Framework identifies two main areas where sprawl is the greatest threat: the Northern Metropolitan region and the Helderberg (refer to Figure 4.1) (Cape Metropolitan Council, 1996: 17). Draft urban edge studies have been completed for these areas, as well as for the Cape Peninsula.

The Framework identifies the urban edge as a structuring element for the Cape Metropolitan Region. The urban edge should function to contain urban sprawl, re-orientate growth expectations, protect significant environments and resources, densify built environments, restructure growth patterns (from outward to inward) and to rationalise service delivery systems (Cape Metropolitan Council, 1999a: 12-13). Great concern is expressed over the urban edge of the inner Cape Metropolitan Region (the Cape Metropolitan Area) (Cape Metropolitan Council, 1996: 57).

Elements associated with the urban edge include (Figure 4.2) (Cape Metropolitan Council, 2000: 37):

- the *urban edge line* (a legally defensible line defining the outer limits of urban expansion);
- the *urban fringe* (a transitional zone);
- the *urban edge management zone* (on either side of the urban edge line, consisting of:
  - A. the *urban transition zone* (within the urban edge),
  - B. the *non-urban zone* (outside the urban edge); and
- the *urban reserve* (within the urban fringe where new development is possible).

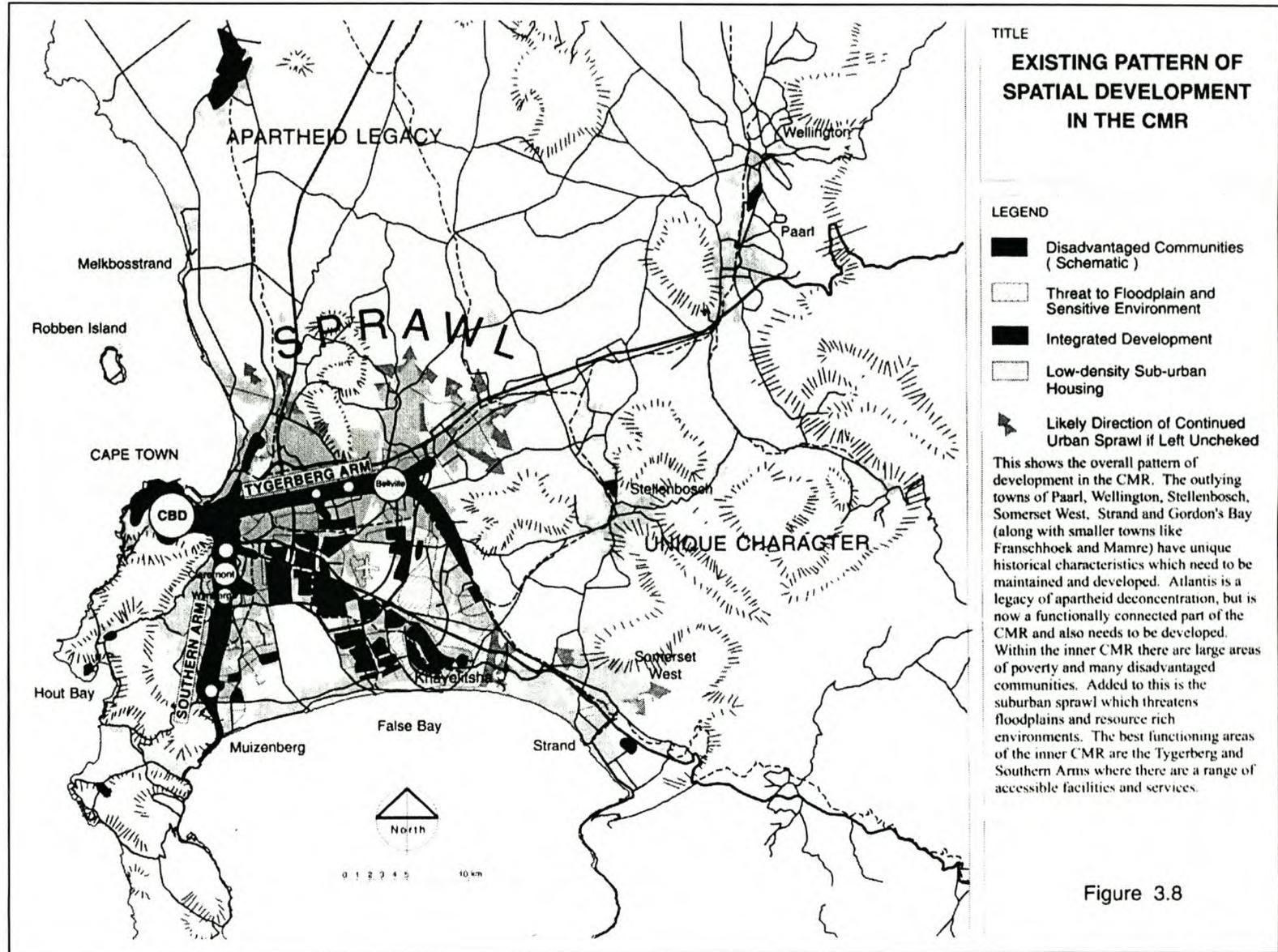
Specific management principles regarding these zones are not mentioned. It may be possible to use special management areas to regulate the urban transitional zones (the urban fringe, urban edge management zones and the urban reserve).

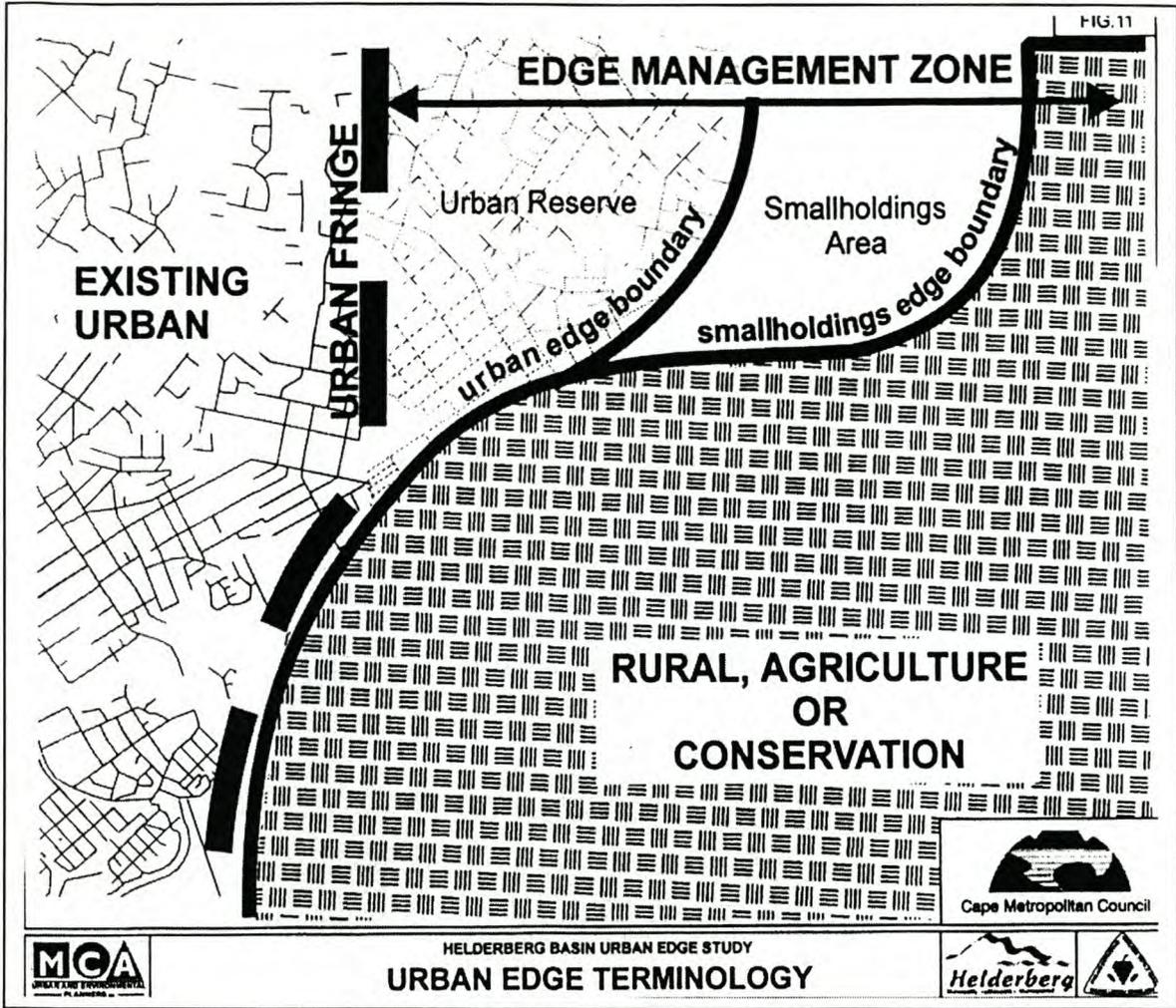
The Framework lists guidelines for the preparation and evaluation of development applications, rezonings and Local Spatial Plans and Frameworks. Thereby, critical areas where development should not be allowed, should be identified, agricultural potential evaluated, new growth and redevelopment areas identified and procedures for amending the urban edge be established (Cape Metropolitan Council, 2000: 34-36).

THREAT OF SPRAWL IN THE CAPE METROPOLITAN AREA

FIGURE 4.1

(Source: Cape Metropolitan Council, 1996: 17.)





(Source: Cape Metropolitan Council, 1998: 33.)

**FIGURE 4.2**

**STRUCTURAL ELEMENTS OF THE URBAN EDGE**

**4.5.3 Demarcation**

The demarcation of the urban edges, as indicated in Figure 4.3, was based on existing structure plans and urban development rights, services in place, water features, protective environmental designations, cultural and historic precincts and agricultural areas (Cape Metropolitan Council, 1996: 59-60).

The Cape Metropolitan Council (1996c:14) proposed that the legal delineation of an urban edge for the Cape Metropolitan Region will be done in accordance with the Statutory Framework. Hereby, urban development outside the urban edge will only be allowed in the

direction of the Atlantis Growth Axis<sup>2</sup>, and only after all available land within the edge has been developed (Cape Metropolitan Council, 1999c: 14). Local authorities are urged to do detailed studies of their local urban edges and formulate land use policies to manage the edge (Cape Metropolitan Council, 1999c: 14).

The Statutory Framework delegates edge demarcation and management (including policies, strategies and mechanisms) to the then metropolitan local councils, but states that development proposals that will have an important impact on or amend the edge, be referred to the Cape Metropolitan Council for comment (Cape Metropolitan Council, 1999c: 14).

#### **4.5.4 Agricultural land**

The Framework intends to protect high and medium-high quality soils, all currently cultivated land and agriculturally zoned land. Marginal agricultural land may be included in urban development. It is proposed that all currently cultivated land and agriculturally zoned land be designated “Metropolitan Agriculture Land” (Cape Metropolitan Council, 1996: 60). Proposals to subdivide agricultural land should demonstrate a more economically sustainable farming activity and all gainfully farmed land should be excluded from the urban edge (Cape Metropolitan Council, 2000: 42).

The Northern Metro Urban Edge Study suggests that agricultural potential is an insufficient demarcation informant, and proposes other measures for agricultural land: intrinsic production value resulting from nature, enhanced value resulting from improvements, relational value resulting from location and amenity value resulting from its beauty, uniqueness or sense of place (Cape Metropolitan Council, 1999a: 40).

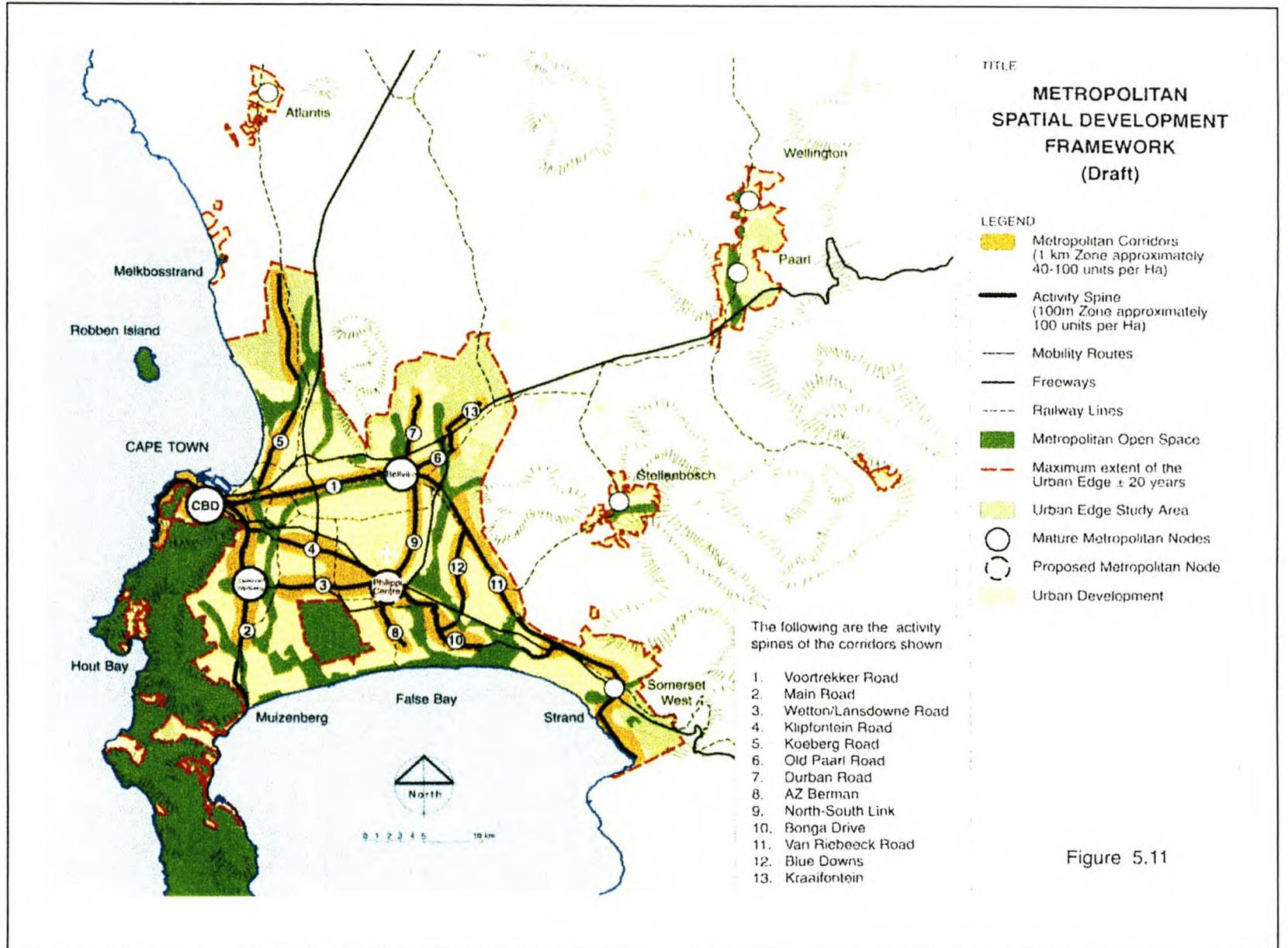
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<sup>2</sup> The Atlantis Growth Axis runs in a northerly direction along Koeberg Road (refer to Figure 4.3).

DEMARICATION OF URBAN EDGES IN THE CAPE METROPOLITAN REGION

FIGURE 4.3

(Source: Cape Metropolitan Council, 1996.)



#### **4.5.5 Smallholdings**

The controversy around smallholdings (whether it should be regarded as part of the city) is addressed by the Framework. It is suggested that land classified as the zoning category “smallholding” should be reclassified as either extensive residential (with residential, farming, riding schools, nurseries, farm stores and farm stalls as primary uses) or intensive agricultural, and that the smallholding category be entirely phased out (Cape Metropolitan Council, 2000: 42, Helderberg Municipality, 2000: 15).

Although smallholdings are being excluded from the urban edge, the Helderberg Municipality’s Policy Guidelines for Development within Helderberg Smallholding Areas (Helderberg Municipality, 2000: 15) compares advantages and disadvantages of the inclusion and exclusion of smallholding areas. If smallholdings are included within the urban edge, the edge will clearly differentiate between rural and urban land uses (Helderberg Municipality, 2000: 12). If smallholdings are excluded from the urban edge, it will serve as “buffer areas” separating urban and rural land uses. Excluding smallholdings will necessitate a smallholding edge (Helderberg Municipality, 2000: 13).

Smallholdings are currently excluded from the urban edge, but when they are reclassified, the urban edge would have to be moved to include those classified as extensive residential.

#### **4.5.6 Development beyond the urban edge**

Policy 25 of the Framework (Cape Metropolitan Council, 1996: 60) states “... development should be largely prohibited beyond the urban edges ...”, subject to policy 26 that provides for tourism, hotels/resorts, nurseries, cemeteries, forestry, fire protection facilities and development associated with farming to be allowed beyond the urban edges (Cape Metropolitan Council, 1996: 60). Specific uses for rural land with low agricultural potential outside the urban edge are prescribed: sustainable agricultural production, farm worker housing or guest cottages, rural-based institutions, recreational activities (that utilise the rural setting and are not space-extensive) and activities associated with tourism. Uses that will not be allowed beyond the urban edge include: retirement villages, residential developments, golf courses and golf estates, and any commercial, office or industrial developments (Cape Metropolitan Council, 2000: 43).

The Helderberg Urban Edge Study recommends that agricultural villages (“hamlets”) should not accommodate spill-over growth from urbanised areas; and that the Subdivision of Agricultural Land Act (South Africa, 70/1970) not be repealed without an efficient policy to replace it (Cape Metropolitan Council, 1998: 56, 58).

#### **4.5.7 Development within the urban edge**

An additional measure for relieving pressure from the urban edge is included in the Framework: the “... release of vacant and under-utilised land within the built-up area to cope with demand for urban development...” (Cape Metropolitan Council, 1996: 60). Residential estates should be included into the urban edge (Cape Metropolitan Council, 2000: 42).

#### **4.5.8 Urban edges of outlying towns within the Cape Metropolitan Region**

Attention is given to the risk of the Cape Metropolitan Region’s sprawl to outlying towns (e.g. Stellenbosch, Paarl, Wellington, Franschhoek, Somerset West, Strand, Mamre and Gordon’s Bay), and it is suggested that these towns implement policies to protect their local edges (Cape Metropolitan Council, 1996: 60).

#### **4.5.9 Conclusion**

The Framework is a comprehensive strategy guiding a host of spatial challenges at metropolitan level (the Municipal Spatial Development Framework directs planning at a more localised level).

### **4.6 BIOREGIONAL PLANNING FRAMEWORK FOR THE WESTERN CAPE PROVINCE**

The Bioregional Framework for the Western Cape Province (hereafter “the Bioregional Framework”) is an adaptation and elaboration of the biosphere reserve concept. The Western Cape province is currently considering implementing it on provincial level. The Provincial Administration of the Western Cape Province (2000a: 1) suggested that the Bioregional Framework should be implemented in accordance with the Western Cape Planning and Development Act (7/1999) – the Schedule 4 principles and Integrated Development Framework sectoral and spatial plans (Provincial Administration of the Western Cape, 2000a: 1).

Bioregional planning is based on the following guidelines (Provincial Administration of the Western Cape, 2000a: 40):

- each region will be an integrated system;
- each region influences and is influenced by larger and smaller systems;
- people will be the central element in the system;
- economic policy will be related to environmental carrying capacity;
- promote technology that allows effective resource use;
- users of resources will pay the full social cost of the benefits they enjoy; and
- planning of region will be in context of the whole.

The Framework creates Spatial Planning Categories and Sub-categories (see Table 4.1) within the larger context of the three Biosphere reserve zones. The Western Cape Province has been divided into preliminary bioregions (see Figure 4.4).

It is not clear where the urban edge will fit into this system. The Winelands Integrated Development Framework (as an application of bioregional planning) recommends that smallholdings be contained in areas with marginal agricultural land (Winelands District Council, 2000b: 90).

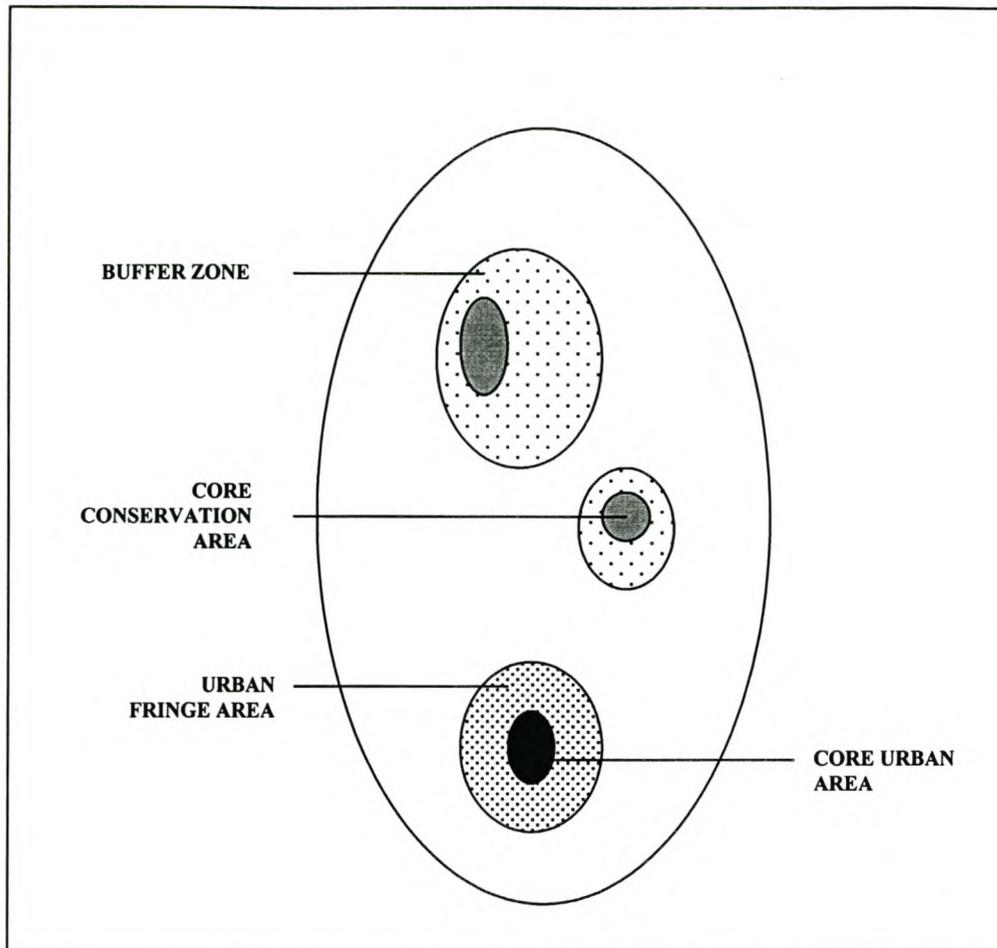
Mr ACK Kannenberg (personal communication, February 28, 2001) questions the role of core areas. He proposes that a distinction be made between core conservation and core urban areas (a dual core model) in order to provide for urban growth and expansion. Core conservation areas should accommodate the preservation of the natural environment, and be based in bio-centric philosophy; while core urban areas could be managed in an anthropocentric manner. The two types of core areas would be mutually supportive. The proposed dual core model would consist of urban and conservation cores, surrounded by their appropriate buffer zones (urban core surrounded by an urban fringe), and transition zones that allow agricultural and traditional rural uses (Outeniqua Spatial Development Framework, as cited by Mr ACK Kannenberg, personal communication, 2000:7).



**TABLE 4.1**  
**SPATIAL PLANNING CATEGORIES (SPC) AND SUB-CATEGORIES**

SPC	SUB-CATEGORIES	GENERAL	SUBDIVISION	CONDITIONS
A	Core Area		No	
B	Buffer Zones a. Public conservation areas b. Private conservation areas c. Ecological corridors d. Rehabilitation areas		No Conditional Conditional	Special Management Areas to be established.  EIA <sup>3</sup> undertaken.
C	Agricultural Areas a. Extensive agricultural use b. Intensive agricultural use	This category is consistent with Biosphere Reserve Transition Zone 2.  Represents urban-rural interface.  Opportunities for small-scale, low-impact resort development and associated recreational activities.  Low-impact land uses. Including catchment areas.  Conventional intensive agriculture. Extraction of natural resources.	Department of Agriculture regulations.	Special Management Areas to be established.  No sprawl allowed.  New developments must be compact units.
D	Urban-related Areas a. Metro/district town b. Main local town c. Local town d. Rural settlements e. Institutional settlements f. Agricultural nodal settlements g. Farmsteads h. Resorts			
E	Industrial Areas			
F	Surface infrastructure and buildings			

(Adapted from Provincial Administration of the Western Cape, 2000a: 76-95; Winelands District Council, 2000b: 184-185.)



(Source: Outeniqua Spatial Development Framework, as cited by Mr ACK Kannenberg, personal communication, 2001.)

**FIGURE 4.5**  
**PROPOSED DUAL CORE MODEL**

Reaction to the Framework is varied. Since it is based on an international concept (originally North American), its feasibility in South Africa can be questioned on many levels. The biosphere reserve concept is based in bioregional philosophy that is steeped in controversy (refer to section 2.7). The Framework is based on the biosphere reserve concept, that has traditionally ignored the role of urban areas.

It is important that constructive criticism, like that offered by Mr Kannenberg, be seriously considered and possibly included in the Bioregional Framework.

#### 4.7 THE STELENBOSCH STRATEGY

The Stellenbosch Integrated Development Plan (Stellenbosch Town Council, 1999: 1) provides various goals and strategies to manage urban growth. Broad goals include: sustainable future growth and development, achievement of an optimum relationship between the preservation of agricultural land and the containment of development, and densification (Stellenbosch Town Council, 1999:1). Specific goals that may have an impact on urban growth of Stellenbosch are those regarding the natural environment and housing (Stellenbosch Town Council, 1999: 3-11).

The natural environment goals include (Stellenbosch Town Council, 1999: 4-6):

- the conservation of agricultural land (cultivated or not);
- a fixed urban edge; and
- the establishment and proclamation of a biosphere reserve system and applicable zoning principles.

The Stellenbosch Integrated Development Plan (Stellenbosch Town Council, 1999: 5) provides that the urban edge be reviewed every 10 years, with sufficient provision for future growth. Current land use must be optimised before areas inside the urban edge, suitable for urban development, are identified.

The promotion of higher housing densities and denser new housing schemes are specific housing goals mentioned by the Stellenbosch Integrated Development Plan (Stellenbosch Town Council, 1999: 10-11). The Town Council plans to achieve these goals by allowing additional dwelling units on an erf without subdivisions, and a reduction of minimum lot sizes.

Within this context, the Stellenbosch Town Council has produced a draft Spatial Development Framework. Policies pertaining to sustainable development, the natural and cultural landscape, housing and densification are described in detail. These policies are based on the Integrated Development Plan principles mentioned above.

Stellenbosch Municipality will aim to achieve sustainable development by limiting the urban edge to the extent of current urban development (Stellenbosch Town Council, 2001: 5-6).

Policies regarding housing include the identification of urban infill sites and subjecting "... land identified for ... urban development outside the current urban edge ... to the most stringent environmental impact assessment ..." (Stellenbosch Town Council, 2001: 28). Redundant public open space may be considered as urban infill sites (Stellenbosch Town Council, 2001: 29).

Housing densities within the Stellenbosch urbanised area may be raised to 25 dwelling units per hectare (currently averaging 12 dwelling units) (Stellenbosch Town Council, 2001: 30).

Ms A Nieuwoudt (personal communication, September 11, 2001), at Stellenbosch Municipality, maintains that the current urban edge demarcation was done in accordance with the wishes of Stellenbosch residents. Urban edge sites for future urban expansion, as well as urban infill sites, were identified and are indicated in Figure 6.1. Although development applications outside the Stellenbosch urban edge will be considered, future development outside the urban edge (if any) will be focussed on the identified urban edge sites. The Stellenbosch urban edge is currently a single demarcated line, and together with other proposals in the draft document, are still subject to public comment. Zones associated with the urban edge (refer to section 4.7) have not been identified.

#### **4.8 CONCLUSION**

Some of the policy instruments discussed in this chapter have more or less relevance for South Africa. However, a combination of the Metropolitan Spatial Development Framework and the Bioregional Planning Framework may prove the most effective and efficient. The Metropolitan Spatial Development Framework principles and guidelines could be used to direct urban issues, while the Bioregional Planning Framework's Spatial Planning Categories could be applied to rural areas (agricultural and natural environments). This would accommodate the dual core model.

A compromise would have to be reached between the Metropolitan Spatial Development Framework and Bioregional Planning Framework principles regarding development beyond the urban edge. The Metropolitan Spatial Development Framework distinctly prohibits the retirement village, residential, golf course and golf estate developments (refer to section 4.7.5), while the Bioregional Planning Framework allow compact resort and recreational developments in agricultural areas (spatial planning category C) (refer to Table 4.1).

## **5. RELEVANT LEGISLATION SUPPORTING URBAN EDGE PROTECTION**

### **5.1 INTRODUCTION**

Perhaps the most important factor in the successful maintenance of an urban edge is the legal means to enforce it. As has been shown in the previous chapter, South African efforts to maintain an urban edge and to curb urban sprawl has not been very successful. One reason for this is the postmodernist approach to planning, development and even conservation. Each application for development is treated on its own “merits” making it difficult to establish overall policy.

Yet there are legal mechanisms for establishing and protecting an urban edge. In the Western Cape the most important are:

- the Land Use Planning Ordinance (15 of 1985), to be replaced by the Planning and Development Act (7 of 1999);
- the Local Government: Municipal Systems Act (32 of 2000) which allows for spatial development frameworks;
- the Environment Conservation Act (73 of 1989: section 21, 26) which allows for the introduction of protected natural environments and environmental impact reports;
- and the National Environment Management Act (107 of 1998) which enforces integrated environmental management.

Other laws that will be discussed are the Subdivision of Agricultural Land Act (70 of 1970), the Development Facilitation Act (67 of 1995) and the Land Use Bill (2000). Two aspects will be looked at:

- mechanisms for setting policy (such as an urban edge); and
- mechanisms to enforce such a policy.

## **5.2 LAND USE PLANNING ORDINANCE**

The Western Cape Land Use Planning Ordinance (Ordinance 15 of 1985) made the drafting of structure plans compulsory. Structure plans were intended to contain guidelines for future spatial development (section 5(1)).

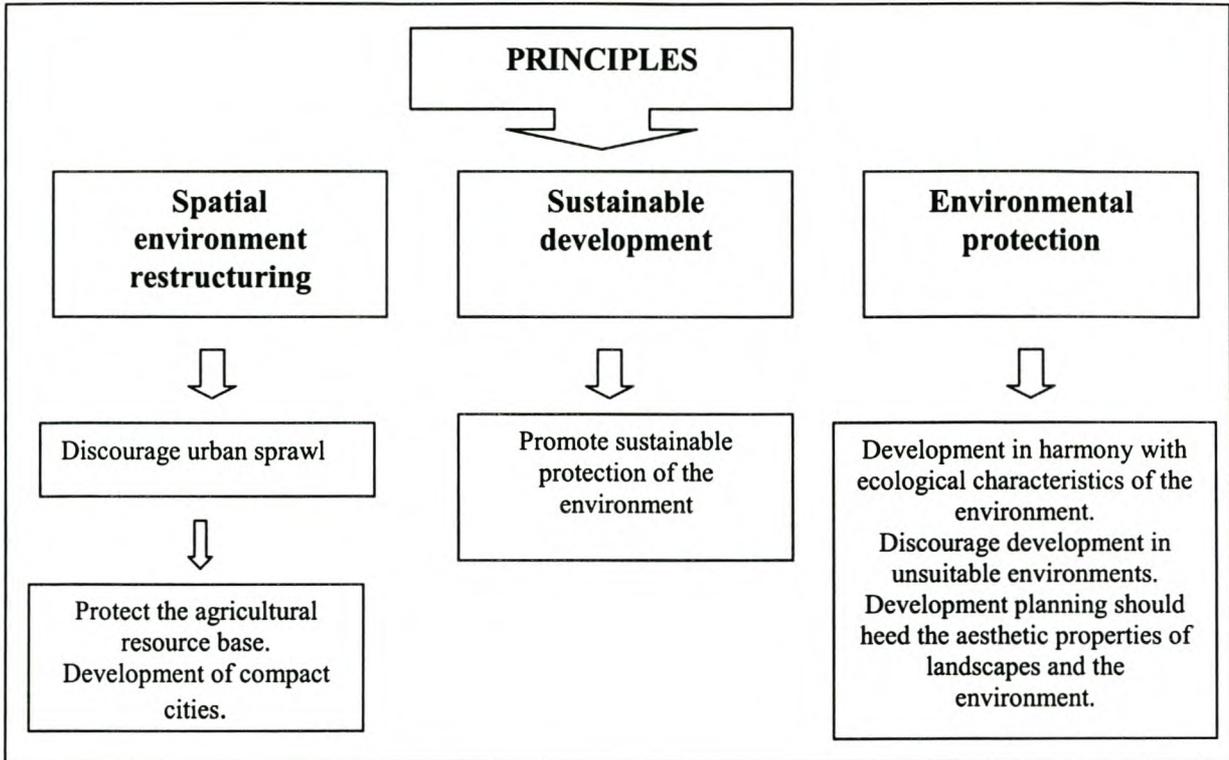
A structure plan may not confer or take away any right of land, and a land owner whose land decreases in value as a consequence of a rezoning (contrary to his or her wishes) may claim compensation from the local authority involved (section 5, 19(1)). Any application may be refused solely on the basis of a lack of desirability (in respect of structure plan guidelines and its effect on existing rights (section 36(1)). Provisions for an urban edge may be included in a structure plan.

## **5.3 WESTERN CAPE PLANNING AND DEVELOPMENT ACT**

The Western Cape Planning and Development Act (Act 7 of 1999) will replace the Land Use Planning Ordinance. The Act is based on a number of principles (schedule 4) (refer to figure 5.1).

Chapter I of the Act provides for policy instruments in the form of integrated development frameworks - this seems to be the most powerful means of demarcating an urban edge at present. An integrated development framework may include strategies, proposals and guidelines to promote the Schedule 4 principles (section 5(1)(a)). A sectoral plan (containing more detailed strategies, proposals and guidelines for a specific sector) could be used to manage an urban edge; while a spatial plan could regulate the future spatial development of and area by demarcating an urban edge (Act 7 of 1999: section 5(1)(b)(c)). Chapter II and III provide for control by controlling rezoning and subdivisions.

The problem thus far is that the control mechanisms are sometimes applied in an ad hoc way because the policies set in development frameworks are not firm.



**FIGURE 5.1**  
**SCHEDULE 4 PRINCIPLES**

**5.4 LOCAL GOVERNMENT: MUNICIPAL SYSTEMS ACT**

The Local Government: Municipal Systems Act (32 of 2000) introduced integrated development planning: a single inclusive and strategic plan for the development of a municipality that should be developmentally oriented. The integrated development plan should reflect the municipal council’s vision for long-term development, including a spatial development framework that provides the basic guidelines for a land use management system (Act 32 of 2000: section 25, 26, 32(1)).

## 5.5 ENVIRONMENT CONSERVATION ACT

The regulations under section 21 of the Environment Conservation Act (Act 73 of 1989: section 21, 26.9) identifies activities that may have a detrimental effect on the environment; and requires prior consent. Such activities are: the *construction or upgrading* of roads, railways, airfields and associated structures outside the borders of town planning schemes and private and public resorts, as well as the *change of land use* from agricultural or undetermined use to any other land use and use for conservation or zoned open space to any other land use. Regulations concerning the scope, content, drafting and evaluation of environmental impact reports are provided for in the section 26 regulations.

These provisions cause fragmentation in the planning process: each rezoning application must first be approved by an official of the Department of Environmental Affairs and an environmental impact report compiled, before the applicant can approach the local authority.

This Act also introduced limited development areas where the nature and extent of development may be limited (Act 73 of 1989: section 23), a mechanism that may be used for urban edge protection.

## 5.6 NATIONAL ENVIRONMENT MANAGEMENT ACT

The National Environment Management Act (Act 107 of 1998: section 2(3)) requires development to be socially, environmentally and economically sustainable. The focus is on human needs (refer to section 1.4.3 of this study). The National Environment Management Act (section 23(2)) suggests integrated environmental management as a means to ensure:

- the effects of activities on the environment receive adequate consideration before actions are taken; and
- the consideration of environmental attributes in management and decision making which may have a significant effect on the environment.

Activities that may not be commenced without prior authorisation from the MEC or the Minister may be identified (e.g. section 21 principles of the Environment Conservation Act).

## **5.7 SUBDIVISION OF AGRICULTURAL LAND ACT<sup>4</sup>**

The Subdivision of Agricultural Land Act (Act 70 of 1970: section 3) controls the subdivision of agricultural land, by prohibiting the subdivision of agricultural land unless written consent has been obtained from the Minister. This Act should only be repealed when agricultural land has adequate protection.

## **5.8 DEVELOPMENT FACILITATION ACT**

The Development Facilitation Act (Act 67 of 1995) provides for a municipality to set land development objectives in section 27 to 29. Such objectives must be based on principles set in section 3 of the Act. Applicable land development objectives include (Act 67 of 1995: section 28b) sustained utilisation of the environment, overall density of settlements; and optimum utilisation of natural resources. Provincial development tribunals will decide on applications for development, guided by the general principles of development and development objectives. The following principles are of importance to this study (Act 67 of 1995: section 3(1)(c)(j)):

- discouragement of urban sprawl by compacting urban areas; and
- no particular land use (including agriculture, industry, commercial, mining, residential and conservation) should be regarded as being less important or desirable than any other land use.

As this Act is not applied in the Western Cape Province it will not be further analysed here.

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<sup>4</sup> The Subdivision of Agricultural Land Act (70 of 1970) still applies, although generally considered as repealed.

## **5.9 LAND USE BILL**

The Land Use Bill (2000), which will eventually replace the Development Facilitation Act (Act 67 of 1995), is based on directive principles of sustainability, equality, efficiency, integration and fair and good governance; and will prevail over any other legislation (section 3(2)). The principle of sustainability is particularly of interest to this study. Hereby, state policy will enjoy preference over private interests regarding spatial planning, land use management and land development processes and decisions (section 5(b)).

Agricultural land uses will once again be protected: agricultural land will only be allowed to change to other uses when real need exists, and "... prime agricultural land should as far as possible remain available for production (section 5(e)).

## **5.10 CONCLUSION**

One of the main problems of the legal system as far as making and maintaining mechanisms to protect the urban edge is concerned, is that the efforts of the relevant national departments are not coordinated, and they are not coordinated with the efforts of the provinces. Planning legislation should be coordinated with, amongst others, environmental and agricultural legislation. Consequently there is not one clear mechanism for establishing and maintaining an urban edge. It seems as if in the Western Cape Province, the Planning and Development Act may still be the indicated law to apply.

## 6. SPECIAL MANAGEMENT AREAS

The Northern Metro Urban Edge Study proposes that the urban edge be designated a special management area (Cape Metropolitan Council, 1999a: 44).

Special management areas (previously special management zones), as proposed in the draft Winelands Integrated Development Framework, are areas of excellence and good practice, to be managed in accordance with ISO 14 001 Environmental Management Systems to achieve sustainable development (Winelands District Council, 2000a: 222-226; Mr D Moss, personal communication, October 4, 2001). ISO 14001 (International Organisation for Standardisation) certification implies "... the identification of environmental management systems, policies and programs that organisations should establish and maintain in order to protect the environment ..." (Kuhre, 1995: 4). Participation in ISO 14001 certification is voluntary (Kuhre, 1995: 20). Kuhre (1995: 21) recommends that the greater the environmental impact an organisation has on the environment, the more in-depth their environmental management system should be. ISO 14001 is a general specification, providing a framework for the rest of the specifications (ISO 14001-ISO 14040) (Kuhre, 1995: 28).

Special management areas can be applied to special cultural (agricultural and historic) and natural environments to establish controlled circumstances without creating precedence. (Dennis Moss Partnership, 2000: 30). A special management area may be created by contractual agreement between a local authority and a landowner (in the case of privately owned land), or a formal council resolution (for state or municipal land). Dennis Moss Partnership, as creators of the special management area concept, encourages public sector participation (Mr D Moss, personal communication, October 4, 2001).

ISO 14 001 Environmental Management Systems encourage the realisation of environmental and economic goals. In practice, each landowner in a special management area should adopt and implement an ISO 14 001 Environmental Management System in order to promote environmental and economic sustainability.

Each special management area should establish a Special Management Area Trust and Trust Fund to manage and monitor the area (Winelands District Council, 2000a: 223).

Contributions to the Trust Fund may be based on a percentage of the selling price of land, while contributions to the Trust may be based on a percentage of the total revenue turnover of enterprises within a special management area. A Trust Fund may be established for each special management area on privately owned land to support the implementation of environmental policy and related expenses to be managed by a body corporate - established by a title owner or shareholders, while an umbrella trust may be established by a local authority for a larger area consisting of special management areas. Funds may be used for special projects, such as environmental protection or the development of agricultural potential (Mr D Moss, personal communication, October 4, 2001).

Contributions to a Trust and Trust Fund, as well as the cost of implementing ISO 14 001 Environmental Management Systems, may prove to be too expensive for most urban edge land owners.

The Winelands Integrated Development Framework proposes that special management areas should cover the entire Winelands district's agricultural area (spatial planning category C, indicated in Table 4.1) (Winelands District Council, 2000b: 186, 223). It also recommends that special management areas be formally identified on the Winelands Integrated Development Framework Spatial Plan, and that a sectoral plan for special management areas be prepared. Prescriptions pertaining to the categorisation of land (spatial planning categories) will not be affected by the proclamation of a special management area (Winelands District Council, 2000a: 227).

Special management area regulations will be attached to the *land*, and not to the land owner. No special management areas have been approved, nor do examples of contracts exist (Mr D Moss, personal communication, October 4, 2001).

Special management areas may be established in a variety of ways (Mr D Moss, personal communication, October 4, 2001):

- a local authority may approach a land owner(s) and propose that a special management area be established (not enforceable);
- a land owner may approach a local authority and apply for special management area establishment (e.g. prohibiting future subdivision of that section of farmland); or
- a special management area may be established as a condition of approval - for a proposed rezoning, subdivision or development - by a local authority (e.g. if the development of 20 housing units on a section of a farm is approved by council, a special management area may be established to prohibit further development of the remaining agricultural land).

In order to implement special management areas at metropolitan level, the cooperation of land owners of urban edge properties would have to be acquired. Here, public support and pressure would be needed to create awareness on a regional scale.

Traditional urban edge policies (refer to Table 7.1) - where a single line is demarcated - do not affect a landowner as directly as special management areas would: special management area establishment involves contractual agreements that are legally binding. Such contracts would enforce sustainable environmental management in a more definite and clear manner.

The special management area concept is a practical policy instrument that could marry theory (Metropolitan Spatial Development Framework and Bioregional Planning Framework principles) with reality. Special management areas could be introduced on the urban edge transitional zones (refer to section 4.7.2) to clarify vague policy descriptions. Unfortunately, urban edge land owners do not always have a social motivation for protecting the environment. In fact, most land owners participate in the speculative land market and could be hesitant to be bound, not only by zoning regulations, but by contractual agreements.

The voluntary establishment of special management areas necessitates extensive public awareness and support. The comparative success of Western European growth controls (vs. North American) can be attributed to the public support and awareness of sustainable development. Incentive schemes may be the solution, although it would be limited to

conditions of approval imposed by local authorities (due to local authority budgetary restrictions and priorities).

Special management areas, as proposed by the District Council, is not a practical option for urban edge protection because it is too complex and expensive for general application. Its usefulness will be limited to areas where urban edge land owners can afford to implement the ISO 14 001 Environmental Management Systems. The success of special management areas as an urban edge control instrument is dependant on sufficient public support, and affordability. It would be difficult to satisfy both conditions at metropolitan scale.

## 7. SYNTHESIS & CONCLUSION

In this study the efficacy of special management areas to protect the urban edge and to help curb urban sprawl has been investigated. The picture that emerged is not clear. It seems that in South Africa attempts at establishing and monitoring an urban edge, or for curbing urban sprawl, have been mostly unsuccessful. Similarly special management areas as proposed by the Winelands District Council cannot be applied as a general urban edge control instrument to assist in urban edge protection at metropolitan level as it is too complex, and depends largely on owner cooperation. It may also be concluded that an urban edge zone or area is preferable to a single demarcated line, since zones accommodate growth better than restrictive lines.

However, special management areas as a transition zone between urban and rural, could well be the answer if it is treated as a specifically defined zone with specific prescriptions. Such prescriptions should allow intensive farming and extensive urban uses that will reduce the economic pressure on agricultural land.

Urban sprawl cannot be allowed to continue at its present rate: the greater Cape Town area is dependent on its valuable agricultural land and natural environment for tourism and (agricultural) production. The urban edge should be protected and managed in a sustainable manner. Although urban edge protection is relatively new to South Africa, foreign measures should not be implemented blindly.

Although special management areas were proposed by the Bioregional Planning Framework, it could be implemented in conjunction with the Metropolitan Spatial Development Framework's urban edge transitional zones: special management area contracts could define vague policy descriptions. The proposed dual core model and the possible integration of the Frameworks should be investigated before special management areas are implemented at metropolitan level. During the integration process, sufficient public support of special management areas could be rallied as part of public participation. Local authorities should coordinate special management area conditions of approval to establish uniform objectives and protection measures on the urban edge.

**TABLE 7.1**  
**COMPARISON OF URBAN EDGE PROTECTION MEASURES**

	<b>GREEN BELTS</b>	<b>URBAN GROWTH BOUNDARIES</b>	<b>URBAN EDGE</b>	<b>SPECIAL MANAGEMENT AREAS</b>
<b>Motivation for private land owner involvement</b>	Compulsory participation	Compulsory participation	Compulsory participation	Voluntary participation
<b>Funding</b>	Government	Government	Government	Land owners (Trust Fund)  Government (Trust)
<b>Benefits for adjacent land owners</b>	Amenity value. Rising land values (for adjacent urban areas).	Amenity value. Rising land values (for adjacent urban areas).	Amenity value. Rising land values (for adjacent urban areas).	Amenity value.
<b>Benefits for participating land owners</b>	Protection from development pressures.	Protection from development pressures.	Protection from development pressures.	Protection from development pressures. Conditional approval of limited development.
<b>Disadvantages for participating land owners</b>	Land use rights restricted.	Land use rights restricted.	Land use rights restricted.	Land use rights restricted. Permanent nature of contractual agreements.
<b>General benefits</b>	Protection of farmland and control of sprawl.			
<b>General disadvantages</b>	Expensive for government if compensation of land owners are involved.	Expensive for government if compensation of land owners are involved.	Expensive for government if compensation of land owners are involved.	Relatively inexpensive for government (bulk of funding by private land owners).

Suggested alternatives for urban edge protection may include:

- state buy-out of development rights - that may include the expropriation of development rights of properties where limited residential development are approved (e.g. 20 residential units in a rural village surrounded by farmland);
- demarcation of urban edges proposed by the Metropolitan Spatial Development Framework (metropolitan level); or
- special management areas on the urban edges of the greater Cape Town area combining the Metropolitan Spatial Development Framework and Bioregional Planning Framework principles (the dual core model).

Since the Metropolitan Spatial Development Framework is the only existing policy that considers the protection of the urban edge, policies and specifications for the associated urban edge transition zones should be clarified (refer to section 4.5.2). Demarcation of a single urban edge line is not sufficient. Evaluation of the success of the zones provided for in the Metropolitan Spatial Development Framework cannot be done: detailed specifications are not available, and the zones have not been implemented yet.

No universally successful urban edge protection measure has been discovered - it is unlikely that it ever will. South Africa will have to experiment with measures based on local context, and the use of special management areas may be a step in the right direction.

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## 9. LEGISLATION

*Development Facilitation Act (67 of 1995).*

*Environment Conservation Act (73 of 1989)*

*Land Use Bill (2001).*

*Land Use Planning Ordinance (15 of 1985).*

*National Environmental Management Act (107 of 1998).*

*Physical Planning Act (88 of 1967).*

*Subdivision of Agricultural Land Act (70 of 1970).*

*Western Cape Planning and Development Act (7 of 1999).*

## 10. PERSONAL COMMUNICATIONS

Kannenberg, ACK. Planning Partners, February 28, 2001.

Moss, D. Dennis Moss & Partners, October 4, 2001.

Nieuwoudt, A. Stellenbosch Municipality, September 11, 2001.